Environment

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 protect 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.

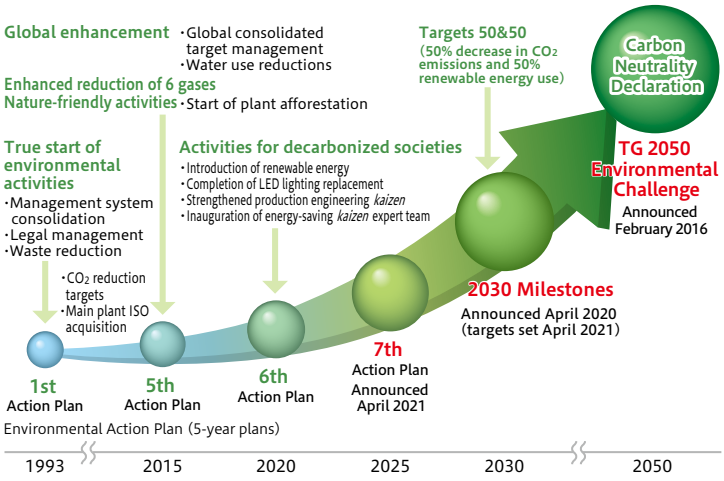
3. While Spreading Information on These Activities, We Listen to the Opinions of People at All Levels of Society and Work to Improve Our Activities Wherever We Can.

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.

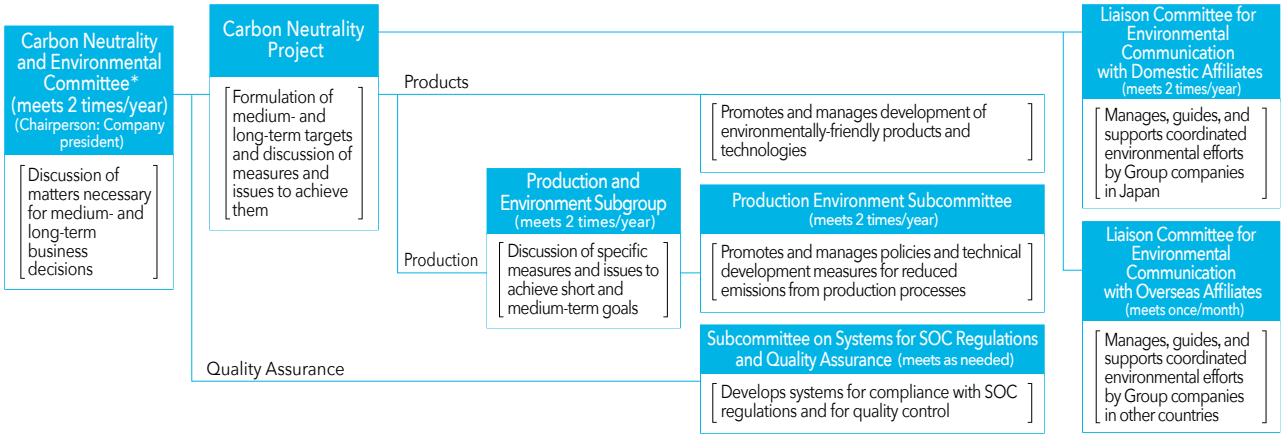
Environmental action plan
https://www.toyoda-gosei.com/csr/environmental/report2/

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).

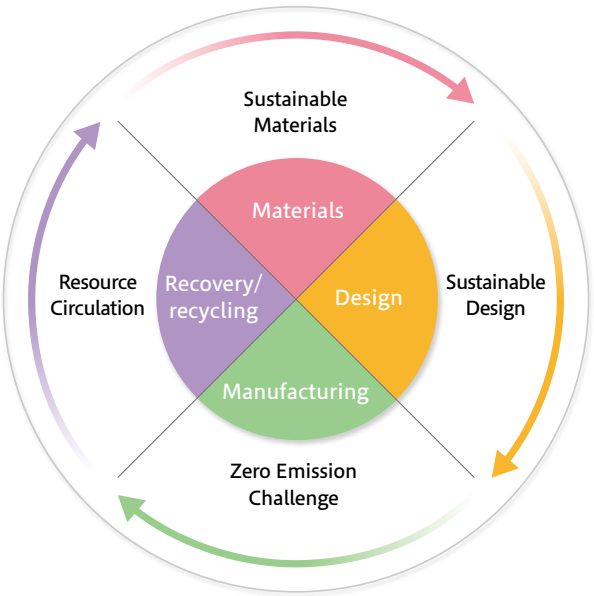
Materials We will procure recycled materials and expand the use of biomass materials with a stable supply in mind.

