

# Environment <E>

We contribute to preservation of the earth's environment through all of our business activities to leave a greener, richer world for the future and our children.



**Hiroshi Yasuda** Director, Corporate Officer, Chief of Environment Division, Chief of Production Headquarters, Chief of Safety & Health Promotion Division

We obtain many resources from the earth—water, food and clothing as well as raw materials such as rubber, resin, and metal. At the same time, we inflict damage on the earth through the emission of greenhouse gases and depletion of resources as a result of overuse in our daily lives and business activities.

Based on the TG 2050 Environmental Challenge, our long-term environmental vision, we formulate action plans every five years to promote environmental protection. These plans have been highly regarded by external organizations, including in corporate rankings by newspapers. To conduct environmental management that meets the expectations of society, we disclose related information in agreement with the recent recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). Going forward, we will continue our efforts to improve corporate culture and human resource development while striving to further strengthen sustainable environmental protection 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, which lays out our long-term goals, and formulated our 6th Environmental Action Plan, which establishes our action items and goals for the five years until 2020. These documents will guide our environmental

protection activities moving forward.

To carry out environmental management that meets the expectations of society, we have established environmental operations in the Americas, China, and Asia, and have put in place a global system for area management in these four global regions including Japan. The entire Toyoda Gosei Group will move ahead steadily with a view to 2030, the midpoint of our Environmental Challenge.

## 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 departments, domestic and international affiliates, and suppliers, conducts all business activities with concern for the environment in cooperation and coordination with customers, government authorities, 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 —A Greener, Richer World for Our Children

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, the TG 2050 Environmental Challenge sets six challenges to strengthen our environmental efforts with a long-term view to the year 2050.

### Support for TCFD recommendations

In May 2019, the Toyoda Gosei Group endorsed the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and is actively disclosing relevant information together with measures to achieve a decarbonized society, as set forth in the TG 2050 Environmental Challenge (details are posted on our website). In April 2020, we announced our CO<sub>2</sub> emission targets for 2030 and are accelerating our efforts.





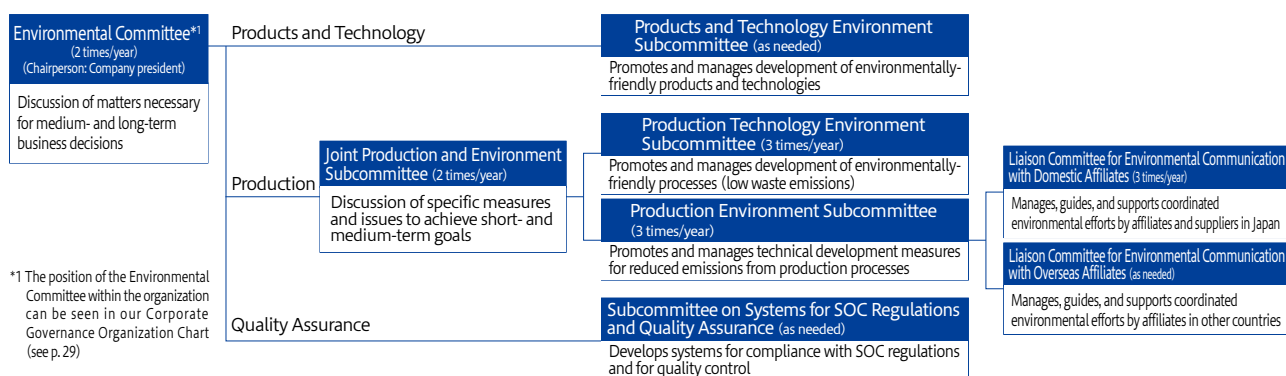
## Environmental organization

Our medium- and long-term policy and key action items are discussed and decided in an Environmental Committee chaired by the company president. The Environmental Committee consists of four subcommittees in the areas of products, production, and quality. The subcommittees are further broken down into working groups that promote and manage areas such as reductions in energy use, waste products, and volatile organic compound (VOC) emissions, and preservation of the

environment. In this way, environmental preservation and management activities are conducted from an expert perspective.

