

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 carbon neutrality by 2030 and net zero emissions by 2045 by engaging Sanofi towards the 1,5°C global warming 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 due 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



The infographic features a dark blue background with a white recycling symbol icon on the left. To the right of the icon, the words "waste management" are written in a large, white, sans-serif font. Below this, the infographic is divided into two columns by a vertical white line. The left column is titled "Our Objectives" and contains two bullet points. The right column is titled "Global Performance 2022" and contains two statistics.

Our Objectives	Global Performance 2022
• Reuse, recycle and recover <i>more than 90% of our waste</i> by 2025	86% of our waste is reused, recycled or recovered
• Have <i>100% of our sites landfill free</i> by 2025	68% of our sites are landfill free

In 2015, Sanofi set out to define a new and ambitious environmental strategy across its value chain by rolling out its Planet Care program. The objective was to define a roadmap to better integrate the environmental management system into the company's decision-making process. The circular economy and eco-design were identified as major components to be integrated into Sanofi's environmental and economic approach. This project has received the support of Sanofi's top management.

With the double objective to prevent resources' initial extraction and final discarding, this model focuses on circulating products and materials at their maximum use value, by creating value loops of various sizes, to maintain, repair, reuse, recondition and recycle them, before considering their potential final discarding.

Given its objective, the circular economy should not be dissociated from the notion of **sobriety**: reducing the production and consumption of material objects, digital technologies, and energy to what is necessary, as the most effective way to prevent resource consumption and waste generation.

The circular economy is a **holistic approach**, integrated into all stages of a value chain, from:

- **The supply side of the economy:** sustainable resource procurement, eco-design of goods and processes, development of industrial and territorial ecology and implementation of the functional economy (switching to the use of a service rather than the possession of a good);
- **The consumer demand and behaviour:** responsible purchasing behaviour, good product use, and product's duration of use extension;
- **The management of waste** that could not be avoided, which should favour recycling and, where necessary and possible, energy recovery, thus closing the loop.

Our results in 2022 (excluding EuroAPI sites)

Waste (tonnes)	2022	2021	2019 (baseline year)	Change vs 2019 (%)
Hazardous waste				
Recycled hazardous waste	9,044	9,211	17,977	-50%
Hazardous waste incinerated with thermal recovery	38,446	40,627	40,507	-5%
Hazardous waste incinerated without thermal recovery	14,316	13,104	15,080	-5%
Hazardous waste sent to authorized landfills	207	396	602	-66%
Sub-total: hazardous waste	62,013	63,338	74,166	-16%
Non-hazardous waste				
Recycled non-hazardous waste	71,559	60,365	70,440	+2%
Non-hazardous waste incinerated with thermal recovery	22,859	24,162	22,035	+4%
Non-hazardous waste incinerated without thermal recovery	1,180	818	2,265	-48%
Non-hazardous waste sent to authorized landfills	7,821	10,478	11,688	-33%
Sub-total: non-hazardous waste	103,419	95,823	106,428	-3%
TOTAL hazardous and non-hazardous waste	165,432	159,161	180,594	-8%

The company has registered an increase in 2022 vs 2021 but decreasing trend by -8% vs baseline (2019). A normalization of waste per SKU is impossible because of very different production methods used for biologics, chemicals, or vaccines APIs as well as for the wide variety of drug products and medical devices. We are open to get any recommendation on how to do a meaningful normalization.

To continuously reduce our environmental impacts together with procurement department we have implemented all Planet Care objectives into our tenders. In addition, we have projects in place to reduce waste by 2025 e.g., to recycle sludge at our Aramon site.

NB: Data provided in this section relate to waste from Sanofi's production activities. Data for waste not related to our production activities and for non-recurring waste are not consolidated; 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 can play a key role in its journey towards carbon neutrality in 2030 and 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 overcome these difficulties and accelerate its transition to a circular economy, Sanofi is developing a dedicated circular economy roadmap that aims to close the loop on its entire value chain:

- Promote sober and sustainable procurement;
- Eco-design our products and processes;
- Encourage industrial symbiosis to optimize resource management;
- Develop health as a service and functional economy principles;
- Promote responsible consumption of our products;
- Extend the useful life of our products; and
- Reduce our waste and better reuse and recycle it.

3.1. PROMOTE SOBER AND SUSTAINABLE PROCUREMENT

Sustainable procurement is the integration of CSR principles 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.

Sanofi recognizes 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.

