

Ecology

Ecological Process

Management Approach

As a global company responsible for the environment, we will endeavor through all areas of our activities to achieve the sustainable development of society wherein human prosperity and the environment co-exist harmoniously.

In February 2021, Sumitomo Rubber Industries released its Carbon Neutrality Declaration, thereafter launching initiatives to halve CO₂ emissions from factory operations by 2030 and reduce such emissions to net zero by 2050.

Initiatives to Achieve Carbon Neutrality

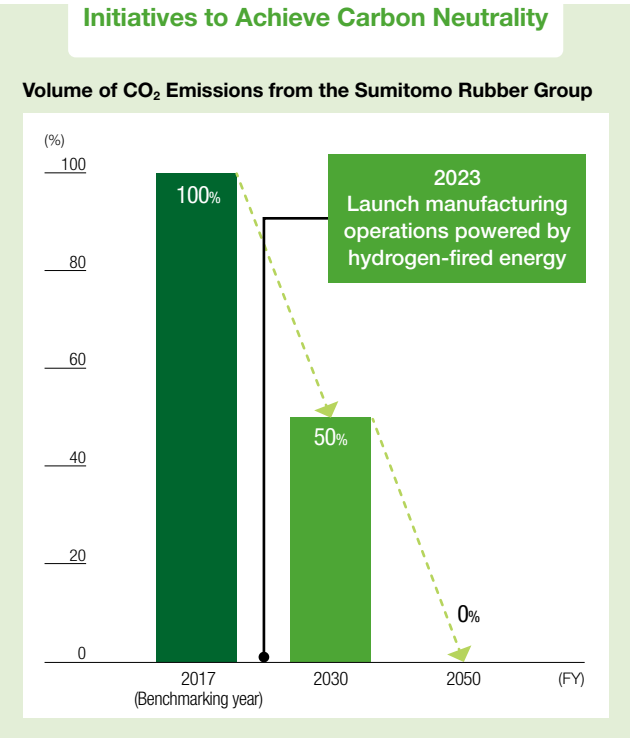
Preparing a Scenario for Achieving Carbon Neutrality

To promote carbon neutrality with regard to Scope 1 and 2 emissions, we have engaged in discussions to determine the feasibility of and priorities in our options for individual initiatives, including the installation of energy-saving facilities, cogeneration systems and solar power generators, a shift to energy procured from renewable energy sources, the replacement of fuel-fired energy with non-fuel energy and the incorporation of hydrogen as an alternative fuel. We have also recognized that achieving carbon neutrality with regard to fuel used to generate steam is an issue requiring particular attention. In line with this recognition, we prepared a plan for utilizing hydrogen.

Based on an assessment of actual status of energy use at each base, we promoted deliberations with base representatives while distributing videos featuring carbon neutrality topics to raise employee awareness. Currently, the preparation of carbon neutrality scenarios is under way at each base.

Shifting to Renewable Energy in Terms of Purchased Energy Used by Our Tire Factories in China

In January 2022, our Changshu factory and Hunan factory in China shifted all purchased energy to energy procured from renewable energy sources, with an eye to contributing to a carbon-neutral society. Thanks to this move, the volume of CO₂ emissions from tire manufacturing at these two factories in fiscal 2022 is expected to decrease by approximately 70% compared with the fiscal 2021 level.



To further reduce the volume of purchased energy, plans call for introducing solar power generators at the aforementioned factories in the second half of fiscal 2022.

Launching Verification Testing Regarding the Utilization of Hydrogen

Tire manufacturing requires two types of energy: electric power and heat. Unlike electric power, for which renewable alternatives have become increasingly accessible, it is particularly difficult to obtain the heat used in tire manufacturing from a renewable energy source. Because of this, finding low-carbon methods to generate heat constitutes a major challenge that must be overcome to achieve carbon neutrality.

To address this challenge, in August 2021, we launched verification testing using hydrogen, which is expected to become a next-generation energy source free of CO₂ emissions, as a project subsidized by the New Energy and Industrial Technology Development Organization (NEDO).

Specifically, we installed hydrogen-fired boilers at the Shirakawa Factory, Fukushima Prefecture, whose local government has taken a proactive stance toward the utilization of hydrogen. Through the around-the-clock operation of these boilers, we aim to identify and develop solutions to such issues as controlling the volume of NOx emissions. In this way, we will evaluate the effectiveness of shifting boiler fuel to hydrogen.

In addition to these boilers, we will install solar panels at the factory, aiming to realize tires whose manufacturing process involves no CO₂ emissions.



