

## CARBON FOOTPRINT – CO2 Emissions (Scope 1, 2 & 3)

### GRI Standards :

402-1: Energy

305-1, 305-2, 305-3, 305-4, 305-5: Emissions

### EXECUTIVE SUMMARY

Sanofi has committed to limit the impacts linked to its activities on the environment. One of the major challenges of the Sanofi *Planet Mobilization* program consists in reducing its Greenhouse Gas (GHG) emissions:

- direct emissions related to Scope 1 and 2 (industrial, R&D and tertiary sites, including the medical representative's fleet).
- indirect emissions related to scope 3, associated with the value chain activities (transportation and distribution, purchased goods and services, waste generation, etc.).

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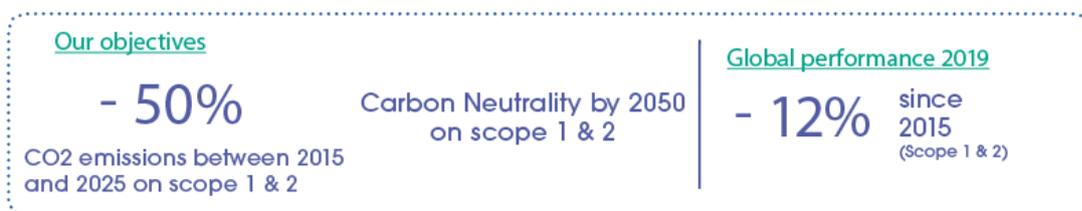
## 1. BACKGROUND

From the raw materials we use in our products to their potential end-of-life impact on human health and the environment, we strive to reduce the potentially direct and indirect impact of our activity. We have identified five major environmental challenges relating to our businesses: greenhouse gas emissions and climate disruption; water; pharmaceuticals in the environment; waste; and biodiversity. Since 2015, the *Planet Mobilization* roadmap sets ambitious targets that involves all the company's resources in defining objectives and engaging with external partners.

## 2. GREENHOUSE GAS EMISSIONS RELATED TO SCOPE 1 & 2

### 2.1. Dashboard: objectives and progress

Based on 2015 figures, we are undertaking to **halve our carbon emissions by end 2025** and **reach carbon-neutral status by 2050** on our scope 1 & 2 (industrial, R&D and tertiary sites, including the medical rep fleet).



### 2.2. Key figures

#### 2.2.1. Scope 1 and 2 CO<sub>2</sub> emissions

Tons of CO <sub>2</sub> e <sup>(a)</sup>	2019	2018	2015 (baseline)
Scope 1 (Natural gas, fuels, refrigerant leaks, sales fleet fuels)	460 108	476 487	472 243
Scope 1 (sales fleet fuels)	99 313	99 987	133 837
Scope 2 (electricity, steam purchased, etc)	370 508	382 022	455 412
<b>TOTAL</b>	<b>929 929</b>	<b>958 496</b>	<b>1 061 492</b>

(a) CO<sub>2</sub>e = CO<sub>2</sub> equivalent

Compared to 2015, there is a decrease of 12%. Significant improvements have been done with our sales fleet consumption thanks to an eco-driving policy and the use of cars that consume less.

## 2.2.2. Sanofi's energy consumption

Energy consumption (MWh)	2019	2018	2015 (baseline)
Natural Gas	2 134 909	2 169 022	2 144 747
Electricity	1 427 319	1 557 898	1 628 570
Renewable energies	186 926	41 872	42 478
Others (steam, fluids, chilled water, compressed air)	471 021	449 558	428 434
<b>Total</b>	<b>4 220 175</b>	<b>4 218 350</b>	<b>4 244 229</b>

Sanofi accelerates its purchase of renewable electricity wherever possible. In 2019, all Sanofi Pasteur sites in France use 100% renewable electricity.

## 2.3. Highlights

### 2.3.1. Improving energy efficiency and decarbonization at our sites

#### 2.3.1.1. Working with energy sector leaders: a strategic partnership

The Global Industrial Affairs Department, in close collaboration with the sites, procurement and HSE teams have set up specific partnerships with Schneider Electric and ENGIE since 2013 to improve the energy efficiency of facilities at our sites.