Liaison committees have also been established to share information with related companies in Japan and abroad. Since 2019 we have been strengthening coordination between production technology and plant floor manufacturing (newly established Joint Production and Environment Subcommittee) to promote energy-saving activities.

### Environmental organizational structure



Deployment from the Environmental Committee and subcommittees to plants and other operations is done with the establishment of expert committees in accordance with the ISO 14001 system at each plant.

## Risk and opportunity associated with climate change and resource depletion

The risks and opportunities associated with climate change and resource depletion are recognized as an important management issue. We are working to strengthen our responses to the overall financial and social risks from the effects on economic and production activities of more drastic abnormal weather, changing precipitation patterns, droughts and floods, from a global perspective based on laws, regulations and trends.

	Risk	Opportunity
<b>Climate change</b>	Cost increases from carbon tax and soaring energy prices	Development of lighter weight, next-generation automotive parts, cost reductions from efficient energy use
<b>Resource depletion</b>	Effects of water shortages and floods on production activities Cost increases from difficulty in procuring materials, soaring material prices	Cost reductions from re-use and decreased use of water Cost reductions from recycling technology, use of fewer materials
<b>Management (regulatory compliance)</b>	Loss of trust in the company due to environmental problems, including legal violations, and insufficient efforts to protect the environment	Raise brand strength by enhancing environmental activities

## Resource utilization and environmental emissions in business activities

To lessen the amount of energy, material and other resource inputs, and maximum product output, we are utilizing our skills in product development, process development and workplace

kaizen in efforts to improve through business activities.

The input resources we use include environmentally friendly materials and clean energy.

### INPUT

<b>Total material input</b> 45,974t	Rubber (rubber sheet) 17,820t
Plastic 28,154t	Excluding purchased parts, metal and liquid
<b>Total energy input</b> 2,571,000Gj*2	Heavy oil 12,000Gj
Purchased electricity 1,240,000Gj	Kerosene 0Gj
Renewable energy 2.5Gj	LNG 126,000Gj
City gas 1,190,000Gj	Gasoline 1,000Gj
LPG 2,000Gj	
<b>Water resource input</b> 1,260,000m <sup>3</sup>	Clean water 214,000m <sup>3</sup>
Industrial water 696,000m <sup>3</sup>	Underground water 350,000m <sup>3</sup>
<b>PRTR*3 substances usage</b> 593t	

Business activities →

### OUTPUT

<b>Products</b>	
<b>Emitted into the atmosphere</b>	
NOx*5	108t
CO <sub>2</sub> 106,000t-CO <sub>2</sub>	Dust 0t
6 gases 200t-CO <sub>2</sub>	Volume of substances subject to PRTR 91t
SOx*4 0t	VOC*6 emissions 270t
<b>Waste discharge</b>	
General waste	7t
Landfill waste 0t	For-profit disposal by sale 5,893t
Incinerated waste 1t	Volume of substances subject to PRTR 59t
Industrial waste 7,203t	
<b>Wastewater</b>	
Nitrogen emissions*7	8.3t
Total wastewater 930,000m <sup>3</sup>	Phosphorus emissions*7 0.5t
Volume of substances subject to PRTR 0.1t	COD emissions*7 4.1t

\*2 Gigajoule (1,000,000,000 joules)

\*3 Pollutant Release and Transfer Register

\*4 Sulfur Oxide

\*5 Nitrogen Oxide

\*6 Volatile Organic Compounds

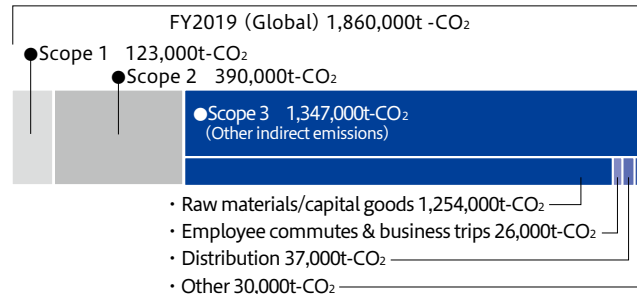
\*7 Range of target: 4 plants of Haruhi, Inazawa, Heiwacho and Seto, Kitajima Technical Center, Miwa Technical Center and Sun-Court Inoguchi

