

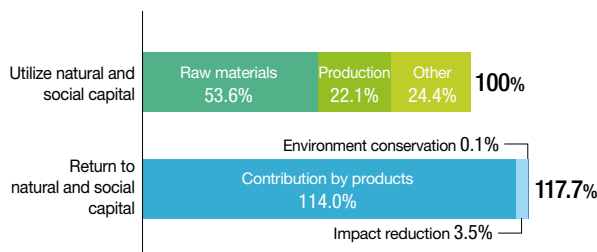
# Environment—Addressing Climate Change

SEKISUI CHEMICAL Group is working on environmental issues from a long-term viewpoint toward the realization of a sustainable society. Our vision for the planet in 2050 is one where biodiversity is maintained in which many of the issues facing us have been resolved, and biodiversity is preserved in a healthy condition. Recognizing that our corporate activities rely on the planet's natural and social capital, we will work to resolve global issues such as climate change, resource recycling, water risks, and biodiversity, and to contribute to the return of natural and social capital through three activities: (1) expand and create markets for Products to Enhance Sustainability; (2) reduce environmental impacts; and (3) conserve the natural environment. To accelerate the Group's contribution to returns, we will pursue initiatives not only as the Group but also in cooperation with our stakeholders.

## Long-term Environmental Management Vision and Environmental Medium-term Plan

We set goals and implement each measure for our environmental medium-term plans by backcasting from the Long-term Environmental Management Vision, SEKISUI Environment Sustainability Vision 2050. In the Medium-term Environmental Plan SEKISUI Environment Sustainability Plan Accelerate II, which runs through fiscal 2022, climate change, water risk, and resource recycling are being advanced as priority environmental issues.

### Integrated Index: Sekisui Environment Sustainability Index



Fiscal 2021 Results

Rate of return to natural and social capital through corporate activities **117.7%\***

\* The goal for fiscal 2022 under the Medium-term Plan is 100% or higher

Breakdown of the rate of return to impacts regarding the aspect of nature

Rate of return to biodiversity	<b>49.7%</b>
Rate of return to plant biomass	<b>41.0%</b>

Note: Calculated using LIME2, a damage calculation-based impact assessment method for use in Japan

For details on climate change initiatives and scenario analyses, see the TCFD Report.

▼ TCFD Report

<https://www.sekisuichechemical.com/csr/report/>

## Efforts on Environmental Issues

- Promote innovation contributing to low carbon and decarbonization
- Reduce energy consumption in manufacturing (energy consumption innovation)
- Use electricity from renewable sources
- Convert purchased electricity to renewable energy (energy procurement innovation)
- Reduce SCOPE 3 emissions by cooperation from supply chain
  - Purchased products & services (main resins)
  - Reduce GHG emissions in use of sold products (houses)
- Expand GHG reduction contributed by products in the life cycle

- Expanded use of non-fossil-derived and recycled materials
- Promote innovation that contributes to resource recycling
- Maximize the material recycling rate



To verify progress toward the Long-term Environmental Management Vision, we calculate the rate of return to natural and social capital using the Sekisui Environment Sustainability Index as an integrated indicator. As a breakdown of this calculation, in addition to climate change issues, the effects on plant biomass (primary production of plants) and biodiversity (number of extinct species) are being estimated, and the impact on natural capital (aspects of nature) monitored. While neither aspect has yet reached a rate of return of 100% or higher, SEKISUI CHEMICAL Group is steadily promoting corporate activities that will help realize a nature-positive future by addressing such environmental issues as climate change and resource recycling.

The aspects of the Group that place a heavy burden on biodiversity include raw materials, chemical substance emissions, and the disposal of sold products. We also acknowledge that paper derived from biomass and materials derived from petroleum, in particular, place a significant burden on plant biomass. To reduce the impact of these, we recognize the importance of strengthening procurement that takes into account the sustainability of non-fossil resources, and therefore prepared the Sustainable Procurement Guidelines for raw materials. Similarly, we initiated activities aimed at reducing environmental impact and corporate risks in cooperation with suppliers.

Moreover, to reduce the impact on nature and expand return to nature, we recognize the importance of developing products and technologies that contribute to decarbonization, as well as of perfecting services and technologies that reduce disposal of sold products and promote resource recycling. We are therefore engaged in expanding Products to Enhance Sustainability.