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 CO_2 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 CO_2 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 CO_2 emissions 50% (vs FY2013 levels) by 2030, the midpoint for the TG 2050 Environmental Challenge, and implementing stepwise, specific CO_2 reductions.

■ Support for TCFD Recommendations

The Toyoda 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.

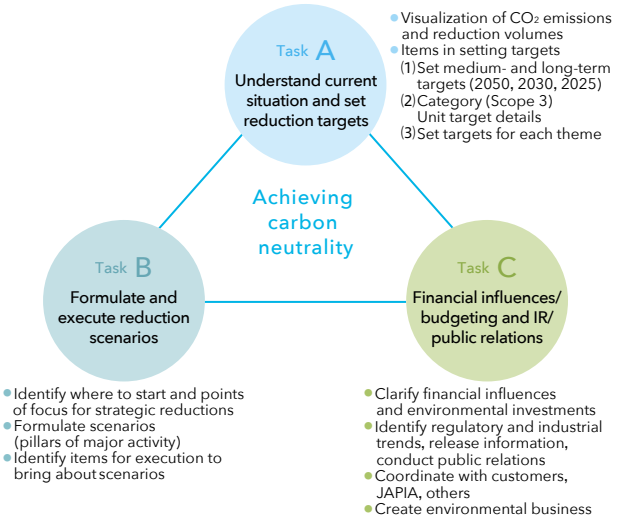
Please visit our website to see the results of our scenario analysis.
https://www.toyoda-gosei.com/csr/ environmental/report11/

Carbon Neutrality Project

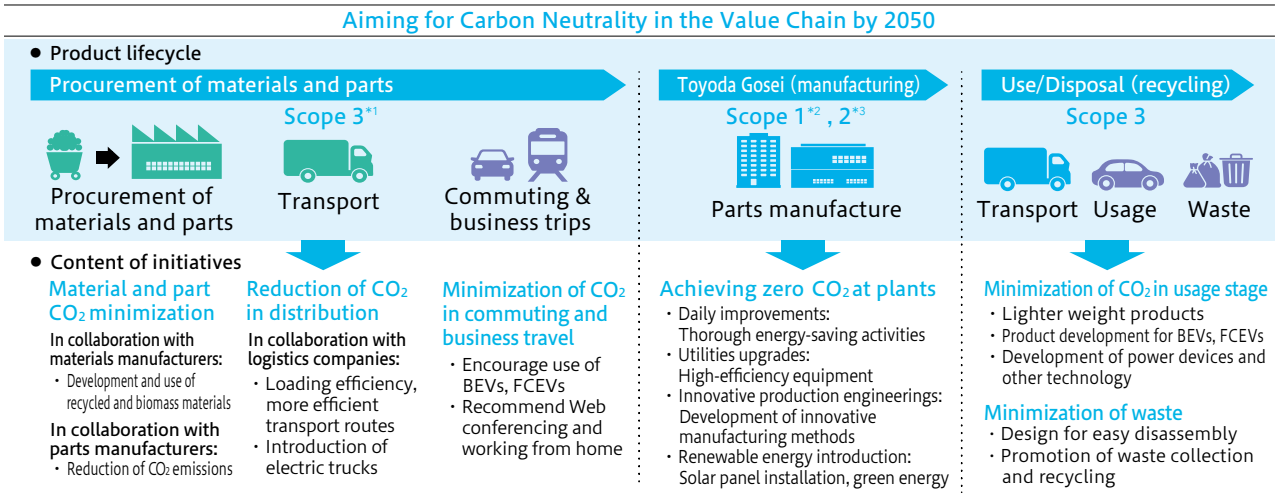
We have been reducing CO_2 emissions throughout the entire lifecycle of our products, from material and component procurement and product development to the production, use and disposal stages. In June 2021, we launched a company-wide Carbon Neutrality Project to accelerate these activities.

