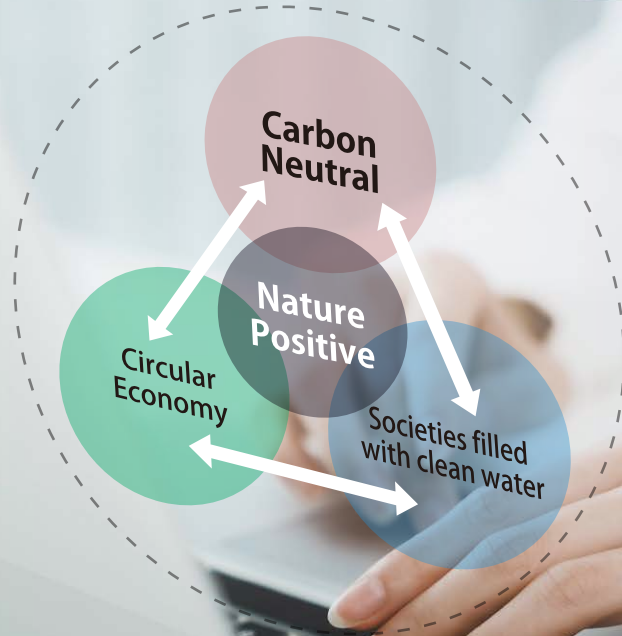


**SEKISUI**

E A R T H

G L O B A L

S U S T A I N A B I L I T Y



T E C H N O L O G Y

S O C I E T Y

C O N T R I B U T I O N

**TCFD**  
*Task Force on Climate-related  
Financial Disclosures*

**TNFD**  
*Task Force on Nature-related  
Financial Disclosures*

**Report 2023**

# SEKISUI CHEMICAL Group's Responses to Climate Change and Natural Capital (2023)

~Information Disclosure Based on TCFD Recommendations and in Accordance with TNFD Guidelines~

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Resolving the crisis caused by climate change impacts and biodiversity loss is internationally recognized as essential for human wellbeing. SEKISUI CHEMICAL Group agrees with this recognition and recognizes that it is also an important issue for corporate sustainability.

This report discloses information on climate change in accordance with the TCFD recommendations and on biodiversity (nature) in accordance with the TNFD guide. The Group recognizes that the two issues are deeply related and influence each other (see Figure 1), but in view of the risks faced as a company and the impact on society, it has been determined that it is better to explain the issues from a different perspective or angle so that relevant stakeholders can understand them, and the report has been divided into parts for each issue.