### Environmental impact in the value chain

From the perspective of preserving the earth, we have surveyed and disclosed not only GHG emissions (Scope 1\*<sup>1</sup>, Scope 2\*<sup>2</sup>) in our business activities but also emissions in our entire value chain including excavation of raw materials and product use and disposal (Scope 3\*<sup>3</sup>). To increase precision for a more accurate picture, we reviewed the calculation method and data collection for Scope 3.

\*1 Greenhouse gas emissions emitted directly by the company itself (natural gas and other fossil fuels, etc.)  
 \*2 Indirectly emitted greenhouse gases (electricity, etc.)  
 \*3 Greenhouse gases emitted in the supply chain that are indirectly emitted by the company (manufacturing, transport, business travel, commuting, etc.)

CO<sub>2</sub> emissions by scope level



## Building a decarbonized society

In addition to lighter weight products that lead to improved vehicle fuel efficiency, we are reducing CO<sub>2</sub> 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 believe that we must reduce greenhouse gas emissions to virtually zero by the end of this century. With the aim of minimizing CO<sub>2</sub> emissions as presented in the TG 2050 Environmental Challenge, we are utilizing new production techniques 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 6th Environmental Action Plan with activity targets for FY2020. We have also set the goal of cutting CO<sub>2</sub> emissions 43% by FY2030, the midpoint for the TG 2050 Environmental Challenge, and implementing stepwise, specific CO<sub>2</sub> reductions. To reduce CO<sub>2</sub> emissions over the entire product lifecycle, we are making efforts to increase efficiency in distribution and other areas.

### Reducing CO<sub>2</sub> emissions

The Toyoda Gosei Group is reducing CO<sub>2</sub> emissions (per unit sales) in the product stage, production stage, and over the entire lifecycle to achieve the targets set for FY2020.

● **Product development stage: Environmentally-friendly product development** .....

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 across the areas of materials technology, product design, and production

technology. Examples include aggressive efforts to switch materials (e.g., from metal or rubber to plastic) in instrument panel peripherals and other interior products and in functional parts such as hoses, reduce the number of components, integrate functions, and use thinner material while ensuring strength.

● **Production stage: Reductions with development of new processes, daily *kaizen*** .....

In the production stage, we are developing new production techniques that minimize energy usage and introducing energy-saving equipment through the Production Engineering Technology Environment Subcommittee started in FY2016.

We also conduct regular *kaizen* to thoroughly eliminate

waste. Today, the TG ESCO (expert team that conducts reduction activities with *genchi-genbutsu*) formed in 2016 is conducting *kaizen* activities that include the latest technologies and collecting and applying information on best practices from other companies.

● **Recycling: Reductions in materials and parts procurement, more efficient distribution** .....

Toyoda Gosei has prepared and distributed green procurement guidelines for materials and parts procurement with low environmental impact. Together with regular supplier surveys to ensure compliance, we also provide support when improvements are needed.

We are also making active efforts to reduce CO<sub>2</sub> emissions over the lifecycle with more efficient distribution, including reviews of truck allocation and transport modes with the aim of improving truck payloads and shortening distribution lines.