Initiatives to Address Climate Change

We recognize that addressing risks and opportunities arising from climate change is an important management issue. In line with this recognition, we aim to implement appropriate countermeasures and, to this end, maintain the Sustainability Promotion Committee. Chaired by the President, this committee is taking a cross-departmental approach to the planning, implementation and management of such countermeasures.

As part of these efforts, we publicly announced our support of the TCFD*1 recommendations in June 2021 (see page 29 for details). We have also clarified our commitment to the SBTi.*2

*1 Task Force on Climate-related Financial Disclosures
*2 Science Based Targets initiative

Implementing Global Environmental Management

Environmental preservation is one of the most important responsibilities that companies must fulfill within a global society.

Demand for global companies to implement uniform environmental management throughout the world regardless of country or region is strong.

As it accelerates its global expansion, the Sumitomo Rubber Group is focusing more than ever on promoting global environmental management.

ISO 14001 Global Multi-Site Certification

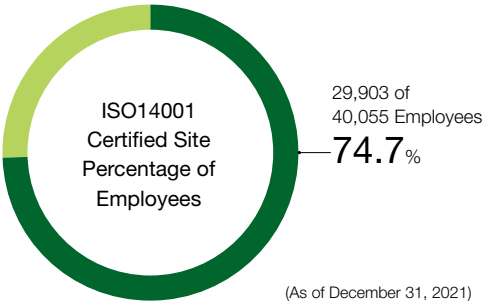
To implement global management in all of its corporate activities, including the creation of a low-carbon society, in December 2010, the Group obtained ISO 14001 Global Multi-Site Certification for its 30 bases in Japan and overseas. This enabled us to carry out unified environmental management at major production and development bases in Japan and overseas.

At the end of 2021, the number of sites maintaining ISO 14001 certification totaled 36 (of these, 34 bases are covered by the multi-site certification). As such, the ratio of ISO 14001 certified sites amounted to 94.7%. Moreover, the number of employees working at these sites as a percentage of total employees was 74.7%.

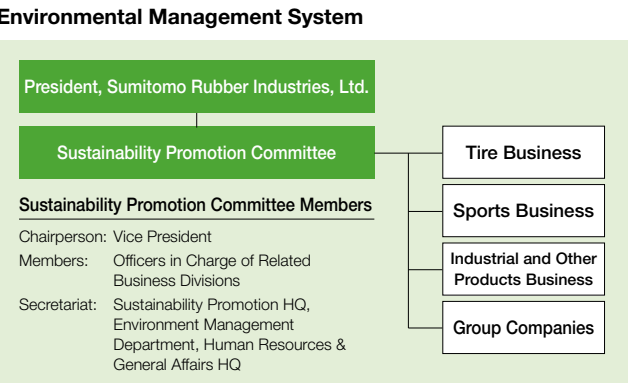
In fiscal 2021, no sites were newly certified.

Looking ahead, we will continue to work to add the Slovenia and Switzerland factories, both of which have already been certified on a stand-alone basis, to the Global Multi-Site Certification.

Coverage Rate of ISO 14001 Certified Sites (Percentage of employees)



Global Environmental Management System



We have identified “Promoting ESG Management” as a Value Driver under the Midterm Plan. In line with this Value Driver, we work to align our business operations from the perspective of not only enhancing our economic value but also our societal value so that we can constantly create new value. In these ways, we will help realize a sustainable society and remain a company deserving stakeholder trust.

The Sustainability Promotion Committee meets twice a year to ensure that members share their recognition of priority issues to be tackled through sustainability activities undertaken around the globe, including environmental management, and to confirm progress in such activities. With the officer in charge of ESG (Executive Vice President) serving as the committee chair, the committee includes officers responsible for relevant departments. In 2021, this committee convened in February and July.

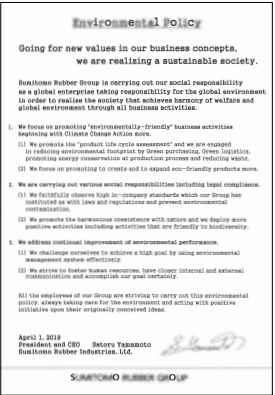
In meetings held during 2021, the committee examined reports regarding the Groupwide status of ESG management; the content and formulation of the Long-Term Sustainability Policy; volumes of CO₂ emissions, energy consumption, waste emissions and water usage and improvements made thus far in these factors; measures undertaken to improve the status of diversity & inclusion throughout the organization; and activities undertaken by nine sustainability departments in Japan and overseas. Following these meetings, conclusions reached by the committee were communicated to all employees.