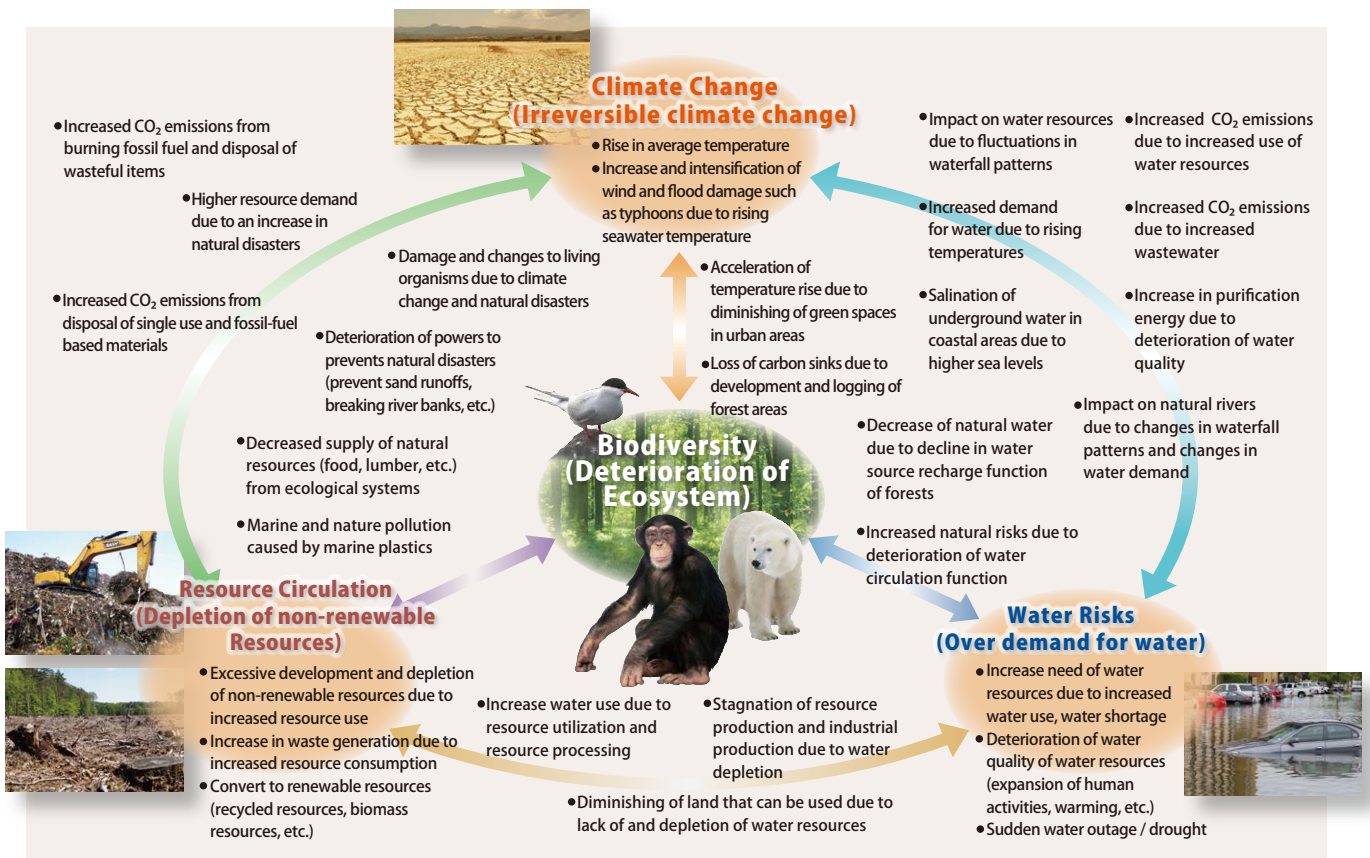


Figure 1. Correlation among environmental issues

[Overview] In the SEKISUI CHEMICAL Group's long-term vision, "**Vision 2030**", environmental issues, such as climate change and biodiversity, are recognized as key issues, and initiatives are being implemented based on strategies to accelerate the solving of those issues through the Group's businesses.

### Positioning of Environmental Issues

SEKISUI CHEMICAL Group recognizes that environmental issues exist while mutually affecting each other, and is working to solve environmental issues comprehensively. The Group defines the key environmental issues as climate change, water risk, and resource circulation, which are addressed in the medium-term environmental plan (2020-2022). These key issues are positioned as integrated issues as they correlate with each other and also directly and indirectly influence biodiversity issues.

It is recognized that the efforts to address these environmental issues are not only important to business, but they are also important initiatives that will lead to the realization of an "earth with maintained biodiversity" as set out in the "SEKISUI Environment Sustainability Vision 2050", SEKISUI's long-term environmental vision. This positioning remains unchanged in the new medium-term environmental plan (2023-2025), which started in FY2023.

The Group also uses methods such as LIME2 and impact-weighted accounting to visualize the impact of corporate activities on natural capital and their impact on management in order to understand and manage environmental issues thoroughly and quantitatively.

#### [Long-term Vision]

In 2019, the Group formulated a long-term vision, "**Vision2030**", which sets the direction for the entire company (Figure 2). "**Vision2030**" is a vision statement that expresses our strong will to innovate "in order to realize sustainable

society, we support the basis of LIFE and will continue to create 'peace of mind for the future.'" The company will contribute more than ever to solving social issues by expanding its existing businesses and taking on challenges in new areas, and by innovating, based on a strategy of innovation and creativity with ESG management at the core of the company's strategy. Through this cycle, the vision of doubling the Group's business (net sales of 2 trillion yen, operating profit margin of 10% or more) in 2030 is targeted.