Within the framework of the ENGIE partnership, a second step has been launched in 2018 to accelerate savings on common topics (HVAC, process water production). The name of this program is Blue Print.

#### 2.3.1.2. Projects in Italy, Germany and France

Some years ago, at Anagni and Brindisi we invested about €10 million to set up two new cogeneration units (combining heat and power) at our Cologne (Germany) and Origgio (Italy) sites.

More recently, in Italy, we have built a trigeneration unit at our Scoppito site. The term trigeneration refers to the simultaneous production of three forms of energy: electricity, hot water and cold water. The plant provides a major opportunity to reduce energy costs in Italy where there is a significant gap between electricity prices and natural gas prices. The performance of this new trigeneration plant reduces the site's energy costs by 36% and CO<sub>2</sub> emissions by 12%, which will enhance our competitiveness and bring us closer to achieving our environmental and sustainable production targets.

In 2019, at Montpellier, the heat recovery and the use of heat pumps decreased by –20% the emissions of the site.

### 2.3.1.3. Adapt our sites to climate change with natural fluids instead of fluorinated gases for our chillers

Following the Kigali's amendment in 2016, Sanofi designs its chillers with a priority on natural fluids to limit the GHG impact from fluorinated gases with a high Global Warming Potential (GWP).

Within the scope of the Sanofi-Cofely partnership, we have installed a centralized refrigeration unit at our Sisteron (France) site using the most advanced techniques. This new unit reduces electricity consumption by 7.6 GWh annually, which represents around 15% of the site's electricity consumption. This new plant is using ammoniac and CO<sub>2</sub> instead of freons with high Global Warming Potential.

### 2.3.1.4. Energy audits and ISO certifications

Sanofi has expanded its program with Schneider Electric to help improve energy performance – which to date has focused on research for energy efficiency opportunities like cogeneration and refrigeration units – to include wide-ranging audits of energy and management systems at our sites.

In 2019, 27 sites are certified ISO 50001, compared to 25 in 2018. Such certification attests to the efficiency of our sites' energy management systems.

## 2.3.2. Reducing our carbon footprint: the Maalox case study

At our Scoppito site, we carried out a carbon footprint analysis of the production of Maalox 400 mg tablets for sale on the Italian market. This study was designed to identify activities that could be modified to reduce energy consumption and CO<sub>2</sub> emissions. Sanofi received a carbon footprint certification following this study, conducted in compliance with the ISO/TS 14067 standard. This is the first time this type of certification has been granted for a pharmaceutical product – indeed, no similar studies have been conducted in the pharmaceutical industry to date. The findings are expected to help us lower production costs and thereby enhance the company's competitiveness.

## 2.3.3. Making our buildings and facilities more environmentally friendly

Since Sanofi introduced our Sustainable Building Charter in 2013, we have sought to make our tertiary buildings more eco-friendly. End of 2019, more than 10 main administrative buildings have received LEED (Leadership in Energy and Environmental Design) or BREEAM or HQE certification.

For instance, in 2015, we inaugurated our new administrative site at the Campus Sanofi Val de Bièvre near Paris. To ensure high-energy performance as part of an eco-responsible approach, the new building is **bioclimatic\*** in design. At the site, a specific energy policy supports this approach by strongly encouraging the control of energy consumption, energy-efficient purchasing and the replacement of equipment by identical energy-performing equipment. In addition, the CSVB site received two certifications:

- BREEAM (Building Research Establishment Environmental Assessment Method), with a rating of “very good”.
- High Environmental Quality (HQE : Haute Qualité Environnementale), with a rating of “exceptional”.

\* **Bioclimatic** indicates that a building's location and design take into account the local climate and environment to reduce energy required for heating, cooling and lighting. The design of a bioclimatic building is based in particular on selecting suitable materials and using air circulation, solar radiation and geothermal techniques, as well as rainwater recovery.

