

Reducing CO₂ Emissions

The Toyoda Gosei Group is reducing CO₂ emissions in the product stage, production stage, and over the entire lifecycle to achieve the targets set for FY2025.

Product Development Stage: Environmentally-Friendly Product Development Materials Design

In the product stage, we are making headway in providing parts for environmentally-friendly, next-generation vehicles and developing products with lighter weight for greater fuel efficiency and lower energy consumption with linkage in areas of materials technology, product design, and production engineering. Examples include the development

of high pressure hydrogen tanks for FCEVs and, after confirming strength and other quality aspects, aggressively switching materials (e.g., from metal or rubber to plastic) in instrument panel peripherals and other IE products and in FC parts such as hoses, reducing the number of components, integrating functions, and making lighter weight products.

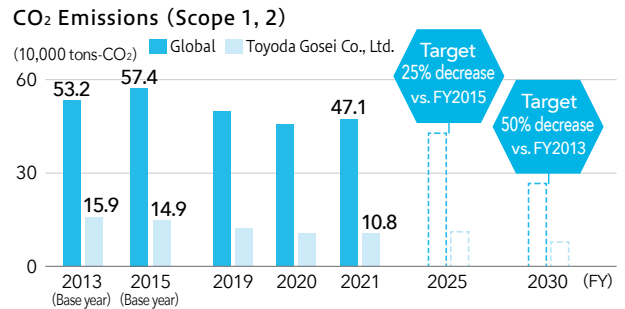
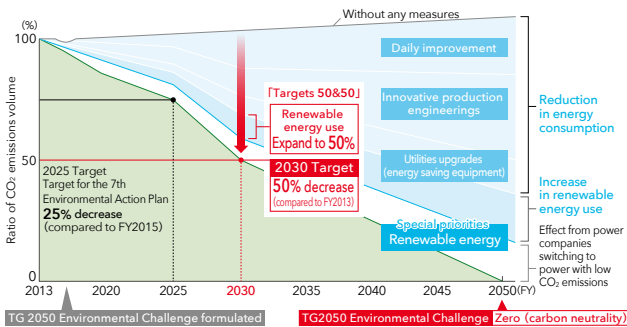
Production Stage: Development of New Production Methods, Reductions Through Daily Kaizen and Other Efforts Manufacturing

On our way to achieving zero plant CO₂ emissions under the TG 2050 Environmental Challenge, we have set 2030 milestones that we seek to achieve through daily *kaizen* at our plants, production engineering innovations, higher efficiency of utilities and expansion of renewable energy.

Distribution Stage: Improve Loading Efficiency

Design Manufacturing

In collaboration with logistics companies, we are reducing CO₂ by improving truck loads and more efficient logistics.

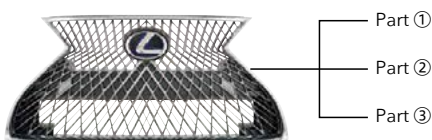


Examples

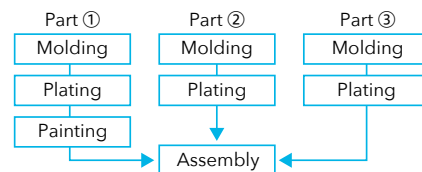
CO₂ Garden — Reducing CO₂ Through Visualization

CO₂ emissions are calculated for each product in terms of its component parts and processes, and CO₂ emissions graphs (CO₂ garden) are created. We have narrowed our focus in materials, processes, and facilities, leading to effective CO₂ reduction initiatives.

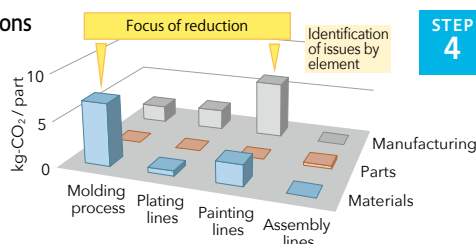
STEP 1 Disassemble Products to Part Units



STEP 2 Disassemble to Process Unit



STEP 3 Calculate CO₂ Emissions by Component Parts and for Each Process, Create CO₂ Garden



STEP 4 CO₂ Reduction Initiatives

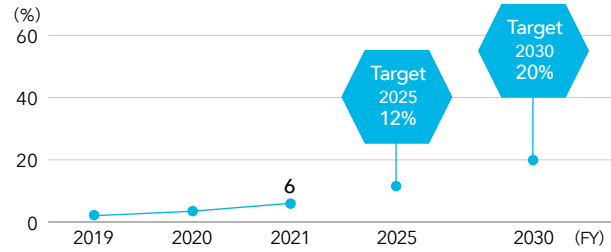
Materials: Thinner product walls, use of recycled materials
 Manufacturing: Low-pressure molding, shorter cycle times

Environment

Renewable Energy

We are expanding renewable energy, including the installation of clean solar and wind energy generation equipment and the purchase of green power. This exceeded 5% of our total global electricity consumption by the end of FY2021. Our next challenge is to raise clean energy levels to at least 20% globally by FY2030.

Percentage of Renewable Energy [Global]

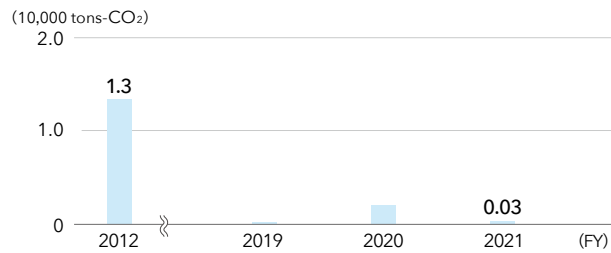


Reductions in 6 Greenhouse Gases^{*1}

Of the six greenhouse gases, Toyoda Gosei Co., Ltd. uses three (HFC, PFC, SF₆) and is conducting activities to reduce all of them. By FY2015 we had completed a switch to alternative gases with a low environmental impact for the shield gas used in the production of steering wheel cores and other gases. We will continue these reduction activities in the future.

*1 Hydrofluorocarbon (HFC), perfluorocarbon (PFC), sulfur hexafluoride (SF₆), methane (CH₄), nitrous oxide (N₂O), nitrogen trifluoride (NF₃)

Greenhouse Gas (6 gases) Emissions (CO₂ equivalents) [Toyoda Gosei Co., Ltd.]



Environmental Impact in the Value Chain

From the perspective of preserving the earth, we have surveyed and disclosed not only GHG emissions (Scope 1, Scope 2) in our business activities but also emissions in our entire value chain including excavation of raw materials and product use and disposal (Scope 3). Our Carbon Neutrality Project was inaugurated in FY2021 to improve the accuracy of Scope 3. Together with this, we have established milestones and are making efforts to reduce CO₂ through lighter weight and recycling of raw materials for which there are high emissions.

CO₂ Emissions by Scope Level (FY2021 results) [Global]

Scope / Category		Emissions (10,000 tons)
Scope 1		10.1
Scope 2		37.0
Scope 3	1. Purchased goods and services	138.1
	2. Capital goods	14.5
	3. Fuel- and energy-related activities (not included in scope 1 or scope 2)	5.0
	4. Upstream transportation and distribution	8.2
	5. Waste generated in operations	3.8
	6. Business travel	0.4
	7. Employee commuting	2.3
	8. Upstream leased assets	0.1
		172.4

Minute amounts for other than the above, or not applicable