\* Current businesses:

Four Business Domains of Residential (Housing), Advanced Lifeline (Social Infrastructure), Innovative Mobility (Electronics / Mobility), and Life Science (Health / Medical).

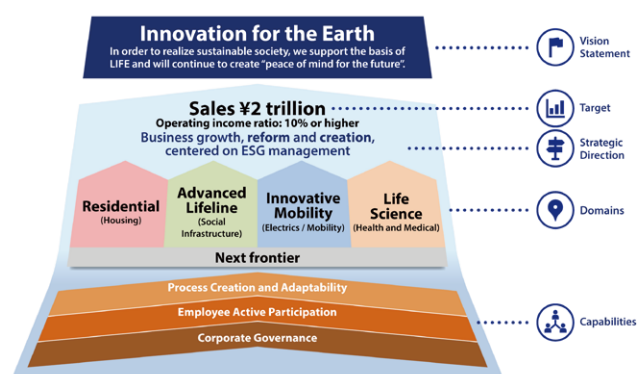


Figure 2. SEKISUI CHEMICAL Group's long-term vision "**Vision2030**"

#### [Performance Indicators]

In the long-term vision, two indicators have been established to measure economic values and social values. These indicators are based on the recognition that sustainable management is necessary to continuously expand the degree of contribution to solving issues and earnings. One of these is the "SEKISUI Sustainable

Spread", which measures the ability to sustain operations based on the difference between lower cost of capital and increased efficiency in terms of ROIC. The second is the "SEKISUI Environment Sustainability Index"\* , which expresses the value of corporate activities on natural capital and social capital as the degree of contribution to solving issues (impact on the earth and society).

The goals of the "SEKISUI Sustainable Spread" are to continuously improve ROIC, which indicate the efficiency of business management over the medium term, and to lay the groundwork for a management foundation that enhances the long-term sustainability of management.

Regarding the "SEKISUI Environment Sustainability Index", SEKISUI CHEMICAL Group believes that by continuing to aim for an index value of 100% or more and by doubling our business and continuing further growth will increase the social value of the Group.

\* SEKISUI Environment Sustainability Index:

Quantified amount of impact caused by the use of natural capital by corporate activities of the SEKISUI CHEMICAL Group and the contribution to natural capital made by the corporate activities. Calculated using the Japanese version of the LIME2 damage calculation impact assessment method. The impact and contribution to social capital is also included in the calculation as of FY2020

#### [Medium-Term Management Plan and Important Issues to be Addressed]

SEKISUI CHEMICAL Group has been advancing "**Drive2022**", a three-year medium-term management plan covering the period from FY2020 to FY2022, as the first step to achieve its long-term vision. The basic policy has been to "double the business by contributing to solving of social issues, by putting a drive on sustainable 'growth', 'reformation', and 'preparation'", with the aim of solidifying the management foundation through full-scale

implementation of ESG management and accelerating the preparation for the next stage of growth. The new three-year medium-term management plan "Drive 2.0" that started in FY2023 will further focus on sustainable growth and enhanced preparation in order to demonstrate the feasibility of our long-term vision.

The environment is a key issue in this plan, alongside governance, digital transformation (DX), human capital, and fusion (innovation). With regard to environmental issues, the results of the scenario analysis of this TCFD report showed that climate change will have a significant impact on management in the short to long term and on other environmental issues, including biodiversity, and both risks and opportunities are recognized for our business. In response, environmental issues have been set as one of the key issues to be addressed in order to achieve the long-term vision, with climate change mitigation and adaptation at the top of the list.

#### [Long-Term Targets for Environmental Issues]

A medium-term environmental plan, which recognizes the key issues in the environment and considers what needs to be done in the medium term, backcasting from the targets to be achieved by 2050, has been developed. The direction for 2050, with regards to environmental issues including climate change, is outlined in Figure 3.