# Environment

## Efforts to Address Climate Change

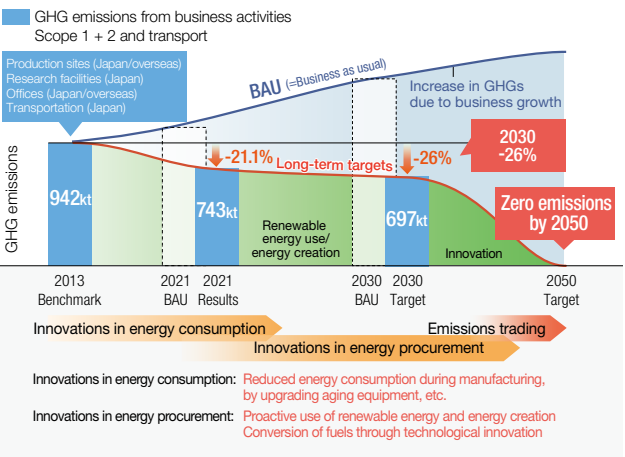
Based on the results of scenario analyses conducted in line with the recommendations of the TCFD in fiscal 2019, we identified climate change issues as risks and opportunities (▶P.31) that could have a major impact on business, which is why we define the environment as one of the key issues for the Group.

In response to the recent demand to accelerate climate change mitigation and adaptation measures, the Group determined to raise the target for GHG reductions for 2030 to 1.5°C at the Board of Directors meeting in July 2022. Although we adopted 2°C and 4°C scenarios for TCFD scenario analyses through 2020, we reanalyzed our position assuming a 1.5°C mitigation scenario to reconfirm our strategies based on a revision to the 2030 milestones. Since fiscal 2021, we have adopted 1.5°C and 4°C scenarios for our analyses.

SEKISUI CHEMICAL Group is working to reduce not only its own GHG emissions but also those of its entire supply chain, from the procurement of raw materials to the transportation and use of its products. In moving toward the long-term goal of achieving effectively zero GHG emissions from our business activities by 2050, we aim to convert all electricity purchased within Scope 2 to renewable energy sources by 2030. In addition, we will strive to reduce GHG emissions to zero by 2050, through proactive steps such as creating energy and changing fuel sources through technological innovations.

In fiscal 2020, we progressed to the stage of innovating energy procurement. In fiscal 2021, solar power generation equipment had been installed at 12 business sites in Japan and overseas (total generated output of 7.7 MW), while electricity purchased from outside had been fully converted to renewable energy at 20

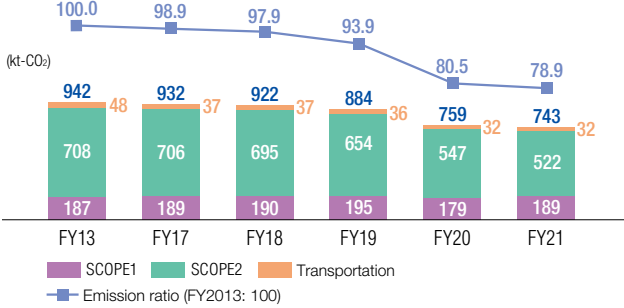
## Roadmap to Reducing GHG Emissions



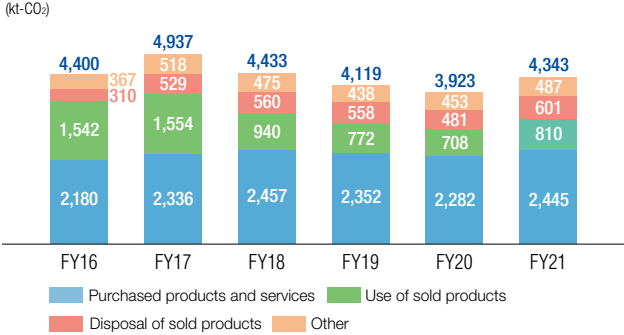
business sites in Japan and overseas. As a result, the renewable energy rate of purchased electricity increased to 19.7%. Moreover, the volume of GHG emissions reduced in fiscal 2021 as a result of updating equipment through the Environment-Contributing Investments Incentive Program\* from fiscal 2017 to fiscal 2019 amounted to 34.8 kt-CO<sub>2</sub>. While production volumes recovered, by converting purchased electricity to renewable energy, the effects of the Environment-Contributing Investments program and reducing the unit of CO<sub>2</sub> emissions of purchased steam, resulted in a 21.1% reduction rate for GHG emissions from business activities in fiscal 2021.