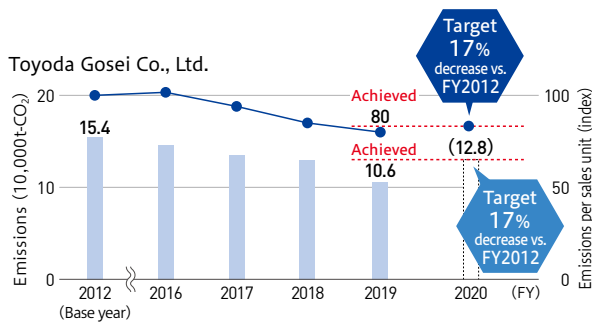
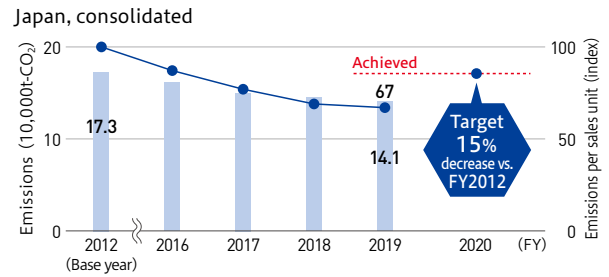
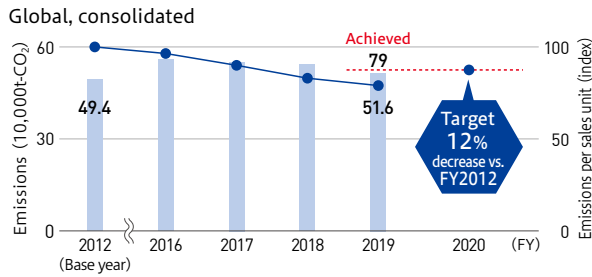


• Renewable energy

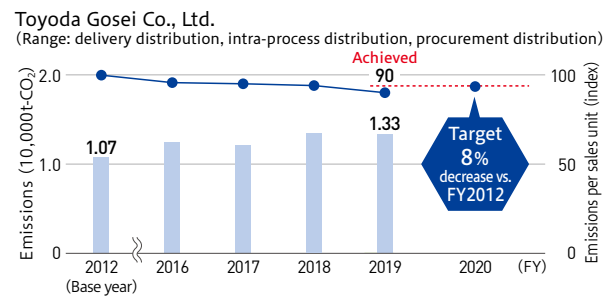
We are moving toward a target of using renewable energy equivalent to 2% of our total global electricity consumption by FY2020. This includes installation of solar and wind clean

energy generation equipment and the purchase of green power. Our next challenge is to raise clean energy levels to at least 20% globally by FY2030.

CO<sub>2</sub> emissions, CO<sub>2</sub> emissions per sales unit (index)\*4



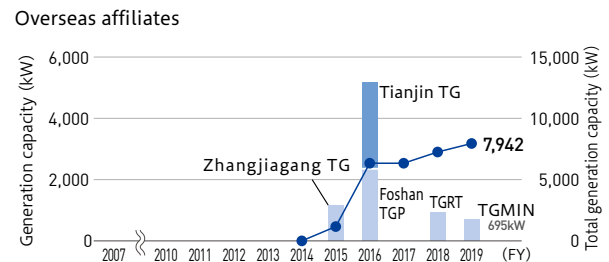
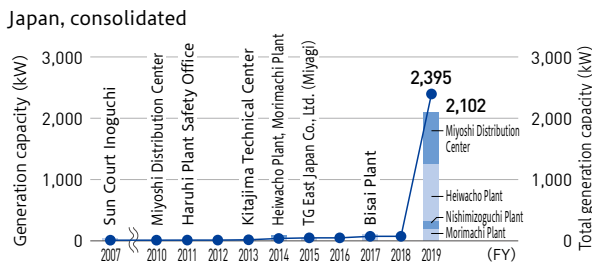
CO<sub>2</sub> emissions in distribution, CO<sub>2</sub> emissions per sales unit (index)\*4



\*4 Emissions per sales unit (index) is a figure obtained taking FY2012 as 100 [CO<sub>2</sub> conversion factor]. The CO<sub>2</sub> conversion factors used for Japan\*5 are the 1990 Keidanren factors. The CO<sub>2</sub> conversion factors used for other countries are from the GHG Protocol (2001).