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 CO_2 Emissions in the Value Chain



*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 CO_2 Emissions

The Toyoda Gosei Group is reducing CO_2 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

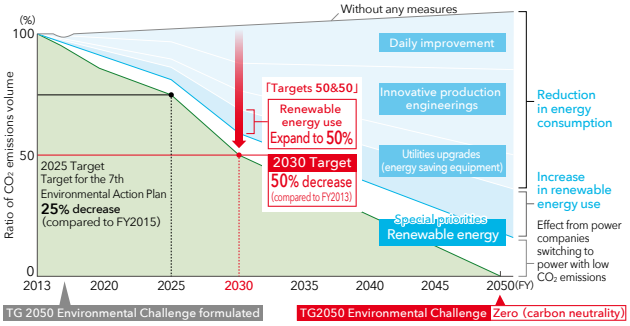
In the product stage, we are making headway in providing parts for environmentally-friendly, next-generation vehicles and developing products with lighter weight for greater fuel efficiency and lower energy consumption with linkage in areas of materials technology, product design, and production engineering.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

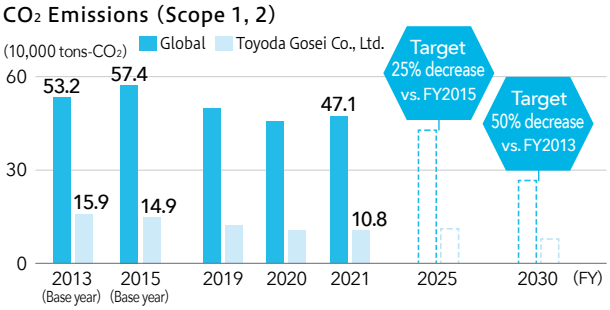
Production Stage: Development of New Production Methods, Reductions Through Daily *Kaizen* and Other Efforts Manufacturing

On our way to achieving zero plant CO_2 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 CO_2 by improving truck loads and more efficient logistics.



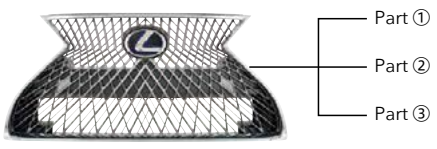


Examples

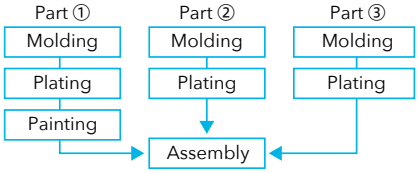
CO_2 Garden — Reducing CO_2 Through Visualization

CO_2 emissions are calculated for each product in terms of its component parts and processes, and CO_2 emissions graphs (CO_2 garden) are created. We have narrowed our focus in materials, processes, and facilities, leading to effective CO_2 reduction initiatives.

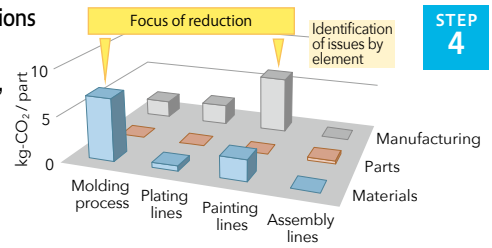
STEP 1 Disassemble Products to Part Units



STEP 2 Disassemble to Process Unit



STEP 3 Calculate CO_2 Emissions by Component Parts and for Each Process, Create CO_2 Garden



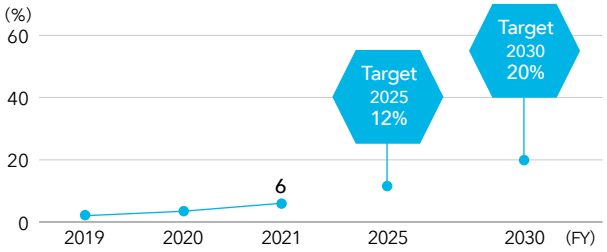
STEP 4 CO_2 Reduction Initiatives

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

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]