*For more information, see our [Document Center](#): The Sustainable Building Charter*

#### 2.3.4. Our medical sales vehicle fleet

In 2019 the progressive renewal of the company's fleet was carried out with a focus on improving the fuel efficiency of our fleet and bringing it into line with the limit set at 120g CO<sub>2</sub>/km. So far, around 56% of our total vehicle fleet is compliant with this limit, including motorcycles in several Asian countries (India, Indonesia, Vietnam, etc.). These results have been achieved partly thanks to the "eco-driving" technique promoted among our affiliates, which helps limit fuel consumption. Eco-driving techniques are part of road safety training in many of the countries where we operate such as the US, Germany or France but also in Argentina, India or Russia. In addition, Sanofi continues to promote the use of low-carbon cars and now uses a total of nearly 4,000 such cars worldwide: 2,200 cars running on biofuel (mostly in Brazil); 1,750 hybrid cars (mostly in Japan and Mexico).

### 3. GREENHOUSE GAS EMISSIONS RELATED TO SCOPE 3

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Scope 3 greenhouse gas (GHG) emissions are the other indirect emissions (vs. Scope 1&2) associated with other functions of the value chain (including transportation, purchased goods and services, waste generation, etc...).

#### 3.1. Context

Sanofi worked in collaboration with a third-party expert to estimate the company's Scope 3 emissions based on a robust methodology. Sanofi has assessed the specific categories listed in the GHG Protocol by:

- Focusing on the most representative and manageable emissions, within a comprehensive framework;
- Using robust datasets, emissions factors and methodologies to convert those data into powerful and relevant values.

#### 3.2. Key figures

In 2019, Sanofi's total Scope 3 CO<sub>2</sub> emissions amounted to 6 122 077 tCO<sub>2</sub>e, representing 87% of its global CO<sub>2</sub> emissions worldwide.

