

Taking on the challenge of carbon neutrality and a circular economy with the concerted strength of the Toyoda Gosei Group

Global warming and the problems of resource depletion and waste that result from mass production and disposal have become issues common to the entire world. Under the slogan of “A Greener, Richer World for Our children,” Toyoda Gosei is accelerating Group-wide initiatives to achieve a carbon-neutral and circular economy as soon as possible, fully leveraging our strengths in rubber and plastic polymer technology in both production and products.

Contributing to Environmental Preservation Through All Our Business Activities

Basic Philosophy

The Toyoda Gosei Group formulated its 1st Environmental Action Plan in 1993 based on its environmental policy, and since that time has been actively confronting environmental issues. In February 2016, we announced our TG 2050 Environmental Challenge, and have set targets to be reached by 2030 as milestones. We have also formulated a 5-year action plan in which activity items and targets are set, and are carrying out activities to pro-

tect the environment.

Globally, we have set integrated environmental functions in Japan and the regions of the Americas, China, Southeast Asia, and India. The Group is also making efforts as a whole with area control in five global regions, the above four plus Europe/South Africa. These initiatives are made in conjunction with government agencies, customers and suppliers.

Environmental Policy

1. Environmentally-Friendly Corporate Activities

We are keenly aware that all stages of our business relate deeply to the environment, from development, production, and sales activities to end-of-life disposal. The Toyoda Gosei Group, including all internal divisions, domestic and international affiliates, and suppliers, conducts all business activities with concern for the environment in cooperation and coordination with customers, government agencies, and others.

2. Good Corporate Citizenship

As a good corporate citizen, we participate in, support, and cooperate with environmental activities by many groups while also working on environmental activities in the community and broader society. We also provide education for all employees to support them in becoming involved in environmental activities as members of the community and society, and support social contributions and volunteerism.

3. While Spreading Information on These Activities, We Listen to the Opinions of People at All Levels of Society and Work to Improve Our Activities Wherever We Can.

TG 2050 Environmental Challenge

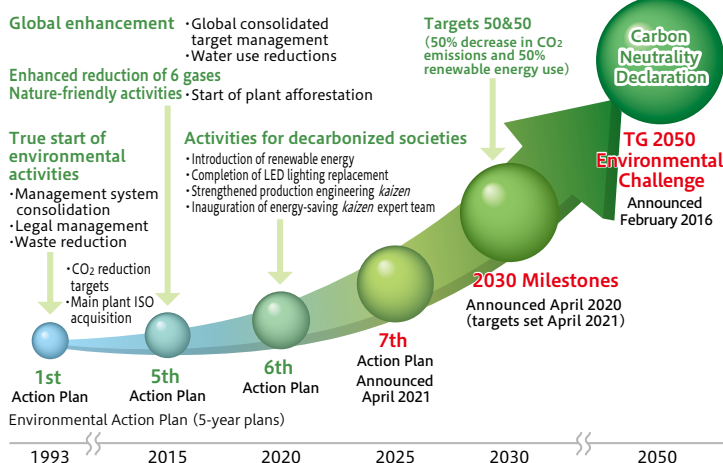
The Toyoda Gosei Group specializes in the field of high polymers—rubber and plastics. Our symbol is the benzene ring, a hexagonal hydrocarbon structure that is

the starting point for polymers. Borrowing from the six sides of the benzene ring, we have set six challenges for our environmental preservation activities with a long-

TG 2050 Environmental Challenge (Six Challenges)



Medium- and Long-Term Scenario for Achieving Carbon Neutrality



term view to the year 2050. As a roadmap to achieve that, we have set targets for 2030 (Targets 50 & 50) as milestones and formulated a five-year Environmental

Action Plan to guide our initiatives.

Environmental action plan
<https://www.toyoda-gosei.com/csr/environmental/report2/>