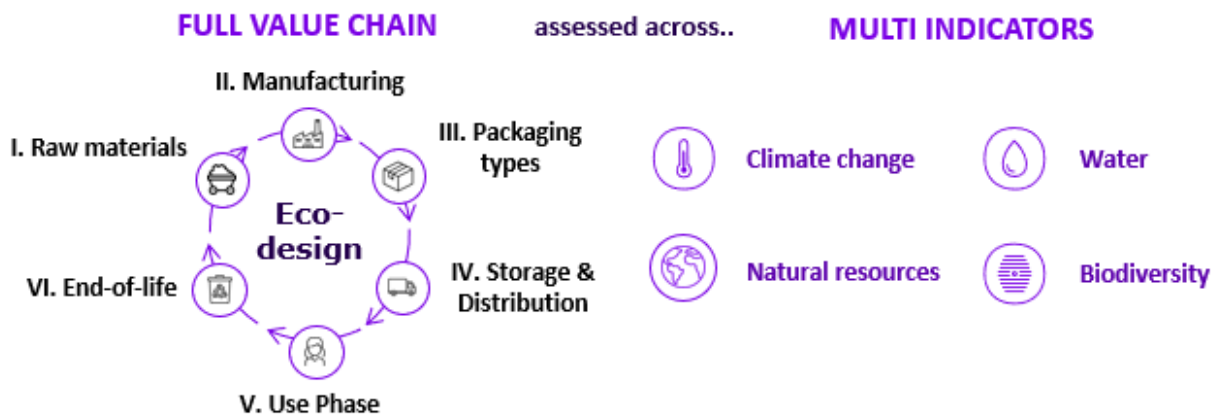
To give one example, in 2021, after 2 years of manufacturing, design and qualification work, Sanofi US has a viable compostable solution to **replace ~2M of virgin polystyrene** (EPS) containers: Harvest 100% **bio-based** material from renewable resources like corn and sugar cane to create PLA.

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

3.2. ECO-DESIGN PRODUCTS AND PROCESSES

The eco-design concept is a “rethink” approach that aims to improve our medicines’ environmental performance by integrating environmental criteria into our product design and development. 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 use, circularity ...);
- To reduce the environmental impacts in a global perspective.



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

That is why Sanofi is committed to deliver the following:

1. By 2025, 100% of our new products will be eco-designed
2. By 2027, 100% of our vaccines packaging will be blister-free
3. By 2030, 100% of our top-20-selling products will be eco-designed

Fully integrated in our “Planet Care” roadmap, Eco-design is one of our Corporate Social Responsibility flagships.

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.

3.3. 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 of the same territory. It aims at optimizing the use of available resources between these actors to implement loops between companies 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.

We also address here the objectives of internal synergy, as well as the preservation of local resources, such as water. Indeed, drug manufacturing can heavily pollute water, leading to a significant impact on local biodiversity and ecosystem services if wastewater is not properly disposed of.

To promote industrial synergies, Sanofi aims 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

Sanofi promotes 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, Sanofi in Germany is constantly evolving: 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.

In June 2022 Sanofi announced the opening of the company's new campus at Cambridge Crossing in Cambridge, Massachusetts, US. Sanofi at Cambridge Crossing consists of two buildings, both U.S. Green Building Council LEED® Gold Certified, totaling 900,000 square feet, and located at 450 Water Street and 350 Water Street. The campus incorporates state-of-the-art environmental features, including automated light dimming, CO2 sensors, and advanced heating/cooling systems, among others, to use energy and resources efficiently and to provide a healthy workspace for employees. WaterSense fixtures will harvest rainwater and create up to 60 percent water efficiency, from the EPA baseline, by using rainwater harvesting.

3.4. 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 the subject of 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-ended questions, and support them with information and services to help them live a better life with the condition. 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.

3.5. PROMOTE RESPONSIBLE CONSUMPTION OF OUR PRODUCTS

Many initiatives have been developed to raise awareness among citizens about the proper use of medicines as part of responsible consumption to ensure patient safety, to limit waste and to reduce emissions of pharmaceutical residues to the environment.

Promoting responsible consumption of its products by its consumers means giving them the information they need to make an **informed and reasoned choice of consumption**, taking into account objective environmental information. In other words, the consumer must have access to all the information concerning the product: its environmental impact on the whole value chain, and the impact of its consumption on health.