\* Environment-Contributing Investments Incentive Program: Environmental investments strategically implemented to promote reductions in GHG emissions. This program is a form of internal carbon pricing, by which SEKISUI headquarters provides financial support to investing departments at a conversion rate of ¥30,000 per t-CO<sub>2</sub> of GHG emissions reduced.

## Greenhouse Gas (GHG) Emissions from Business Activities



## GHG Emissions from the Supply Chain (SCOPE3)



We aim to reduce GHG emissions in the supply chain (SCOPE3) by 27% in 2030 compared with fiscal 2016. In 2016, purchased products and services accounted for approximately 50% of SCOPE3 emissions, while use of sold products accounted for approximately 35%. In regard to purchased products and services, we have been reviewing our procurement standards since 2018 and asking raw material suppliers about the setting of GHG emissions reduction targets and monitoring progress toward those goals. At the same time, we also began collaborations through the CDP Supply Chain program, and have actively created opportunities for dialogue with raw material suppliers regarding GHG emissions, long-term goals, and reduction efforts, in order to build relationships that promote reductions by both parties. Furthermore, we are aiming to reduce emissions by 20% in 2030, by switching to bio-based and recycled materials. In addition in regard to the use of sold products, we aim to reduce emissions by 50% by 2030 through expanding sales of housing with ZEH specifications. ▶P.45

## Medium- to Long-term GHG Emissions Reduction Targets

Initiatives	Indicators	Fiscal 2021 Results	Medium-term Target (FY2022)	2030	2050	Remarks
Reduction of GHG emissions	Rate of renewable energy of purchased electricity	19.7%	20%	100%	Maintain 100% (Convert all energy used to renewable sources)	Joined RE100
	Reduction of GHG emissions from business activities	21.1% reduction (vs. FY2013)	Reduction of 9% or more (vs. FY2013)	Reduction of 26% or more (vs. FY2013)	Zero emissions	Obtained SBT certification (Until 2030)
	Reduction of GHG emissions from the supply chain	Reduction of 1.3% (vs. FY2016)	—	Reduction of 27% or more (vs. FY2016)	—	
Energy savings	Energy consumption per unit of production	Reduction of 1.5% (vs. FY2019)	Reduction of 3% or more (vs. FY2019)	Reduction of 10% or more (vs. FY2019)	—	

\* SEKISUI CHEMICAL Group is currently considering raising its 2030 GHG emissions reduction environmental target assumption to 1.5°C.

## Environment

### Effect of Issues Related to Climate Change on Businesses and Strategies

Climate change risks can also offer opportunities. In response to medium- to long-term climate change risks, we reduce risk with respect to products and services, supply or value chains, R&D investments, and operations while planning strategies and plans so that we can turn them into opportunities.

▶ P.31 Addressing Risks and Opportunities Climate Change Risks Impact Analysis

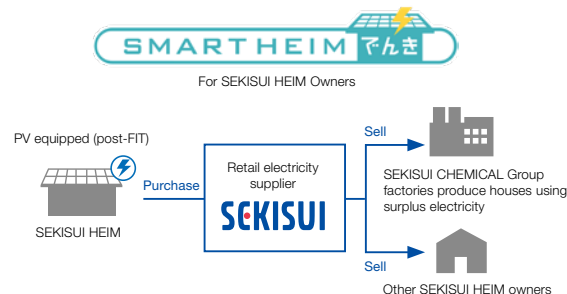
#### Case Study: SMART HEIM DENKI Power Trading Service

##### Risks

Stagnation in the spread of solar panel installation due to the end of the feed-in tariff (FIT) system

##### Measure to turn risk into opportunity

Purchase surplus electricity generated by SEKISUI HEIM owners with solar panel-equipped homes for use in our housing factories



#### Case Study: Research and Development Investments

All R&D projects are planned in a long-term, strategic manner to ensure their ability to contribute to solutions for issues in the natural and social environments, such as climate change.

#### Perovskite solar cells

##### Risks

Depletion of scarce resources, demand to reduce energy use, installation restrictions, etc.

##### Measure to turn risk into opportunity

Perovskite solar cells, currently under development, are lightweight and more efficient, so are expected to expand the freedom of installation.