A Sustainability Promotion Committee meeting

Our Basic Policy on Environmental Preservation (fundamental philosophy)

The Sumitomo Rubber Group established its Environmental Policy in July 2007 and revised said policy in April 2019, putting it into practice via environmental initiatives.



ECO FIRST

Eco-First Commitments

① Creating a Low-Carbon Society

Reduce LCCO₂* emissions per tire by fiscal 2022

Fiscal 2022: ≥ **14%** reduction from fiscal 2005

Fiscal 2021

Reduced by **12.3%**

(compared to fiscal 2005 levels; per tire)
*Life-cycle CO₂

② Building a Recycling-Oriented Society

Maintain our **“Complete Zero”** landfill waste policy at major production bases in Japan and overseas until 2021

Since fiscal 2010

Continued achievement for **12 years**

Establish a technology for **100%** recycling of wastewater at a model factory by 2020

Fiscal 2019

Establishing water-recycling technology at the Turkey Factory

③ Promoting Harmonious Coexistence with Nature

Acorn Project

Conducts activities at least **20 times** a year

Fiscal 2021

Conducted tree planting activities **18 times**

Note: The target has not been met due mainly to the cancellation of events on the back of concerns over the COVID-19 pandemic

Take action to protect **biodiversity**

Fiscal 2021

Conserving **20 species**

As a company certified under the “Eco-First Program” established by the Ministry of the Environment, we identified the three target items in March 2009. Currently, we are promoting initiatives to achieve renewed targets established in October 2017.

Creating a Low-Carbon Society

Data marked with “Ⓢ” has been verified by third parties. The environmental impact indicator was not verified by third parties. The figures shown in the graphs differ from the verified figures as different coefficients were used.

Reducing Life Cycle CO₂ Emissions of Our Tires

ECO FIRST

Due to fallout from the COVID-19 pandemic, the sales mix of our tires changed, with fuel-efficient tires accounting for a smaller proportion than previously. Reflecting this, we have not been able to improve the reduction ratio of LCCO₂ emissions associated with our tires from the 2020 level (12.9%). However, we will push ahead with initiatives to achieve the target and expect this ratio to improve in 2022, the target year.

CO₂ Emissions Reduction Activities at Production Bases

In fiscal 2021, CO₂ emissions from production activities at the Group’s factories in Japan increased by 42 kt-CO₂ to 278 kt-CO₂ from the previous fiscal year. This was largely attributable to growth in production volume and a failure of in-house generators. In addition, the environmental impact indicator of CO₂ emissions showed a 2.2% increase from the previous fiscal year.

In fiscal 2022, the Company will work to reduce CO₂ emissions by strengthening energy-saving activities and introducing renewable energy.

Note: Although no fiscal 2022 target for the environmental impact indicator of CO₂ emissions has been set, the reduction target for total emissions is set at 6%.

CO₂ Emissions (Factories in Japan) Ⓢ

(kt-CO₂e)

Total emissions*¹ Total emissions*² (t-CO₂e/t)

Environmental impact indicator

600

400

200

0

1990

2017

2018

2019

2020

2021

2022 Target

(FY)

293

302

274

275

271

265

278

284

261

267

1.481

0.949

0.951

0.921

1.095

1.119

CO₂ Emissions (Overseas Factories) Ⓢ

(kt-CO₂e)

Total emissions*

Environmental impact indicator

1,000

500

0

2004

2017

2018

2019

2020

2021

2022 Target

(FY)

92

739

779

791

729

790

743

1.958

1.558

1.645

1.627

1.672

1.606

CO₂ Emissions (Factories Operated by Domestic Group Companies) Ⓢ

(kt-CO₂e)

Total emissions*

Environmental impact indicator

4,000

3,500

3,000

≈

0

2004

2017

2018

2019

2020

2021

2022 Target

(FY)

3,370

3,919

3,720

3,403

2,775

3,015

2,834

0.843

0.517

0.486

0.469

0.465

0.449

*1 Total emissions are calculated using cogeneration credits based on the “Guide for Calculating Greenhouse Gas Emissions,” published by the Japan Rubber Manufacturers Association, (used to calculate the environmental impact indicators). CO₂ emission factors for electricity consumption, published by electricity companies in 2004, are applied.

*2 Total emissions without considering cogeneration credits.

*CO₂ emission factors for electricity consumption are based on a WRI/WBCSD GHG Protocol Initiative Calculation Tool (2004).

*Total emissions are calculated using cogeneration credits based on the “Guide for Calculating Greenhouse Gas Emissions,” published by the Japan Rubber Manufacturers Association. CO₂ emission factors for electricity consumption, published by electricity companies in 2004, are applied.