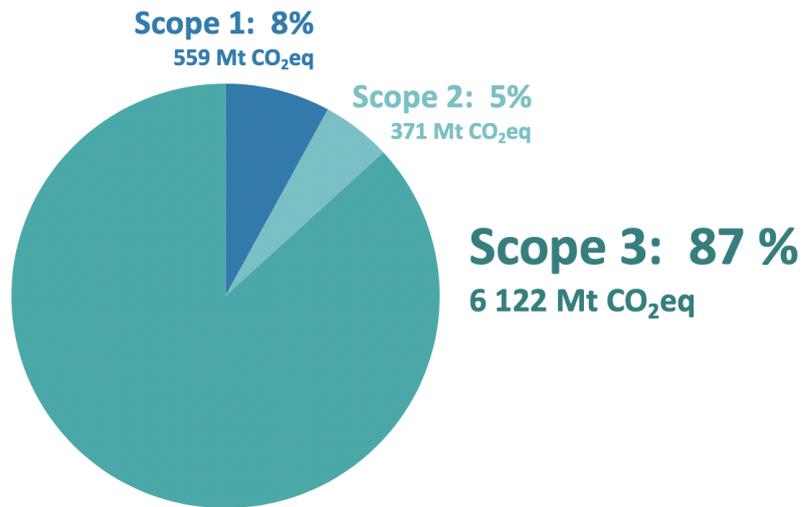


Figure 1: Scopes 1, 2 and 3 emissions in 2019

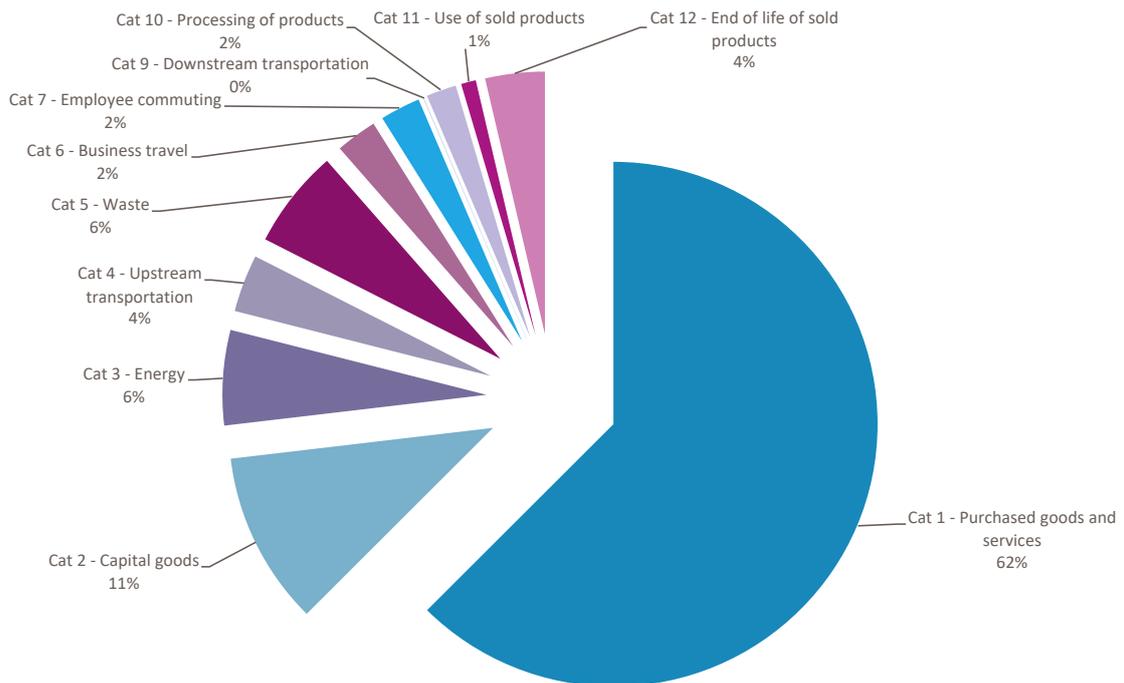


Figure 2: Contributions to 2019 Scope 3 emissions

### 3.3. Emissions per category

	Category	Description of the method	Source of information	2019 tCO <sub>2</sub> e <sup>(1)</sup>	2018 tCO <sub>2</sub> e
<b>Upstream GHG emissions</b>					
1	Purchased goods	Calculation based on reliable activity data for the goods purchased	Activity data from the purchase database	<b>3,823,973 <sup>(a, b)</sup></b>	<b>3,568,220</b>
2	Capital goods	Expenses for all items of the indirect procurement: Manufacturing Capex and services	Economic data from the purchase database	<b>652,794 <sup>(a)</sup></b>	<b>619,972</b>
3	Fuel and energy-related activities	Use of data related to energy consumption from industrial and R&D sites and assumptions to calculate emissions from the tertiary sites	Environmental database	<b>358,678 <sup>(a)</sup></b>	<b>370,315</b>
4	Upstream transportation and distribution	Calculation based on reliable activity data such as distance between Sanofi sites, center sites and their main suppliers, and Emissions data directly provided by suppliers	Supply chain database	<b>216,483 <sup>(a)</sup></b>	<b>225,382</b>
5	Waste generated in operations	Raw data reported by industrial and R&D sites, in metric tons broken down for each waste categories	Environmental database	<b>372,442 <sup>(a)</sup></b>	<b>371,036</b>
6	Business travel	Based on global distance travelled by type of transport, and including hotel nights incurred during business travel	Purchase database and mileage sent by travel agencies	<b>154,990 <sup>(b)</sup></b>	<b>151,372</b>
7	Employee commuting	Details on the number of employees per site combined with a survey	International social report and facility management mapping	<b>150,766 <sup>(a)</sup></b>	<b>161,037</b>
8	Upstream leased assets	Included in Scope 1 & 2 (for energy use)		<b>N.A.<sup>(c)</sup></b>	<b>N.A.<sup>(c)</sup></b>