\*5 Electricity: 0.3707t-CO<sub>2</sub>/MWh, class A fuel oil: 2.69577t-CO<sub>2</sub>/kL, LPG: 3.00397t-CO<sub>2</sub>/t, Town gas: 2.15701t-CO<sub>2</sub>/1,000 Nm<sup>3</sup>, Kerosene: 2.53155 t-CO<sub>2</sub>/kL, LNG: 2.68682t-CO<sub>2</sub>/t, Gasoline: 2.36063t-CO<sub>2</sub>/kL (excluding external factors of gas companies' town gas heat conversion)

Solar power generation graph (does not include stand-alone systems such as outside lights with solar panels)

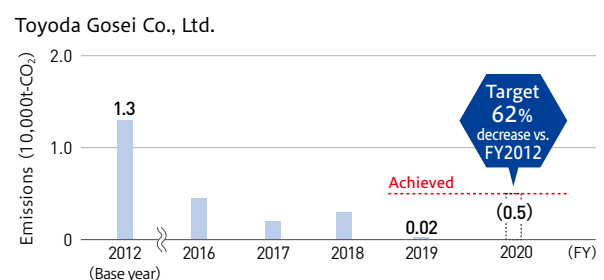


Reductions in 6 greenhouse gases\*6

Of the six greenhouse gases, Toyoda Gosei Co., Ltd. uses three (HFC, PFC, SF<sub>6</sub>) 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. This has resulted in a 74% decrease in greenhouse gases since FY2012. We will continue these reduction activities in the future.

\*6 Hydrofluorocarbon (HFC), perfluorocarbon (PFC), sulfur hexafluoride (SF<sub>6</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), nitrogen trifluoride (NF<sub>3</sub>)

Trend in greenhouse gas (6 gases) emissions (CO<sub>2</sub> equivalents)



## Building recycling societies

Toyoda Gosei uses resources effectively and contributes to a recycling society by reducing waste volumes\*1 and water usage and designing products that are easily recyclable.

\*1 We are currently attempting to reduce waste volumes to meet our FY2020 target as we move toward minimization of industrial waste as set forth in the TG 2050 Environmental Challenge.

### Basic philosophy

To move closer to the recycling society envisioned in the TG 2050 Environmental Challenge, Toyoda Gosei aims to minimize industrial waste and water usage and we are making every effort to use resources effectively, reducing materials usage and waste volumes through thorough sorting and the design of easily recyclable products.

### Waste reduction

**Production** To reduce waste in production processes and achieve our 2020 targets, we are combating waste at its source and recycling. We have also started a waste reduction project with coordination among plants and production technology, materials technology, and product design departments to strengthen efforts to combat waste at its source. At each plant, we are reducing waste through *genchi-genbutsu* (go and see), identifying items for reduction with the help of external experts, and implementing rubber, plastic, and liquid reductions.

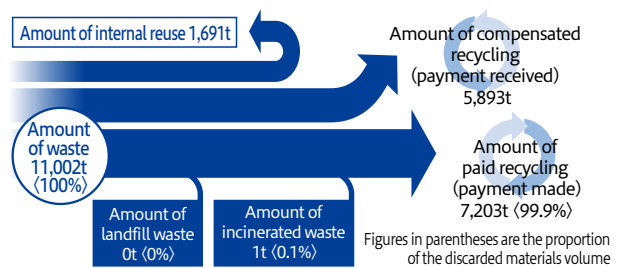
Study sessions are also held to promote waste reduction at both domestic and international Group companies.

**Distribution** The packing material used in product transport is being reduced to prevent products from being dirtied by increasing the number of times reusable containers are used