CO₂ Emissions Reduction in Logistics

In fiscal 2021, we worked on optimizing the location of our production sites and reducing the number of products transported between warehouses.

CO₂ emissions from transporting tires increased 12.4% from the previous fiscal year to 27.1 kt-CO₂, reflecting growth in overall cargo weight and greater transportation distance. The environmental impact indicator rose 3.9%.

In fiscal 2022, we will work to promote the loading of products at ports nearest to production sites as well as to improve the precision of demand forecasts.

CO₂ Emissions in Logistics (Domestic)

(kt-CO₂e)

Total emissions* Environmental impact indicator (t-CO₂e/t)

30

20

10

0

2017

2018

2019

2020

2021

2022 Target

(FY)

28.3

29.4

28.9

24.1

27.1

26.8

0.0342

0.0339

0.0332

0.0321

0.0334

0.0331

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Building a Recycling-Oriented Society

Continue to Achieve Complete Zero Landfill Waste

ECO FIRST

The Sumitomo Rubber Group is promoting the 3Rs (reduce, reuse, and recycle) of waste management in order to build a recycling-oriented society.

In fiscal 2021, we achieved complete zero landfill waste for the 12th consecutive year at our major production bases both in Japan and overseas.

Complete zero landfill waste is defined as the complete diversion of landfill waste, meaning a 100% recycling rate and no waste sent directly to landfills.

In fiscal 2022, the aim of our efforts is to proceed with our mission to achieve zero emissions.

Amount of Waste Generated and Recycling Rate (Factories in Japan)

(kt)

Amount of Waste Generated Recycling Rate (%)

40

38

36

34

32

≈

0

2017

2018

2019

2020

2021

2022 Target

(FY)

34.9

35.6

35.0

30.9

36.5

38.9

Material Recycling Rate (Factories in Japan)

(%)

Material Recycling Rate

100

80

60

40

20

0

2017

2018

2019

2020

2021

2022 Target

(FY)

82

74

68

73

76

80

Reducing Waste Disposal*

ECO FIRST

As for the volume of waste disposal, in fiscal 2021 we saw improvement at our factories overseas but deterioration at our factories in Japan. The latter was primarily attributable to the unexpected suspension of our mainstay Shirakawa Factory’s

operations in the wake of an earthquake in February 2021 off the coast of Fukushima Prefecture and the resulting generation of disaster debris.

*Waste disposal refers to the amount of waste diverted for the thermal/material cycle.

Waste Disposal (Excluding Valuables) (Factories in Japan) Ⓢ

(kt)

From factories From tires entrusted for disposal from outside the Company

Environmental impact indicator (From factories)

10

5

0

2017

2018

2019

2020

2021

2022 Target

(FY)

1.86

2.01

1.86

1.50

1.43

0.041

0.024

0.029

0.029

0.034

0.041

Waste Disposal (Excluding Valuables) (Overseas Factories)

(kt)

Total emissions Environmental impact indicator

25

20

15

10

5

0

2017

2018

2019

2020

2021

2022 Target

(FY)

9.44

14.08

24.00

21.79

21.60

0.043

0.020

0.030

0.049

0.050

0.044

Waste Disposal (Excluding Valuables) (Factories Operated by Domestic Group Companies)

(t)

Total emissions Environmental impact indicator

1,500

1,000

500

0

2017

2018

2019

2020

2021

2022 Target

(FY)

745

635

635

579

859

0.127

0.098

0.083

0.087

0.097

0.128

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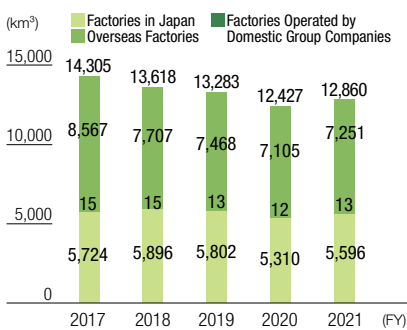
Water Usage Reduction

In light of the global shortage of water resources, we work to reduce our water usage volume.

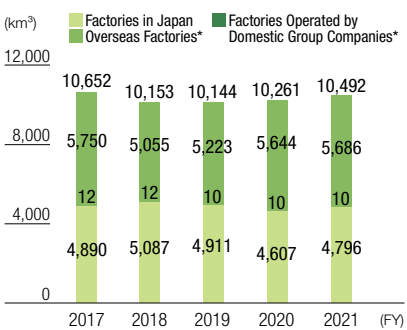
In 2021, total water usage at all Sumitomo Rubber Group factories increased 3.5% year on year, while the volume of wastewater grew 2.3% year on year. We will continue our ongoing efforts to counter these trends, pushing forward with water usage optimization in production processes at each base as well as measures that utilize the results of assessments based on the WRI* Aqueduct Water Risk Atlas.