	Category	Description of the method	Source of information	2019 tCO <sub>2</sub> e <sup>(1)</sup>	2018 tCO <sub>2</sub> e
<b>Downstream GHG emissions</b>					
9	Downstream transportation and distribution	Estimate of the distances and transportation modes for patients to buy Sanofi products		<b>874 <sup>(a)</sup></b>	<b>851</b>
10	Processing of sold products	Number of APIs and semi-finished products sold to other companies has been used, modeled, and evaluated thanks to several steps of calculation and hypothesis	Sanofi third party sales	<b>112,518 <sup>(a)</sup></b>	<b>115,755</b>
11	Use of sold products	Assumptions based on primary data, including distances travelled, energy consumption for refrigeration, and the nurse's injection habits		<b>55,855 <sup>(a)</sup></b>	<b>316,255</b>
12	End-of-life treatment of sold products	French collection efficiencies have been used and extrapolated worldwide since information on other countries are difficult to gather	Purchase database	<b>222,701 <sup>(a)</sup></b>	<b>177,524</b>
13	Downstream leased assets	Not relevant for year 2015		<b>N.A.<sup>(c)</sup></b>	<b>N.A.<sup>(c)</sup></b>
14	Franchises	Sanofi does not operate franchises	Sanofi turnover	<b>N.A.<sup>(c)</sup></b>	<b>N.A.<sup>(c)</sup></b>
15	Investments	Included in other categories when relevant		<b>N.A.<sup>(d)</sup></b>	<b>N.A.<sup>(d)</sup></b>
<b>Total Scope 3</b>				<b>6,122,074</b>	<b>6,077,719</b>

(1) Published full Scope 3 emissions, completed in 2020 on 2019 data. Tool for Scope 3 emissions calculation based on recognized methodology and developed by an expert third party.

(a) activity variation ; (b) perimeter variation ; (c) not significant ; (d) This category applies to investors. Sanofi owns actions in companies that are customers or suppliers of Sanofi. The emissions generated by the products and services from those collaborations are already accounted for in other categories. In 2016, 2017 and 2018, in order to avoid double counting, the 15th category is considered as not applicable.

Greenhouse gases emissions are stable between 2018 and 2019, indeed the gap (+0.73%) is considered as non-significant, considering the range of uncertainty stemming from the volume of data treated, and the scale of the assessment.

Nevertheless, some elements can be highlighted to understand the main trends variations at the level of categories:

- **Category 1:** This category includes purchases of materials, in particular chemical raw materials, subcontracted products and packaging and medical devices. The main impacts of category 1 come from 3 sources.
  - On the one hand, outsourced products represent around 45% of the category's impact and saw their impact increase by around 20% in absolute terms between 2018 and 2019. Sanofi's strategy, aiming at increasing the share of its products outsourced in its purchases, is consistent with this result.
  - The second pole of contribution corresponds to the purchase of chemical raw materials which constitute approx. 25% of the category's impacts. The CO<sub>2</sub> emissions associated with these products nevertheless decreased by around 10% between 2018 and 2019.
  - Finally, packaging and devices, whose emissions contribute around 20% of the impact of Category 1, saw associated emissions grow by almost 50% due to an increase in the purchased volume (specifically the laminates kinds).
- **Category 11:** The significant decrease between 2018 and 2019 is mainly due to the sale by Sanofi of its site in Holmes Chapel (United Kingdom) manufacturing products containing propellant gas, which represented about 80% of the 2018 impacts;
- **Category 12:** The increase (+20% in mass) in the volume of purchases of packaging and medical devices (about 75% of this category's impacts) as well as the upward revision of the hypothesis of percentage of unused drugs (20% in 2018, 25% in 2019) explain this difference between 2018 and 2019.

## 3.4. Highlights

### 3.4.1. Reducing CO<sub>2</sub> emissions due to business travel and employee commuting

CO<sub>2</sub> emissions from business travel and employee commuting are part of our Scope 3 CO<sub>2</sub> emissions.

As part of our commitment to reduce our CO<sub>2</sub> emissions, Sanofi has taken steps to encourage employees to use lower carbon means of transportation. For example, at our Campus Sanofi Val de Bièvre site, electric buses are provided to drive employees from the site to the subway. Employees are strongly encouraged to choose public transportation and the site is equipped with a room for bikes and reserved spots for electric vehicles. To promote carpooling, a mobile application called "Smart Autostop" makes it easy for employees to locate nearby passengers and drivers for the work-home commute.