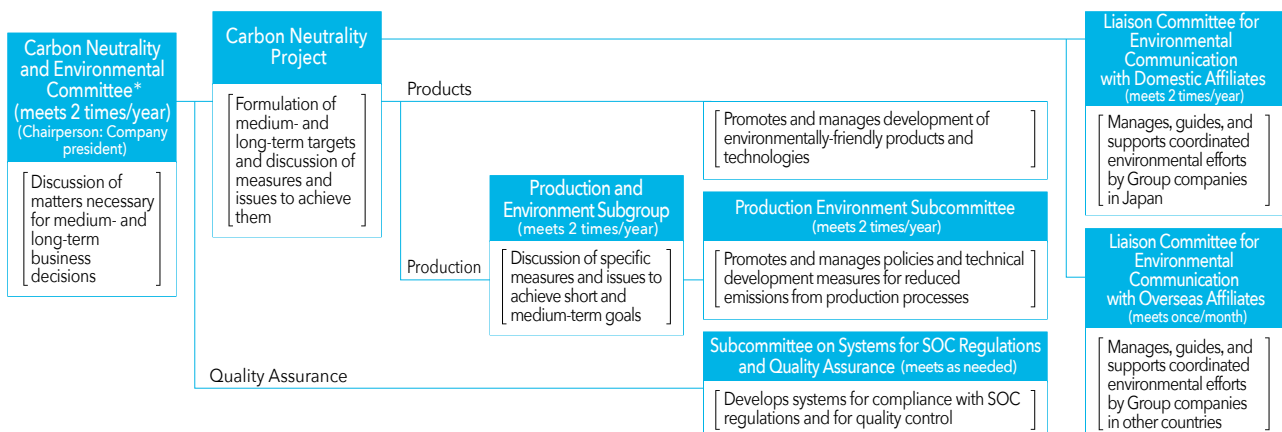
Environmental Organization

Our medium- and long-term policy and key action items are discussed and decided in a Carbon Neutrality and Environmental Committee chaired by the company president. The Committee consists of three subcommittees in the areas of products, production, and quality. In the area of production, a production and environment subgroup has been established to strengthen environmental activities over the entire manufacturing process. The above subcommittees are further broken down into working groups that promote and manage areas such as reductions in

energy use, waste products and preservation of the environment. In this way, environmental preservation and management activities are conducted from an expert perspective. Liaison meetings have also been established to share information with domestic and international Group companies.

A carbon neutrality project was started in FY2021 to accelerate initiatives over the product lifecycle. The project is headed by the president and with outside directors as advisors and the managers of related divisions as members.

Environmental Organizational Structure



* The position of the Carbon Neutrality and Environmental Committee within the organization can be seen in our Corporate Governance Organization Chart (see p. 69). Deployment from the Carbon Neutrality and Environmental Committee, the Production and Environment Subgroup, and the respective subcommittees to plants and other operations is done with the establishment of expert committees in accordance with the ISO 14001 system at each plant.

Carbon Neutrality and Circular Economy Strategy

Materials Design Manufacturing Recovery/recycling

To help us achieve the TG 2050 Environmental Challenge, we have developed a carbon neutrality and circular economy strategy for the entire life cycle of our products. Our goal is to contribute to a carbon-neutral, circular economy by taking concrete actions in the four specific areas of sustainable materials (Materials), sustainable design (Design), a zero emission challenge (Manufacturing), and resource circulation (Recovery/recycling).

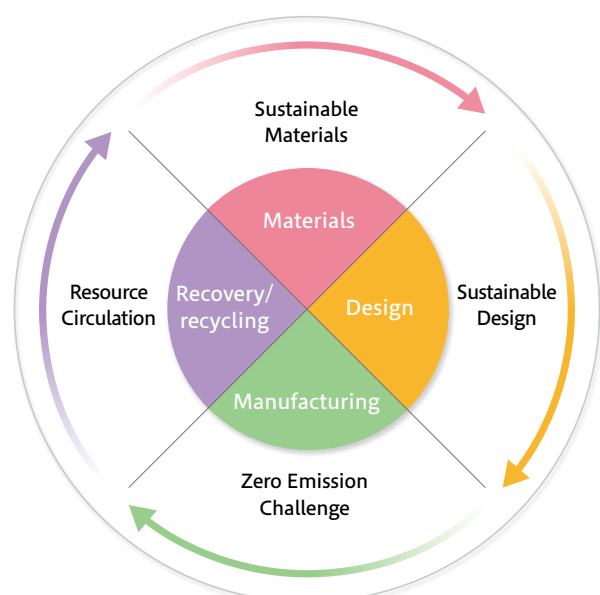
Materials We will procure recycled materials and expand the use of biomass materials with a stable supply in mind.

Design We will seek designs for lightweight products, easy disassembly, and compactness.

Manufacturing In addition to daily improvements, we will continue to introduce innovative processes, including line downsizing and heat energy reduction, and explore the use of hydrogen.

Recovery/recycling We will systematically minimize the waste in our plants, while at the same time building systems to recover parts from the market.

Carbon Neutrality and Circular Economy Strategy



Building Decarbonized Societies

In addition to lighter weight products that lead to improved vehicle fuel efficiency, we are reducing CO₂ emissions through improved productivity and more efficient distribution.