*World Resources Institute

Water Usage (Factories in Japan, Factories Operated by Domestic Group Companies, Overseas Factories)



Wastewater (Factories in Japan, Factories Operated by Domestic Group Companies, Overseas Factories)



*Figures include estimates based on water usage at some factories

Forestation Activities to Help Curb Global Warming

The Ichijima Factory Wins the “Prime Minister’s Award as a Contributor to Greening Promotion”

The Ichijima Factory has proactively worked to develop a mixed forest comprising both coniferous trees and broadleaf trees from the perspective of protecting biodiversity, to this end carefully conserving a native forest that exists on its premises. At the same time, the factory has been active in protecting rare species living on its premises. For example, its efforts to nurture great purple emperor (*Sasakia charonda*) butterflies date back to 2007, when staff began to cultivate Chinese hackberry (*Celtis sinensis*) trees to feed the butterfly’s larvae. In 2011, staff then manufactured a cage to protect the pupae until emergence. Once the butterflies began breeding successfully, the factory started to invite children from neighboring kindergartens to observe them every year. In addition, the factory’s premises have been approved by the local government as a habitat area for *Lefua echigonia* (Cobitidae family), a class I endangered species of loach fish, for risk dispersion. Based on this approval, the factory is engaged in the protection and nurturing of this species, employing a biotope developed within its premises.

In autumn, the factory makes its premises open to kindergarteners so that they can enjoy acorn gathering. As such, the factory has also been active in facilitating interaction with fellow community members and promoting environmental education via the use of greenery. These efforts, in turn, helped the Ichijima Factory garner outstanding recognition and be chosen for the above award.



Factory representatives photographed with the Prime Minister

Progress in Greening Initiatives

Environmental Initiatives and Greening Initiatives Undertaken by the Sumitomo Rubber Group

Guided by the “Sumitomo Business Philosophy,” since the Meiji period, Sumitomo Group companies have been engaged in tree planting at Mount Besshi—the desolated site of a former copper mine site—in Ehime Prefecture, striving to bring its natural environment back to the original state. This spirit has been passed down to Sumitomo Rubber Industries, serving as a cornerstone for its endeavors.

“Sumitomo Rubber GENKI Forest,” a Green Initiative in Japan

The primary objectives of our forest development efforts include protecting biodiversity and preventing landslides and other disasters, along with curbing global warming through the absorption of CO₂. In Japan, we develop forest around our business bases, engaging in greening activities in 11 locations (covering 32ha) across the country. We name these locations “Sumitomo Rubber GENKI Forest.”

In order to protect biodiversity, we plant only seedlings grown from seeds gathered in the target area. Although our 2021 activities were somewhat restricted due to the need to prevent the risk of COVID-19 infection, we planted a total of 708 trees. Our forestation activities also include cutting back weeds, removing unnecessary trees and other tasks for ongoing forest maintenance.

We also consider communicating with local communities through satoyama (working forests that are maintained and managed by humans) conservation activities, another important objective. To align our forestation activities with the circumstances unique to each local community, we promote collaborative activities in which employees, families, friends, local residents and regional organizations participate.



Participants in tree planting in Takasago GENKI Forest, near the Kakogawa Factory

Greening Initiatives Overseas

In 2021, we planted a total of 3,179 trees and provided 7,440 seedlings. In addition, 15,000 trees were planted in Indonesia through the “Team ENASAVE Green Project,” wherein mangrove seedlings are planted using some of the proceeds from sales of the fuel-efficient “ENASAVE” tire series. This brought the cumulative total number of trees planted under the project to 1,246,787. Furthermore, 2,400 trees were planted through the “1 Pair for 1 Love activities,” in which some of the proceeds from the sale of rubber gloves are allocated to the DUNLOP Home Products Forest on the island of Borneo, Malaysia, in order to protect the orangutan, an endangered species.



DUNLOP Home Products Forest in Malaysia

A Plan for Developing Satoyama around the Okayama Tire Proving Ground

The Okayama Tire Proving Ground participates in the Forest Development Project in Tandem with Business Corporations led by Okayama Prefecture. As part of this project, since 2009 we have been engaged in the development of “Ohashi Kogen GENKI Forest” in Mimasaka City. Having developed a thriving forest that fulfills the project’s initial objectives, we concluded the above activities in 2020, shifting our focus to developing untouched forest within the premises of the proving ground. In 2021, we removed unnecessary trees that had been found to make forest excessively dense, and thus secured paths in the forest. Targeting 2030, we aim to transform this forest, which has been dark and overly cluttered with a dense population of trees and choking undergrowth, into a sunny and refreshing forest populated with a variety of vegetation and

boasting biodiversity. Moreover, the Okayama Tire Proving Ground is taking on the reduction of waste emissions, energy-saving activities, a shift to eco-friendly fuel, the introduction of cogeneration and the promotion of the 3Rs (reduce, reuse and recycle). Along with these endeavors, we will continue to pursue the reduction of CO₂ emissions through forest development.