In addition, in order to limit emissions from business travel, a global internal travel policy, which applies to all Sanofi sites worldwide, sets criteria when preparing a business trip. Those criteria are automatically set within the booking tool used internally, depending on the duration of travel. Moreover, Sanofi promotes green meetings by encouraging the use of telepresence and high-definition video-conference equipment at several of our sites. Such rooms allow participants to avoid traveling to different sites and significantly reduce travel-related CO<sub>2</sub> emissions. As recommended by our global travel policy, virtual meetings option must be assessed and preferred before taking any decision to travel for business.

### 3.4.2. Supply chain as lever for reducing CO<sub>2</sub> emissions

Every day nearly 15 million medicines are distributed worldwide. Our supply chain is designed to deliver treatment while ensuring product quality. Aware of the impact that its medicine distribution activities can have on the climate, Sanofi has been providing solutions for over 10 years. Sanofi is committed to reducing its carbon footprint by adopting responsible practices to reduce our greenhouse gas emissions throughout the world.

Solutions to reduce the carbon footprint:

- Sanofi has been working on its international transport network significantly by reducing use of air transport and increasing maritime transports which is less polluting.
- Thereby maritime transport avoids the emission of 260,000 tons of CO<sub>2</sub> annually.

Other actions to create a more efficient and environmentally friendly multimodal transport chain were organized:

- Decrease air transport, and prioritize rail and waterways transports;
- Increase the fill levels of trucks and sea containers;
- Develop rail for intra-European deliveries;
- Experiment with electric and natural gas vehicles for in-town deliveries;
- Design packaging to reduce volume and optimize transport;
- Group product shipments and pool transport to reduce the number of trucks on the road.

### 3.4.3. Key figures:

- 80% of reduction of CO<sub>2</sub> emissions over 10 years;
- 86% of the intercontinental expeditions are made by sea route.

More efficient transport and environment-friendly, such is the new challenge that we settled.

### 3.5. Reliability of the data and methodology used for the different categories:

Scope 3 category	Level of contribution	Quality of data sources	Quality of the modeling & calculations	Exhaustiveness
1.Purchased goods	+++	+++	++	+++
2.Capital goods	++	+++	++	+++
3.Fuel and energy-related activities	++	+++	++	+++
4.Upstream transportation and distribution	+	+++	++	++
5.Waste generated in operations	++	++	++	++
6.Business travel	+	++	++	++
7.Employee commuting	+	++	++	+++
8.Upstream leased assets	N.A.	N.A.	N.A.	N.A.
9.Downstream transportation and distribution	++	+	++	++
10.Processing of sold products	+	++	++	++
11.Use of sold products	++	++	++	+++
12.End-of-life treatment of sold products	+	++	++	+++
13.Downstream leased assets	N.A.	N.A.	N.A.	N.A.
14.Franchises	N.A.	N.A.	N.A.	N.A.
15.Investments	N.A.	N.A.	N.A.	N.A.

Captions:

- Level of contribution: Relative contribution of the category to the total Scope 3 emissions  
 +++: Very high contribution  
 ++: Significant contribution  
 +: Small contribution
- Quality of data sources: Robustness of the data used for the calculation of Scope 3 emissions  
 +++: Excellent quality (primary data mostly)  
 ++: Good quality (primary data when possible, estimations/hypotheses for other aspects)  
 +: Fair quality (mainly based on assumptions or public information)

3. Quality of the modeling and calculations: Robustness of the hypothesis and emission factors used for the calculation of Scope 3 emissions
  - +++ : Excellent quality (almost no simplification, very precise modelling, adequate emission factors)
  - ++ : Good quality (adapted modelling, some simplification when necessary, proxies used for some of the calculations)
  - + : Fair quality (mainly based on assumptions or public information)
  
4. Exhaustiveness: Representativeness and relevance of the calculations to the overall category of the Scope 3 emissions
  - +++ : Very good exhaustiveness (calculations represent the overall category, for the most part without any gaps)
  - ++ : Good exhaustiveness (fairly complete representativeness of calculations for the category; some simplification)
  - + : Fair exhaustiveness (the completeness of the modelling may not be optimal at all times)

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

- > Transporting Medicines and Vaccines Factsheet
- > Sustainable Building Charter
- > HSE Policy
- > HSE Management System Factsheet
- > Circular economy Factsheet
- > Waste Management Factsheet