Basic Philosophy

In addition to achieving the goal set under the Paris Agreement of keeping the rise in the global average temperature to below 2°C compared with pre-Industrial Revolution levels, we must reduce greenhouse gas emissions to virtually zero by the end of this century. With the aim of zero CO₂ emissions as presented in the TG 2050 Environmental Challenge, we are utilizing materials and product development skills with an eye toward next-generation vehicles in addition to the manufacturing skills we have cultivated over time. Plans for execution are included in our 7th Environmental Action Plan with activity targets for FY2025. We have also set the goal of cutting CO₂ emissions 50% (vs FY2013 levels) by 2030,

the midpoint for the TG 2050 Environmental Challenge, and implementing stepwise, specific CO₂ reductions.

Support for TCFD Recommendations

The Toyota Gosei Group endorsed the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) in May 2019, and has analyzed risk/opportunity scenarios and response scenarios based on guidelines. Together with an acceleration of initiatives, including the TG 2050 Environmental Challenge and review of our 2030 milestones, we are actively disclosing relevant information.

Please visit our website to see the results of our scenario analysis.

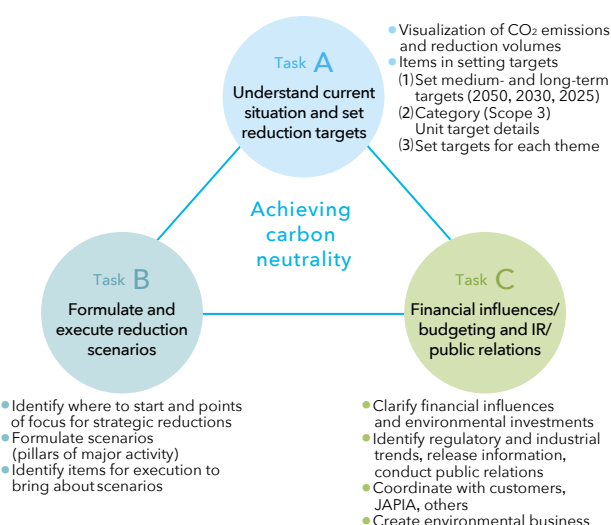
<https://www.toyoda-gosei.com/csr/environmental/report11/>

Carbon Neutrality Project

We have been reducing CO₂ emissions throughout the entire lifecycle of our products, from material and component procurement and product development to the production, use and disposal stages. In June 2021, we launched a company-wide Carbon Neutrality Project to accelerate these activities.

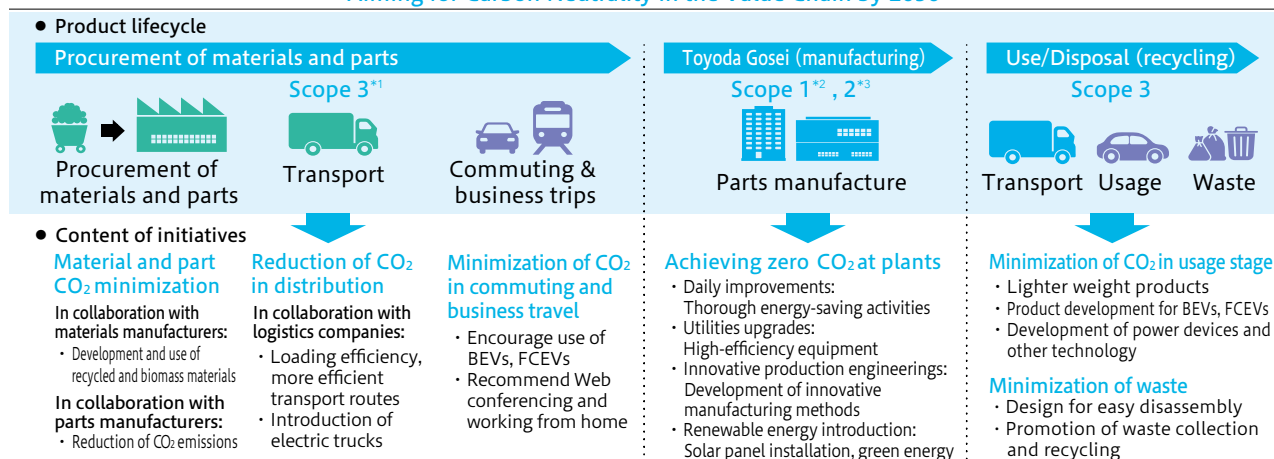
Structure The project is headed by the President and has Chiefs of the Corporate Strategy Headquarters, Research and Development Headquarters, and Automotive Business Management Headquarters serving as project leaders. The core members are division general managers and above. This structure allows for quick decisions and actions in management issues.