A site undergoing the forest development process



A certificate granted to “Ohashi Kogen GENKI Forest”

Initiatives to Preserve Biodiversity

The Group is involved in conservation activities focused on endangered, near threatened and rare species (five species of animal and 15 species of plant) at all eight of its sites in Japan, consisting of six factories, the Head Office and the Tire Proving Ground. The Kakogawa Factory is engaged in transplanting “Fujibakama” (*Eupatorium japonicum*) cultivated in its grounds to Kakogawa River beds as well as providing this plant to neighboring corporations and cities. Meanwhile, the Ichijima Factory strives to preserve the great purple emperor (*Sasakia charonda*), a designated national butterfly, and the tiny loach fish *Lefua echigonia* (Cobitidae family). In 2020, the above butterfly was also found to be emerging successfully on the premises of the Okayama Tire Proving Ground. However, we did not see any new adults in 2021, and efforts are now under way to nurture the larvae and pupae until we see them emerging once

again. In “Kobe Mount Rokko GENKI Forest,” we began to take on the preservation and breeding of the bamboo lily (*Lilium japonicum*). Having successfully collected bulbs from native grown flowers, we intend to nurture seedlings in 2022.



Kobe Mount Rokko GENKI Forest Native grown bamboo lily



Ichijima Factory Great purple emperor butterfly

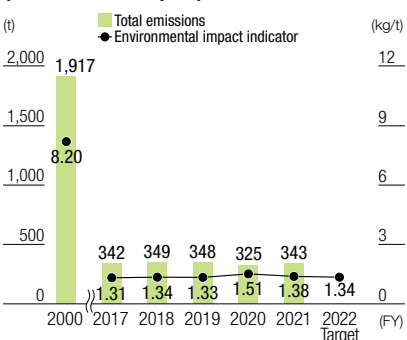
Promoting Environmental Footprint Management

Efforts to Reduce Organic Solvent Use

We strive to reduce emissions of VOCs (volatile organic compounds). In fiscal 2021, there was an increase in the total amount of VOCs emitted due to growth in production volume. On the other hand, the environmental impact indicator improved.

In fiscal 2022, we will promote a switchover to VOC-free products to reduce the emissions of VOCs.

Total Amount of VOCs Emitted (Factories in Japan)



Initiatives to Address Odor-Related Problems

We are proactively taking on initiatives to improve odor-related problems. Specifically, our two factories in China (Changshu and Hunan) are striving to develop novel deodorizing technologies while introducing Regenerative Thermal Oxidizer (RTO), with the aim of curbing odors arising from the rubber kneading and curing processes.

These factories are also actively interacting with local residents, with all employees endeavoring to create a factory loved by fellow community members.



RTO equipment

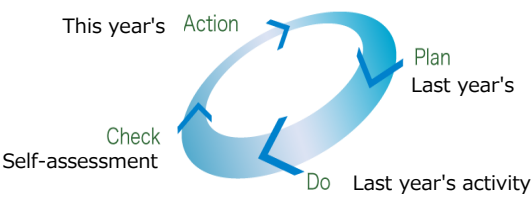


An exchange gathering attended by local residents

Targets and Results

We verify results and set targets for the following year, based on the Group's activity guidelines "GENKI."
Here are the goals and results we set for each item.

The item of the "⊙" mark is the data subject to third-party verification. The unit of material is not included in the validation data.
The number is different because the coefficient is different from the validation value.



