

Scope 3 emissions

Almost every kind of business activity generates CO₂ emissions. Daimler, as part of a complex economic and social system, also generates the greenhouse gas carbon dioxide in the course of its operational activities. This poses two major challenges, which we have committed ourselves to solve through our resources as a company. Firstly, we have committed ourselves to massively reducing the CO₂ emissions generated by our products and our production processes (see Sustainability Report 2018, Climate protection and air quality, p. 14 and p. 27). Secondly, we are one of the first industrial companies to comply with the basic principles of the Greenhouse Gas Protocol and to publicly disclose information about our emissions according to this standard.

The Greenhouse Gas Protocol was formulated with the participation of several NGOs and with scientific support. The goal was to standardize the emissions reporting of companies and organizations. According to recognized experts, limiting the pace of global warming will be facilitated if greenhouse gases are recorded and reported according to a uniform procedure. This makes it possible to formulate the targets for emission reduction, manage the reduction process, and compare companies with one another.

In line with the standard, we differentiate between three different categories of CO₂ emissions called scopes. Scope 1 comprises the emissions that are caused by our own power plants' generation of heat and energy. Scope 2 comprises all the emissions of energy carriers (electricity and district heating) that we procure from external suppliers and whose production and transportation cause greenhouse gas emissions. Finally, Scope 3 includes all the emissions that are generated before (upstream of) or after (downstream of) our production operations. For example, Scope 3 includes the CO₂ emissions that arise in the supply chain or as a result of our vehicles operating in customers' hands. It also includes the emissions that our employees generate on their way to and from the workplace.

The GHG Protocol specifies a total of 15 categories of Scope 3 emissions. We believe that 12 of these categories are relevant to our company, and we calculate them. The determination of Scope 3 emissions is based on comprehensive methodological considerations and complex calculations. Daimler is one of the leading companies that have analyzed the specifics of Scope 3 from the beginning and developed expertise in this area. The calculation methods that we have worked out, partly through a scientific partnership with ETH Zürich, have been widely accepted as standard methods in the automotive industry. By further developing our dataset and refining the approaches we use, we will continue to improve and standardize the Scope 3 methods in the automotive industry.

Most of our Scope 3 emissions (approximately 73 percent) are generated during the utilization phase of cars— in other words, during the production of fuel and the operating status of our products. About one fifth of our indirect Scope 3 emissions are due to our supply chain, which provides us with goods and services.

Cars

We currently determine the CO₂ emissions of our cars by using our worldwide car sales figures and the fleet's average CO₂ emissions figure. For this calculation, we assume that each car travels 15,000 kilometers per year. We also assume that each car is used for an average period of ten years. The average total mileage thus amounts to 150,000 km per car.

Vans, trucks and buses

So far we have only determined the Scope 3 emissions of our cars, basing our calculations on the sales figures, the average annual mileage, and the CO₂ emissions determined after the conclusion of a driving cycle. However, we have not determined the Scope 3 emissions of our vans and heavy-duty commercial vehicles. For trucks and buses there are currently no legally prescribed test cycles. Yet the heavy-duty commercial vehicles of all manufacturers account for about 25 percent of the CO₂ emissions generated by road traffic. The EU is aware of the need to revise the legislation in this area. As a result, the European Commission has developed a test cycle and the corresponding simulation program VECTO (Vehicle Energy Consumption Calculation Tool) in order to make it easier to compare the manufacturers' figures for the fuel consumption and CO₂ emissions of their trucks and buses. For example, the air resistance of every individual cab variant, as well as the rolling resistance of the tires on the road, are measured by independent testing organizations.

Accordingly, all vehicles that are produced in Europe from January 1, 2019 on must be fully certified by means of VECTO so that the truck and bus fleet values can be determined in addition to the car and van fleet values. In the first step, trucks and buses providing long-distance and regional transportation will be assigned an individualized and practice-oriented CO₂ value. This will be followed by other vehicle categories, such as vehicles used for urban transportation.

Daimler regards the introduction of VECTO and the new test cycle for heavy-duty commercial vehicles as an important step toward a sustainable transportation system, and it supports this holistic approach to CO₂ reduction.

Table: Scope 3 emissions worldwide for Mercedes-Benz cars and vans

Category	Cars
	CO₂ in million t
Procured goods and services	17.4 ¹⁾
Usage phase of our products	60.9 ²⁾
Recycling and waste disposal	1.0 ¹⁾

¹⁾ The data for "Procured goods and services" and "Recycling and waste disposal" come from the environmental certificates

²⁾ Driving emissions of cars: the calculation was based on the certified EU, China, and USA values

The totals for the categories reported on (cars) account for 95% of the Scope 3 CO₂ emissions. It is safe to assume that Scope 3 reporting will play an important role in the struggle to limit climate change in the future. It will create more transparency and trigger a competition among CO₂ emitters to develop the most effective way to limit the greenhouse gases that are damaging the climate. Daimler is well aware of its responsibilities in this regard. That's why we have not only set ambitious goals for reducing our CO₂ emissions but are also among the first industrial companies when it comes to CO₂ reporting.