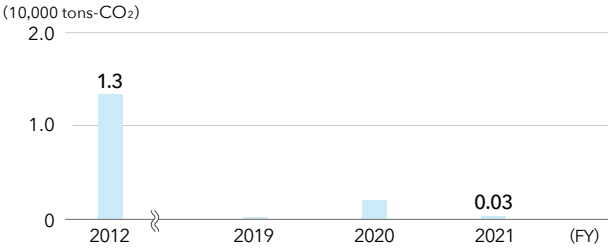


Reductions in 6 Greenhouse Gases*1

Of the six greenhouse gases, Toyoda Gosei Co., Ltd. uses three (HFC, PFC, SF_6) 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 (SF_6), methane (CH_4), nitrous oxide (N_2O), nitrogen trifluoride (NF_3)

Greenhouse Gas (6 gases) Emissions (CO_2 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 CO_2 through lighter weight and recycling of raw materials for which there are high emissions.

CO_2 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	172.4
	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	

Minute amounts for other than the above, or not applicable

Building Circular Societies

Toyoda Gosei uses resources effectively and contributes to circular societies by reducing waste volumes*2 and water usage and designing products that are easily recyclable.

*2 We are currently attempting to reduce waste volumes for the minimization of industrial waste as set forth in the TG 2050 Environmental Challenge.

Basic Philosophy

As a polymer manufacturer specializing in rubber and plastics, we undertake to do our part for circular societies through the effective use of limited resources.

First, we take measures to prevent defects and improve yields centered on manufacturing floors. In addition, we are seeking ways to limit emissions and recycle materials with the involvement of our material and production engineering divisions, where all of our work starts, and expand resource circulation.

Another major problem relates to water, with water shortages and flooding in many parts of the world caused by climate change. We are therefore identifying risks in all countries and regions of the world where we have operations, and working to mitigate these risks by decreasing water consumption and recycling water, as well as returning cleaner wastewater to surrounding communities.

Risks and Opportunities Associated with Resource Circulation

The risks and opportunities associated with resource recycling are an important management issue, and we are addressing them company-wide as one of our key action items.

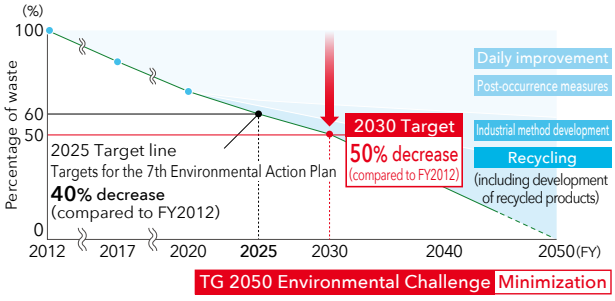
Impact items	Risks	Opportunities	Response
Depletion of resources (shortage)	・Decreased revenue, production disruptions from difficulty purchasing raw materials and soaring prices	・Higher revenue from recycling technology, reduced material usage ・Higher corporate value from development of the above technologies	・Product development for lighter weight ・Development of raw material recycling technology ・Greater use of plant-derived biomaterials and recycled materials
Water risks (volume/ quality)	・Production disruptions from difficulty ensuring water needed in production ・Poorer product quality from water quality deterioration ・Production disruptions from water damage	・Higher revenue from reuse of water, decreased usage ・Higher corporate value from development of the above technologies	・Development of water reuse technologies ・Greater use of rainwater ・Review of production networks, review of electric facility installation sites

Waste Reduction

■ Establishment of 2030 Milestones

As we move toward the circular societies envisioned in our TG 2050 Environmental Challenge, we aim to minimize emissions volumes and have set targets as 2030 milestones for the effective use of resources, including measures to limit emissions and control their source, recycling of rubber and plastic scrap, and reducing waste through careful and thorough separation.

Scenario for Minimizing Amount of Waste (reduction image)
[Toyoda Gosei Co., Ltd.]