Plan Fiscal 2021 Target			GRI Guidelines	Do Fiscal 2021 Activity Result	Check Self- Assessment ^{*1}	Fiscal 2022 Target	Medium-to-long-term (2025) Targets
⑤Creating a low-carbon society							
Reduce global life-cycle CO ₂ emissions per tire by at least 16.0% compared to 2005 levels			302-1,2,5	12.3% reduction	98%	≥16.0% reduction from fiscal 2005	2025 ≥17.0% reduction from fiscal 2005
Energy Saving ^{*7}	6 factories in Japan	Environmental impact indicator of energy usage (crude oil equivalent) ^{*2} : ≥2.9% reduction from the previous fiscal year	302-3	2.3% reduction	99%	3.0% reduction in the environmental impact indicator from the previous fiscal year	≥3% reduction from the previous fiscal year
	15 factories overseas	Environmental impact indicator of energy usage (crude oil equivalent) ^{*2} : ≥1.2% reduction from the previous fiscal year	302-3	1.5% increase	100%	3.0% reduction from the previous fiscal year	≥3% reduction from fiscal 2021
	Affiliates in Japan	Environmental impact indicator of energy usage (crude oil equivalent): ≥1.1% reduction from the previous fiscal year	302-3	4.1% reduction	100%	1.0% reduction from the previous fiscal year	≥1% reduction from the previous fiscal year
Reduction of CO ₂ emissions in production ^{*3*7}	6 factories in Japan ⊙	Environmental impact indicator of CO ₂ emissions ^{*2} : ≥0.4% reduction from the previous fiscal year	305-4	1.9% increase	98%	6.0% reduction in total emissions from the previous fiscal year	2030 ≥50% reduction from fiscal 2017
	15 factories overseas	CO ₂ emissions per unit ^{*2} : ≥1.1% reduction from the previous fiscal year	305-4	3.9% reduction	100%	6.0 reduction from the previous fiscal year	2030 ≥50% reduction from fiscal 2017
	Affiliates in Japan	CO ₂ emissions per unit ≥0.7% reduction from the previous fiscal year	305-4	3.4% reduction	100%	6.0 reduction from the previous fiscal year	2030 ≥50% reduction from fiscal 2017
Reduction of CO ₂ emissions in logistics ^{*7}	Four tire factories in Japan ^{*4}	CO ₂ emissions (total) ≥1.0% reduction from the previous fiscal year	305-4	3.9% reduction	98%	≥1.0% reduction from the previous fiscal year	2030 ≥50% reduction from fiscal 2017

⑥Building a recycling-oriented society							
Reduction of waste	Six factories in Japan ㊦	Environmental impact indicator of waste disposal (excluding valuables) ^{*2} : ≥ 8.2% reduction from the previous fiscal year	306-2	20.6% increase	69%	1.0% reduction in the environmental impact indicator from the previous fiscal year	≥1.0% reduction from the previous fiscal year
	15 factories overseas	Waste emissions per unit excluding valuables ^{*2} ≤2.1% increase from the previous fiscal year	306-2	12.2% reduction	100%	1.0% reduction of per unit from the previous fiscal year	≥1.0% reduction from the previous fiscal year
	Affiliates in Japan	Waste emissions per unit excluding valuables ≤10.7% increase from the previous fiscal year	306-2	31.8% increase	84%	1.0% reduction of per unit from the previous fiscal year	≥1.0% reduction from the previous fiscal year
	6 factories in Japan	Waste emissions per unit ^{*2} ≥1.9% reduction from the previous fiscal year	306-2	6.7% increase	92%	1.0% reduction of per unit from the previous fiscal year	≥1.0% reduction from the previous fiscal year
	15 factories overseas	Waste emissions per unit ^{*2} ≤2.5% increase from the previous fiscal year	306-2	1.4% reduction	100%	1.0% reduction of per unit from the previous fiscal year	≥1.0% reduction from the previous fiscal year
	Affiliates in Japan	Waste emissions per unit ^{*2} ≤5.7% increase from the previous fiscal year	306-2	2.3% increase	95%	1.0% reduction of per unit from the previous fiscal year	≥1.0% reduction from the previous fiscal year
Reduction of landfill waste	Major manufacturing bases in Japan and overseas	Maintaining complete zero emission ^{*5}	306-2	Maintained	100%	Maintaining complete zero emission	Continuing complete zero emission until 2025
Improving material recycling rate	6 factories in Japan	Material recycling rate ≥85%	306-2	76%	89%	≥85%	—
Reduction of water consumption	6 factories in Japan ㊦	Water usage per unit ^{*2} 4.8% reduction from the previous fiscal year	303-1	8.6% reduction	100%	1.0% reduction of per unit from the previous fiscal year	≥1.0% reduction from the previous fiscal year
	15 factories overseas	Water usage per unit ^{*2} ≤0.6% increase from the previous fiscal year	303-1	9.6% reduction	100%	1.0% reduction of per unit from the previous fiscal year	≥1.0% reduction from the previous fiscal year
	Affiliates in Japan	Water usage per unit ≤15.1% increase from the previous fiscal year	303-1	6.1% reduction	100%	1.0% reduction of per unit from the previous fiscal year	≥1.0% reduction from the previous fiscal year