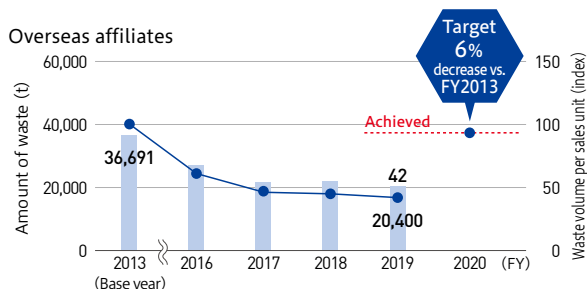
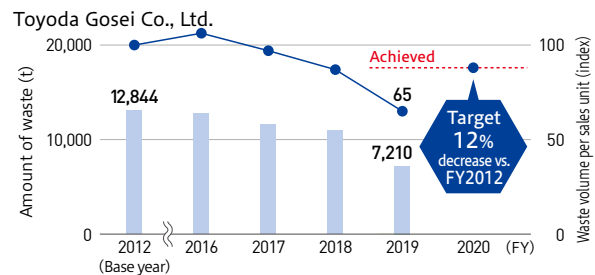
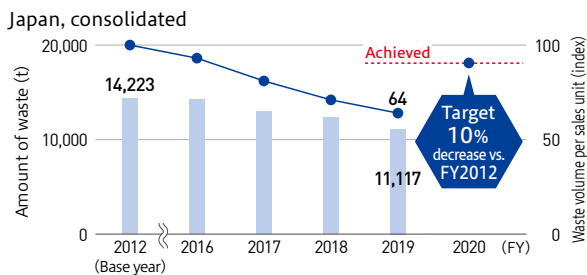
Frequent water shortages and floods have become a major problem in all parts of the world. We are attempting to identify these risks in every country and region where we have operations while also striving to give back to the community by reducing water usage, recycling water, and releasing cleaner wastewater.

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.

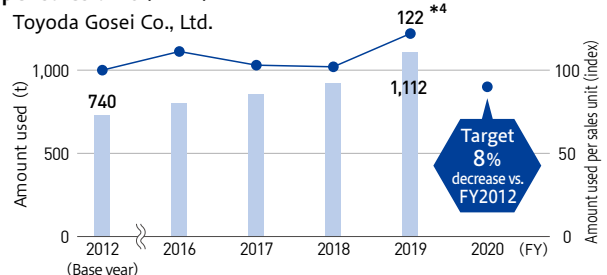
### Amounts of waste generated and disposed of (results for FY2019: Toyoda Gosei)



### Waste volume, waste volume per sales unit (index)\*2



### Amount of distribution packing material used, Amount used per sales unit (Index)\*3



\*2 The amount of waste per sales unit (index) is a figure obtained taking the base year as 100

\*3 The amount of distribution packing material used per sales unit (index) is a figure obtained taking the base year as 100

\*4 The amount of packing material used increased with increased shipments of service parts due to natural disasters and larger part sizes.





## Reducing water risks

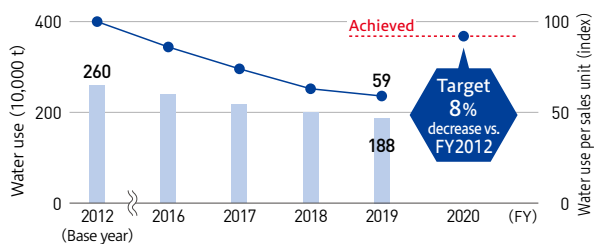
To achieve the 2020 targets, we are working on *kaizen* through TG ESCO (expert team that conducts reduction activities with *genchi-genbutsu*) activities. Today, water use has been reduced 24% compared with FY2012 levels by decreasing loss and leakage in water use amounts.

Wastewater treatment facilities are also being

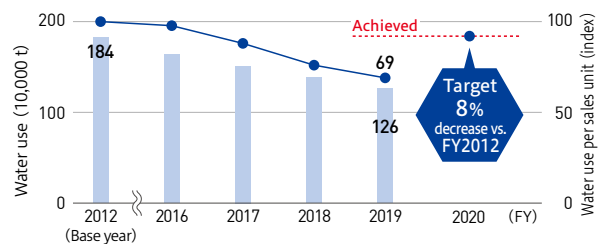
systematically upgraded to improve our processing ability so that wastewater is cleaner and the water recycling rate is higher. We will continue our efforts for improvement by identifying risks in each country and region where we do business based on the increasing importance of water.