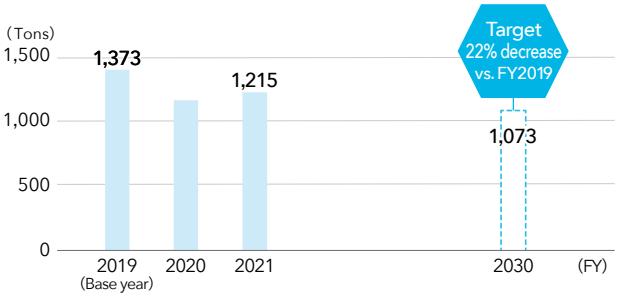


■ Satisfying the Plastic Resource Circulation Act

The Plastic Resource Circulation Act went into effect in April 2022, and with a view to our contribution to carbon neutrality, we are committed to designing and manufacturing environmentally friendly 3R + Renewable products.

We have also set new 2030 targets for industrial plastic waste volume and are working for plastic resource circulation.

Plastic Industrial Waste Volume [Toyoda Gosei Co., Ltd.]



Development of Product Recycling Technology Materials Design Manufacturing Recovery/recycling

We develop and design easily recyclable products and materials with thought to the entire lifecycle of automobiles. We are also developing recycling technology for waste material.

Development of Technology for End-of-Life Vehicle Parts Recycling

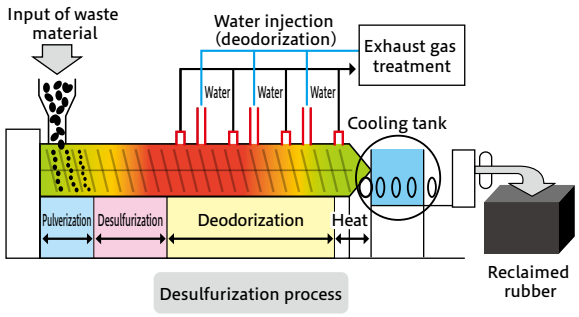
Key items	Measures implemented
New recycling	・Composite material separation technology ・New recycling technology (high quality material recycling)
Use of recycled materials in vehicles	・End-of-life vehicle recycling technology ・Development of applications for recycled materials
Product design for easy recycling	・Product design for easy disassembly ・Materials and composition changes for easy recycling

Examples

Full-Scale Operation of Rubber Recycling Processes to Achieve FY2030 Targets Recovery/recycling

We aim to reduce waste materials by 50% (compared with FY2012 levels) by 2030 on our way to achieving carbon neutrality in 2050. In April 2021, recycling processes for four types of weatherstrips were brought together in a dedicated building. By restoring waste rubber to a raw material state with our original technology and using it in new products, we expect to reduce waste by about 600 tons. This should also have an effect in reducing CO_2 emitted during raw material transport and the incineration of waste. In addition, we hope to contribute to reducing the environmental impacts of the industry overall, by using this recycled rubber not only inhouse but also selling it to other companies.

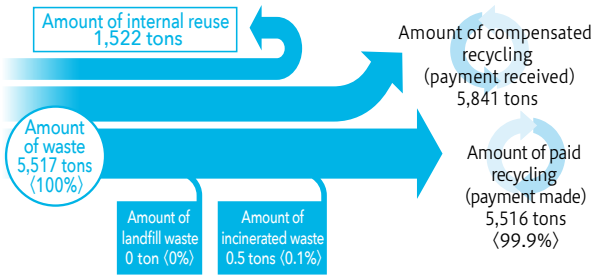
Weatherstrip Recycling Process



Reduction of Waste Materials in the Production Stage Manufacturing Recovery/recycling

To reduce waste in the production stage, we are combating waste at its source and recycling. To minimize waste in the TG 2050 Environmental Challenge, we launched a waste reduction project in 2018 by our plants and production engineering, materials technology, and product design divisions, in which we combat waste at its source and recycle. We also conduct *mottainai* inspections to identify items for reduction with *genchi-genbutsu* (go and see) and other reduction activities at each business location. Good examples of reduction are shared among domestic and international Group companies as the entire Group tries to reduce waste.

Amounts of Waste Generated and Disposed of (results for FY2021) [Toyoda Gosei Co., Ltd.]