⑦Promoting environmental footprint management							
Reduction of organic solvent emissions ^{*6}	6 factories in Japan	Total organic solvent emissions per unit ^{*2} ≥3.2% reduction from the previous fiscal year	306-2	8.5% reduction	100%	1.0% reduction of per unit from the previous fiscal year	—
	15 factories overseas	Total organic solvent emissions per unit ^{*2} ≤3.3% increase from the previous fiscal year	305-7	4.1% reduction	100%	1.0% reduction of per unit from the previous fiscal year	—
	Affiliates in Japan	Total organic solvent emissions per unit ≤3.7% increase from the previous fiscal year	305-6	11.2% reduction	100%	1.0% reduction of per unit from the previous fiscal year	—
Reduction of chemical substances	6 factories in Japan	Emissions and transfers of substances subject to the PRTR Act ≥55.0% reduction from the previous fiscal year	305-6	93.8% reduction	100%	≥55.0% reduction from fiscal 2001	—
Reduction of air pollutants	Six factories in Japan	NOx, SOx, and dust: ≥ 80% reduction from fiscal 2005 levels	305-7	86.6% reduction	100%	≥80.0% reduction from fiscal 2005	—
⑧Implementing global environmental management							
Construction and expansion of environmental management system		Maintain ISO 14001 Global Multi-Site Certification	103-2	Maintained	100%	Maintain Global Multi-Site Certification	Maintain and continue global integrated certification
		Establishment of environmental management guidelines at tire sales bases nationwide	—	Operational retention	100%	Operational retention	Operational retention
		Establishment of environmental management guidelines at sports industrial product sales bases	—	Operational retention	100%	Operational retention	Operational retention
⑨Helping to curb global warming through tree planting							
Promote the Local Forest Project			304-3	Planted trees under the Local Forests Project (including mangrove planting)	100%	Promote forest development, tree planting and forest maintenance activities	Promoting forest Planting and maintenance activities
				Fiscal 2021: 18,887 trees planted Cumulative total: 1,782,978 trees planted			
Creation and maintenance of GENKI Forests in Japan			304-3	Conducted tree planting/maintenance activities 18 times	90%	Creation and maintenance of GENKI Forests in Japan	Promoting Development of GENKI Forests in Japan

⑩ Preserving biodiversity					
Continue to protect and raise endangered species	304-3	Conducted activities to protect 20 endangered species at eight sites in Japan	70%	Continue to protect and raise endangered species	Continue to protect and raise endangered species
Continue with forest development at the Okayama Tire Proving Ground		Promoted forest development at the Okayama Tire Proving Ground		Continue with forest development at the Okayama Tire Proving Ground	Continue with forest development at the Okayama Tire Proving Ground
Get the raising of the <i>Sasakia charonda</i> at the Okayama Tire Proving Ground on track		The <i>Sasakia charonda</i> larvae have not been hatching successfully at the Okayama Tire Proving Ground this year		Ensure the successful hatching of <i>Sasakia charonda</i> at the Okayama Tire Proving Ground	Successful hatching of <i>Sasakia charonda</i> at the Okayama Tire Proving Ground

*1 Self-assessment uses comparison with baseline year (1 – reduction ratio) in the following formula to calculate the achievement rate:

$$\left(1 - \left| \frac{\text{Baseline Value} - \text{Actual Value}}{\text{Baseline Value}} \right| \right) \times 100\%$$

- *2 The denominator of the unit is the consumption of new rubber (natural rubber + synthetic rubber).
- *3 To calculate CO₂ emissions, we use the The Japan Rubber Manufacturers Association LCCO2 Calculation Guideline.
- *4 4 domestic tire plants, domestic tire division: Shirakawa Factory, Nagoya Factory, Izumiotsu Factory, Miyazaki Factory
- *5 Complete zero emissions: Complete zero landfill waste is defined as complete diversion of landfill waste, with 100% recycling rate and no waste sent directly to landfills.
- *6 To calculate VOC emissions, we use "The Japan Rubber Manufacturers Association voluntary regulation of VOC Emissions".
- *7 Calculated according to ISO14064. When linking GHG emissions, we use the operational control in accordance with the GHG protocol.
 The global warming potential is based on the Japan Rubber Manufacturers Association Greenhouse Gas Emission Calculation Guidelines and Act on Promotion of Global Warming Countermeasures, except for the following.
 The following emission factors are used for electricity supply.
 i) Japan: Emission factor in 2004 (released on ministry of the environment website)
 ii) Overseas: "WRI/WBCSD GHG Protocol Initiative Calculation Tool" 2007 ver1.02
 iii) Credits of cogeneration system and green power electricity are deducted