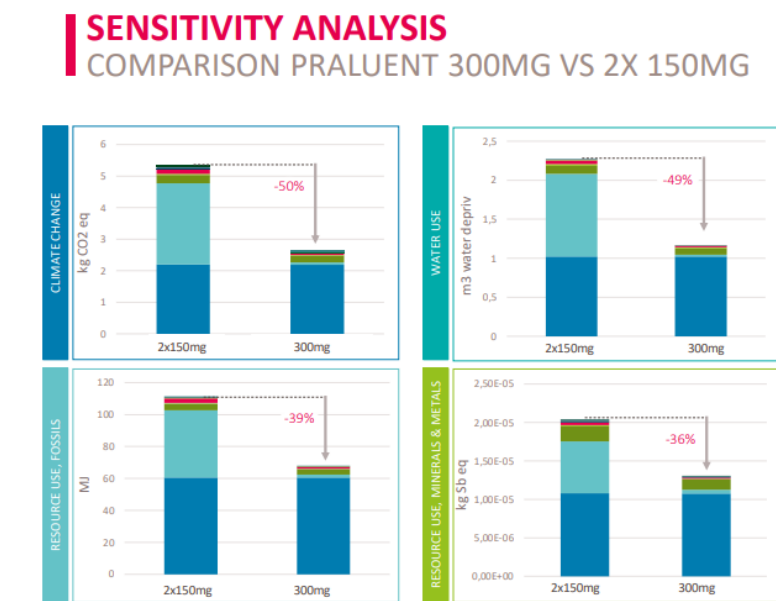
This principle is currently implemented through **communication and awareness campaigns** aimed at drug buyers. This is why Sanofi is working on different areas:

- The development of display and environmental claims on packaging
- Promotion of pre-treatment options, especially to prevent diabetes (exercise, etc.)
- Raising awareness among prescribers to encourage the rational use of APIs
- Establishing a dialogue with key external stakeholders and gathering customer feedback to stimulate responsible consumption

Sanofi also undertakes to lobby for good, on issues such as the cost-effectiveness of reusable insulin pens for patients around the world, or the dispensing of single-use medications in pharmacies.

As an example, **awareness** campaigns on the right way to use medicines (e.g., “Antibio Responsables” website in France: “Do not forget a simple waste-reduction measure: whenever possible, try to obtain only the quantity of medicine you need. This will minimize the disposal of expired unused medicines later on.”)

The maximum dose of Praluent is 150 mg every two weeks or once every four weeks (monthly) with 300 mg. Based on a recent life cycle assessment, Sanofi also acknowledges that Praluent 300 mg enables to reduce climate change impact by 50% vs 2 doses of Praluent 150mg.



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

3.6. 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.

Sanofi identifies 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.

3.7. 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. The ambitious target for the first 12 months is for 25% of all injection pens distributed by the four companies in Denmark to be recycled. This amounts to more than 25 tonnes of plastic.

When you know that more than 400 million tons of plastic are produced every year worldwide, and only less than 10% is recycled, we're proud to join forces with other pharma companies to address plastic waste. We'll ensure as well that this innovative plastic recycling solution results in net carbon savings based on product carbon footprint Life Cycle Assessment.

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.

3.8. REDUCE OUR 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, as a result of medicines consumed and then excreted by patients, or as a result 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 to take advantage of existing waste through reusing, repairing/refurbishing, recycling and energy recovery.

As a pharmaceutical company, Sanofi believes it is important to reduce both environmental and health impacts of waste and to improve resource efficiency. As part of its Planet Care program, Sanofi considers that 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.

Sanofi takes a multi-faceted approach to industrial waste, based on three waste management programs:

- "Be landfill free" program to avoid landfill with a target of less than 1% in 2025 and 100% of sites landfill-free;
- "3R (Reuse-Recycle-Recover)" program with a target >90% of volumes recycled or recovered by 2025. Sanofi includes in this program the avoidance of waste, especially hazardous waste:
- Transit as much as possible from incineration to recycling.
- "Performance & digitalization" program to simplify/standardize our processes, leverage partnerships with major waste companies and implement on site apps and software.

These actions are complemented by active support of take-back programs to ensure a proper disposal of unused medicines in many countries in Europe, Asia, North and South America.

As a few examples:

In Frankfurt, Germany, we are 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**.



We are optimizing solvent through the development of new synthesis in Sisteron, France. **80% of the waste is recovered, 35% of which is re-used** on site to produce 80% of the steam requirements.

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 will allow all egg waste to be composted in 2023



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

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

- *Eco-design factsheet*
- *A Responsible and Sustainable Chemistry factsheet*
- *Climate Change – Road to Net Zero factsheet*
- *Water Stewardship factsheet*
- *Pharmaceuticals in the Environment factsheet*
- *Transporting Medicines and Vaccines factsheet*