### Water use, water use per sales unit (index)\*5

Japan, consolidated

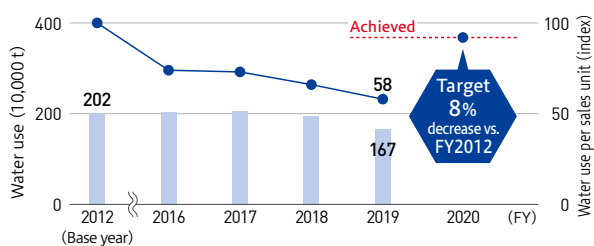


Toyoda Gosei Co., Ltd.



\*5 Water use per sales unit (index) is a figure obtained taking the base year as 100

Overseas affiliates



## Environmental management

While working for environmental preservation, we are continuing employee training and education programs so that every employee can act with awareness of the environment.

### Basic philosophy

In addition to strengthening the selection and management of chemical substances to create products and processes that are kind to people and the earth, we are improving environmental management in things such as compliance with laws, regulations and customer standards in every

country where we do business, based on ISO 14001.

We are also making aggressive efforts for education to raise the environmental awareness of employees and train personnel for sustainable environmental activities.

### Control of chemical substances contained in products

To strengthen the management of chemical substances in our products, we control legally regulated substances in each country, substances that are self-regulated by automakers, and substances covered by our own company regulations. We watch the trends in European REACH\*6 regulations and the EU RoHS Directive\*7 and have a system in place to respond rapidly when these regulations are revised. To respond to

requests from automakers in each country for information on chemical substances in products, we have devised mechanisms and conducted systems for global collective management of chemical substances that we are currently using in Japan, China, Thailand and Vietnam. We will be steadily expanding this system to places where it is not yet in use.

\*6 Registration, Evaluation, Authorization and Restriction of Chemicals

\*7 Restrictions on the use of specific hazardous substances contained in electrical and electronic equipment

### ISO 14001 environmental audit

Toyoda Gosei and its domestic and international affiliates acquire ISO 14001 environmental management system certification. Internal environmental audits are carried out by audit teams composed of members from business areas outside those being audited in order to raise the independence and objectivity of the audits. Toyoda Gosei Co., Ltd. commissions external reviews by the Japan Quality Assurance Organization (JQA) to assess whether our environmental management systems are run properly in accordance with ISO14001.

### Activities to eliminate compliance and environmental violations and complaints

Regular checks are conducted by expert departments and maintenance and management are carried out to ensure legal compliance and no environmental problems or complaints. Preventive activities such as environmental preservation project team activities are also conducted to combat risks. In addition, we analyze problems that occur at other companies, inspect similar facilities including those at domestic and

### Environmental education

Toyoda Gosei educates employees on environmental problems including the destruction of nature and environmental pollution, the impacts on the environment of production activities, and compliance with environmental

#### Environmental education system

Level-specific training

Toyoda Gosei Co., Ltd.	Affiliate Companies	
	Japan	Overseas
Education for new managers		
Education for those posted overseas		
Education for environmental key persons		
Acquisition of environmental education qualifications		
Education for new employees		

### Activities to raise environmental awareness

We are attempting to raise the environmental awareness of employees through Environment Month events, regular environmental lectures, and other activities so that all employees have an awareness of the environment in their activities for ongoing environmental protection.



Environmental exhibits at five plants in Japan



Environment Month: Seeking *Mottainai* ideas  
Don't you have more *mottainai*?



Eco tours  
(woodland maintenance/*Kimori no sato*)



Environmental booth at company events  
(TG Festival)

### ISO14001-certified production sites

Toyoda Gosei Co., Ltd.	7 plants (FY2019)
Affiliates in Japan	10 companies
Overseas Affiliates	Americas: 12 companies, Asia: 7 companies, China: 6 companies, Europe/Africa: 3 companies

international affiliates, and take preventive measures.