▶ P.23

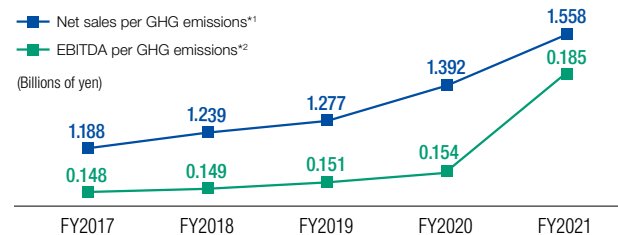
### Effects of Climate Change Efforts on Management

We verified how efforts that contribute to climate change mitigation and adaptation are affecting management using the trends in carbon efficiency (environmental) over time and using the correlation between carbon efficiency (environmental) and economic efficiency.

First, the relationship between GHG emissions, sales, and EBITDA is shown by changes in net sales per GHG emissions and EBITDA per GHG emissions. An increasing trend has been observed in two indicators in business activities. Although these indicators temporarily turned negative in fiscal 2020 when looked at across the supply chain, we believe this decline stems primarily from the global spread of COVID-19. Through these indicators, we have confirmed that management based on our business strategies is heading in the envisioned direction.

We verified the impact on management using the relationship between net sales per GHG emissions as an indicator of carbon

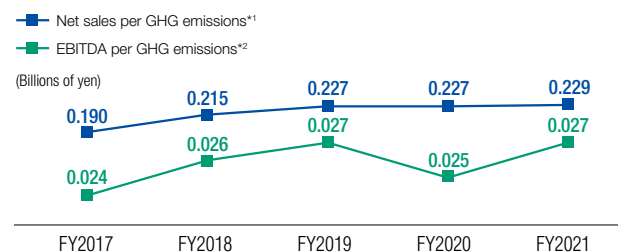
#### Carbon Efficiency in Business Activities



\*1 Net sales per GHG emissions: Net sales (Billions of yen) / GHG emissions (kt-CO<sub>2</sub>)

\*2 Revenue per GHG emissions: EBITDA (Billions of yen) / GHG emissions (kt-CO<sub>2</sub>)

#### Carbon Efficiency in the Supply Chain



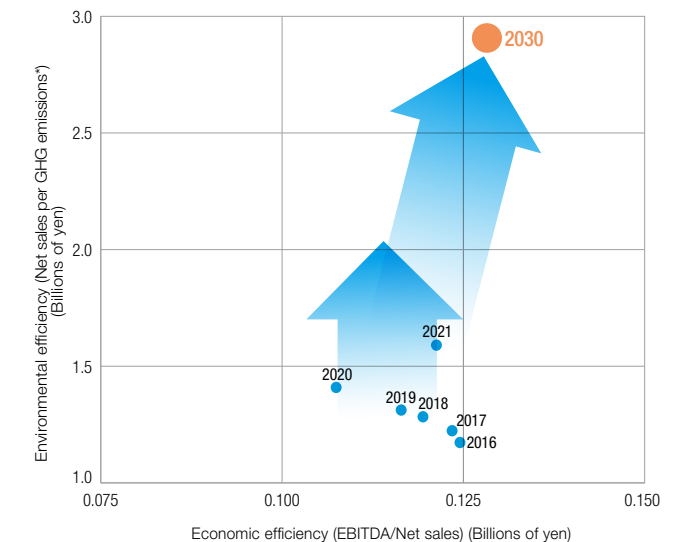
\*1 Net sales per GHG emissions: Net sales (Billions of yen) / GHG emissions (kt-CO<sub>2</sub>)

\*2 EBITDA per GHG emissions: EBITDA (Billions of yen) / GHG emissions (kt-CO<sub>2</sub>)

efficiency (environmental) and EBITDA margin as an indicator of economic efficiency. The actual values of the two indicators in business activities from FY2016 to FY2021 are plotted, along with the target based on the FY2030 long-term vision. With ESG Management as our business strategies through fiscal 2020, we increased net sales per GHG emissions while maintaining stable earnings. Moreover, we confirmed that in fiscal 2021 we achieved growth that balances economic with environmental efficiency in working toward the goals illustrated in the Vision. The results of this investigation indicate that the business strategies being advanced based on the Long-Term Vision for fiscal 2030 are correct. We will further accelerate initiatives, as well as investigate the potential for moving up initiative schedules and undertaking new measures to improve profitability versus carbon.

For details on the analyses of comprehensive income for stakeholders using impact-weighted accounting as part of the investigation into the impact from other multi-stakeholder perspectives, please see the [TCFD report 2022](#).

#### Correlation between Economic Efficiency and Environmental Efficiency



\* EBITDA per GHG emissions: Net sales/GHG emissions in business activities (kt-CO<sub>2</sub>)

## Environment

### Initiatives for Resource Recycling

We promote resource recycling initiatives that will help accelerate decarbonization efforts. In fiscal 2020, we formulated a resource recycling policy, strategy and roadmap for the realization of a circular economy in 2050.