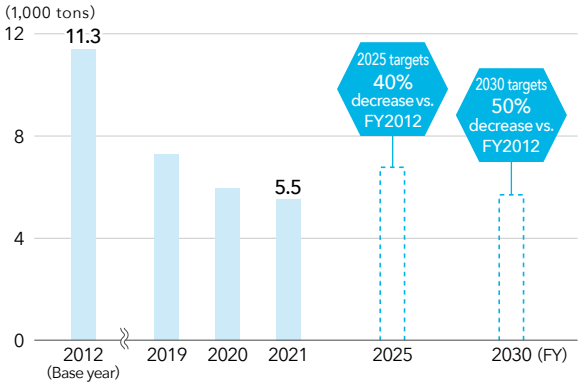


Figures in parentheses are the proportion of the discarded materials volume

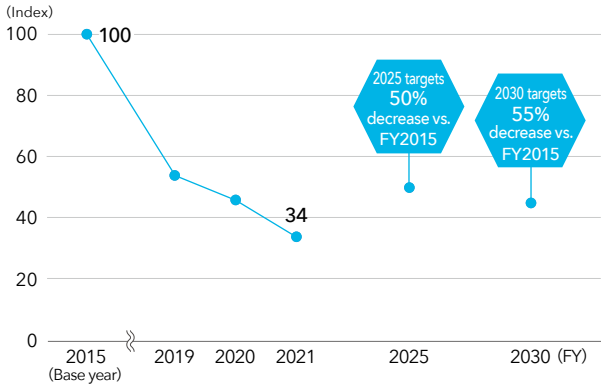
Reduction of Packaging in the Distribution Stage Recovery/recycling

The packing material used in product transport is being reduced to prevent products from being soiled by increasing the number of times reusable containers are used in the field and maintaining cleanliness. We are also reducing packing material by putting lids on reusable containers and other changes, considering the balance between maintaining product quality and reducing the use of packing materials.

Amount of Waste [Toyoda Gosei Co., Ltd.]



Waste Volume per Sales Unit (index)[*1] [Overseas Group companies]



*1 A figure obtained taking the base year as 100

Reducing Water Risks

Manufacturing

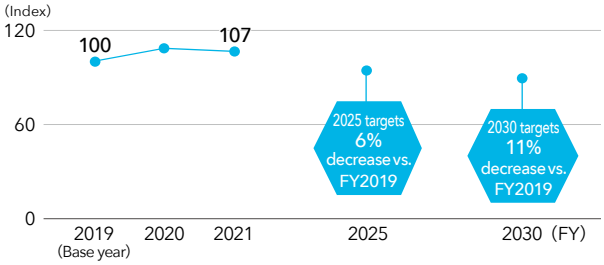
We have set and are working toward 2030 milestones to achieve the targets in the TG 2050 Environmental Challenge. For this we are assessing risks in both water usage and water quality in Japan and international locations, and making improvements at high-risk locations. Even in places where risks are low, we are trying to reduce water intake amounts for the effective use of resources.

In FY2021, we cut water use through improvements to reduce leakage and by promoting recycling. We are also planning upgrades to wastewater treatment facilities for cleaner waste water.

2030 Reducing Water Risks Milestone [Global]

	Item	2030 target
High risk area	Water quality	Measures completed at four locations
	Water intake	Measures completed at seven locations
Low risk area	Water intake per sales unit	11% decrease vs. FY2019

Water Intake per Sales Unit (index)[*2] [Toyoda Gosei Co., Ltd.]



*2 A figure obtained taking the base year as 100

Re-S Eco-Brand

Recovery/recycling

As one part of our efforts to reduce waste, we have expanded to products that use remnants generated in the production of automotive parts such as airbags and steering wheels, under the Re-S brand.

Our Re-S brand is widely marketed to the general public, including consumers, and is being promoted through regular pop-up stores at nearby commercial facilities and through our own online store.

In addition, we are actively collaborating with companies in different industries, which we hope will lead to the accumulation of B to C business know-how.

In FY2021, we promoted and launched a project for collaborative products with Doala, the mascot of the Chunichi Dragons professional baseball team, Yamanami Kobo, a facility for people with disabilities, and students of Kinjo Gakuin University.

"Re-S" was coined from the prefix "re-," as in "reborn" and "recycle," that is the start of environmentally-friendly activities, and also includes the meaning of sustainability (S).
https://res00.base.shop/

Re-S online shop

Representative product

Airbags & seatbelts

Collaborative product with Kinjo Gakuin University