We are ensuring proper disposal of equipment containing polychlorinated biphenyl (PCB). So far, we have completed disposal of waste from 848 units. We are continuing these efforts to dispose of untreated low-level PCB waste at an early date.

regulations. The content each year emphasizes understanding and practices based on legal trends, with examples incorporated to create specific and understandable teaching materials.

ISO education

Toyoda Gosei Co., Ltd.	Affiliate Companies	
	Japan	Overseas
Education for environmental staff		
Education to improve internal auditors' skills		
Education to register internal auditors		
Education for supervising managers		
Education for key environmental facility workers		
Education for general workers		

We also conduct a questionnaire survey of employees each year to assess their environmental awareness and plan educational activities based on the results.



## Other key issues

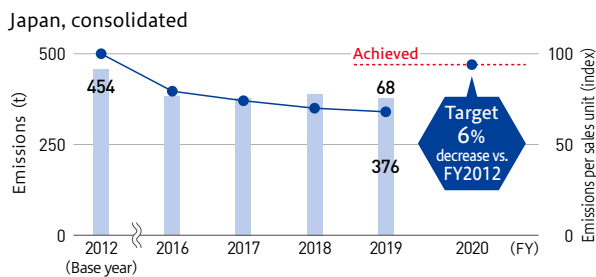
With awareness of environmental issues, every employee makes efforts to preserve the environment while recognizing the importance of protecting nature and biodiversity and contributing to the creation of environmentally-friendly societies.

### Reduced use of substances of concern

In production processes, we are switching to water-based paint and release agents, making painting lines more compact, improving coating efficiency, and making other efforts to reduce Pollutant Release and Transfer Register (PRTR) substances and volatile organic compounds (VOCs).

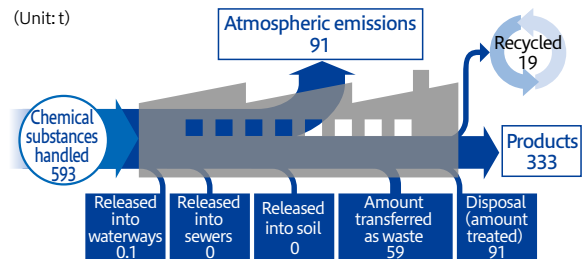
Through on-site visits, we also share information on cases in which VOCs were successfully decreased to promote reduction activities.

### VOC emissions, emissions per sales unit (index)\*

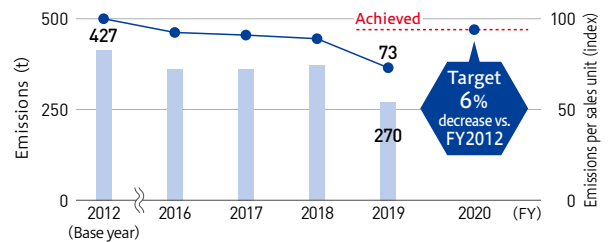


\*Emissions per sales unit (index) is a figure obtained taking FY2012 as 100

### Volumes and flow of emitted PRTR substances



### Toyoda Gosei Co., Ltd.



## Biodiversity

The Toyoda Gosei Group is working actively to protect nature and create environmentally-friendly societies through our plant afforestation project, biotope creation and environmental education.

### • Mid-range plan for 2020

We have drafted a mid-range plan for biodiversity activities and are carrying out these activities with the slogan “Working to save our water, the source of life on earth.”

### Working to save our water, the source of life on earth

Efforts to protect the water used at our plants from its source (mountains) to its destination (sea)

We will further enhance these activities in coordination with the Toyota Group, government agencies, NPOs and others.

### • Kimori no sato woodland maintenance

In FY2019 we cleared undergrowth and thinned trees in a forest in Minokamo, Gifu Prefecture, located on the upper reaches of the Kiso River to promote healthy woodlands.



### • Biotope creation

We conducted a biological survey of the biotope completed in FY2018 at the Heiwacho Plant. Five themes and five species that are Aichi Prefecture Ecosystem Monitoring Indicator Species were confirmed, and living organisms have begun to gradually become established.