Plastics are one of the major materials used in SEKISUI CHEMICAL Group's business domains. Up until now, in the production process, we have continually made efforts year after year to reduce the amount of waste generated, using waste per unit of production as an indicator for these efforts. In addition, we have carried out, for example, internal recycling to reuse scraps generated and implemented processing for reuse of resources including energy when disposing of materials as waste.

In our newly determined resource recycling policy, we will expand the ratio of plastic materials we use comprised of bio-plastics and other recycled materials that are not derived from fossil fuels. Regarding our production processes, we will promote internal recycling more than ever before, intensifying initiatives to minimize the waste products emitted from our construction projects. In addition, in both the use and recovery stages, we will work on our product design and supply chain to ensure products can be disposed of with thorough sorting and separation. In this way, we will promote initiatives to maximize reuse of material resources through mechanical recycle, chemical recycle, and other recycling methods.

Within these life cycles, we believe that innovation at the product design stage is important for driving the promotion of resource circulation. By designing new products and revising the various processes for existing products, we are promoting initiatives for innovation that will accelerate resource circulation.

### Road Map for Achievement of Long-Term Resource Recycling Targets

		FY2022 Targets	By 2025	By 2030
Business Strategy	Net sales of Products to Enhance Sustainability that contribute to resource circulation*	1.1 times	1.3 times	Double or more
Raw material resource conversion	Net sales of products not derived from fossil fuels and using recycled materials	¥3.0 billion	¥10.0 billion	¥100.0 billion
Resource recycling of waste	Ratios for recycling waste plastic into new materials	Analyze current conditions and set baselines	Double	100%

\* Benchmark for net sales of Products to Enhance Sustainability that contribute to resource circulation: ¥296.0 billion (FY2020)

### Addressing Water Risk Issues

With regard to water risk issues, we have established two goals—minimizing the water risk at SEKISUI CHEMICAL Group and contributing to the resolution of water-related issues in local communities—while reducing the water intake volume of the entire Group. In addition to promoting recycling, we are also focusing on improving the chemical oxygen demand (COD) index for the quality of water discharged into rivers. As a specific measure, in regard to water resources in the watersheds where business sites are located, we will select locations/suppliers where the business impact is substantial and locations where the water risks are substantial and minimize the environmental impact by 2030.

In fiscal 2020, we conducted assessments of the likely impact on business from water-related risks at all SEKISUI CHEMICAL Group production sites and research institutes. In fiscal 2021, we identified five domestic and overseas sites that were evaluated as having a large business impact, and established guidelines for business impact and water conservation level initiatives that should be minimized.

In fiscal 2021, water intake at production sites increased by 4.3% compared with fiscal 2016 and by 8.3% compared with the previous year. This increase is due to the addition of four new production sites overseas and to an increase in production volume at factories that produce synthetic resins, which have high water intake volumes. The COD of water discharged declined by 1.2% compared with results of fiscal 2016 and increased by 12.0% over fiscal 2020 due to an increase in water discharge coinciding with higher production volumes.

Engaged in the production of synthetic resins, the Shiga-Minakuchi Plant accounts for approximately 30% of the total water intake volume from all Group business sites in Japan, a figure that has been increasing every year since fiscal 2015. To improve this situation, we undertook comprehensive capital investments aimed at reducing the water intake from fiscal 2018. All investment plans were

completed in 2020. As a result of these efforts, we are now able to ascertain where industrial water is used and the usage volumes, as well as make adjustments to usage volumes. We are also working to reduce the water intake volume by reusing purified water in the cooling towers installed within the site.

### Examples of Capex Using the Environmental Contribution Investment Framework

	Site	Reduction strategy	Result (plan) compared with FY2016
Reduction in water intake	Shiga-Minakuchi Plant	Introduced filtration equipment allowing the reuse of recycled wastewater as a coolant Strengthened management and promoted visualization of water use at the facility	Reduction of 9%
	Iwate Plant of SEKISUI MEDICAL CO., LTD.	Automated the industrial water intake adjustment system	Reduction of 10%
Reduction in wastewater COD volume	SEKISUI NANO COAT TECHNOLOGY CO., LTD.	Improved treatment capacity by upgrading wastewater treatment facilities	Reduction of 25%

### Outline of the Resource Recycling Strategy