Activities Each task is carried out with the relevant division general manager as leader.



Reducing CO₂ Emissions in the Value Chain

Aiming for Carbon Neutrality in the Value Chain by 2050



^{*1} Greenhouse gas emissions in the company's supply chain that are not directly related to the company's activities (raw materials manufacture, transport, business travel, commuting, etc.)

^{*2} Direct greenhouse gas emissions by the company itself (fossil fuels, natural gas, etc.) ^{*3} Indirect greenhouse gas emissions (purchase of electricity, etc.)

Reducing CO₂ Emissions

The Toyota 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.

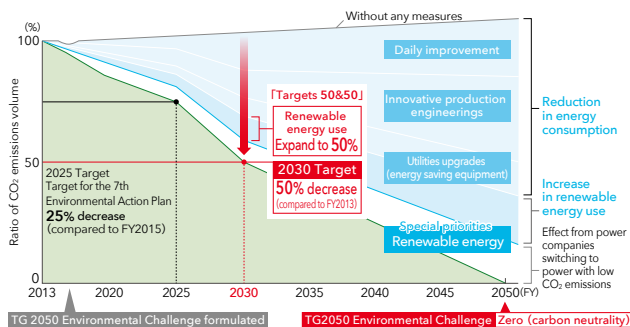
Production Stage: Development of New Production Methods, Reductions Through Daily *Kaizen* and Other Efforts Manufacturing

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.

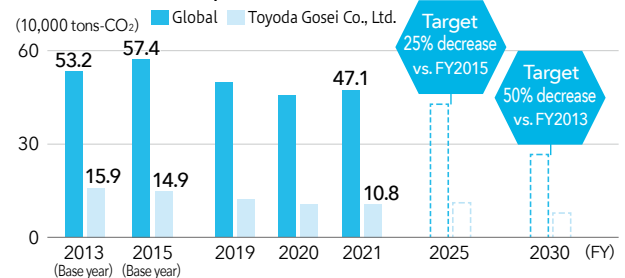
Distribution Stage: Improve Loading Efficiency

Design Manufacturing

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



CO₂ Emissions (Scope 1, 2)

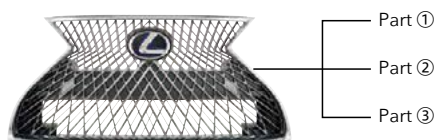


Examples

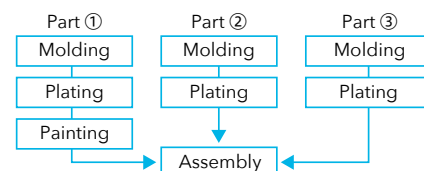
CO₂ Garden — Reducing CO₂ Through Visualization

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.

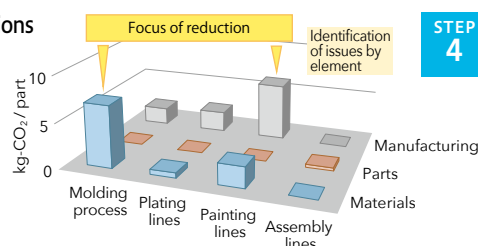
STEP 1 Disassemble Products to Part Units



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

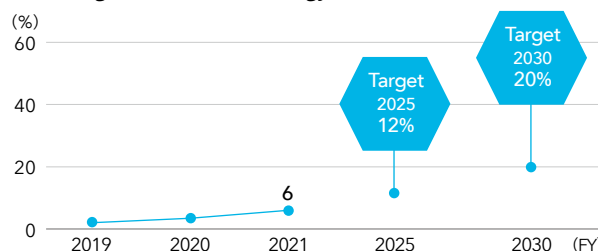
Materials: Thinner product walls, use of recycled materials
 Manufacturing: Low-pressure molding, shorter cycle times

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]

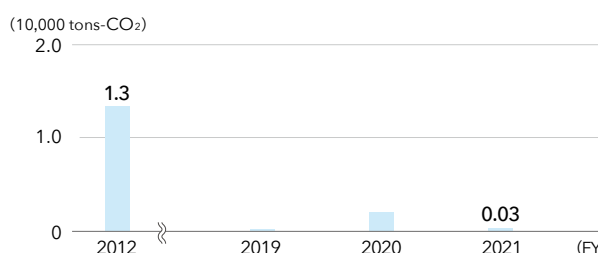


Reductions in 6 Greenhouse Gases^{*1}

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