SEKISUI CHEMICAL Group's vision for the Earth in 2050 is an "Earth with Maintained Biodiversity" where the goals of all environmental issues, including climate change, resource circulation, and water risks, are accomplished at the same time. Recognizing

that corporate activities rely on the natural and social capital of the planet, three activities contribute to the return of the natural and social capital; (1) expand and create markets for “products to enhance sustainability”, (2) reduce environmental impacts, and (3) conserve the natural environment. These activities contribute to solving global issues such as climate change, resource circulation, water risks, and biodiversity (see Figure 3). Moreover, in order to accelerate the Group’s contribution to returns on natural and social capital, initiatives will be promoted by not only the Group but also in collaboration with its stakeholders (see Figure 3). This can be explained as “stocks” of natural

and social capital, and flows that affect the values of the stocks. Specific examples of initiatives could include the following:  
 (1) Conserve natural capital (“stocks”) such as the atmosphere, land, water, sea, and land, including both biodiversity and the material environment that supports ecosystems.  
 (2) Sustainably utilize (“flow”) ecosystem services, that is, utilize the benefits of natural capital.

The group is formulating strategies and promoting initiatives to conserve “stock” and utilize “flow” sustainably.



\*Stakeholders: "Customers", "Shareholders", "Employees", "Business partners", "Local Communities and the Environment"

Figure 3. SEKISUI Environment Sustainability Vision 2050

In the medium-term environmental plan starting this year, the focus is on improving the quality of our environmental efforts while simultaneously making changes to achieve solutions to all environmental issues. Reforms will be promoted by improving the quality of our efforts by recognizing all environmental challenges, and selecting and implementing solutions with no trade-offs. To this end, environmental strategies will be developed with an awareness of the correlation between all environmental issues (see Figure 4).

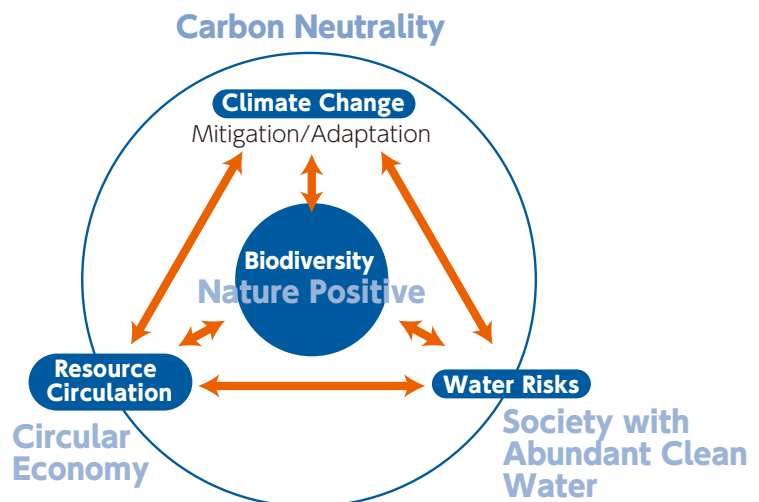


Figure 4. Correlation of environmental issues of SEKISUI CHEMICAL Group



# TCFD

*Task Force on Climate-related Financial Disclosures*

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1 ..... Executive Summary

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2 ..... Governance

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3 ..... Risk Management

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4 ..... Strategies

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5 ..... Indicators and Targets

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6 ..... In Closing

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SEKISUI CHEMICAL Group, based on the recommendations by the TCFD, has been disclosing its responses to climate change issues since FY2017. This report is updated with new initiatives in 2023, based on the disclosures made last year. The major revisions are as follows:

- Visualization of the impacts of resource circulation on society (see Chapter "4. Strategies").
- Revision of the greenhouse gas emission reduction targets and reduction roadmaps with the aim of realizing the 1.5°C target (see Chapter "5. Indicators and Targets").

**Commitment to Actions** | In the SEKISUI CHEMICAL Group's long-term vision, "**Vision2030**", environmental issues, such as climate change and biodiversity, are recognized as key issues, and initiatives are being implemented based on strategies to accelerate the solving of those issues through the Group's businesses.

**Governance** | The Group's Board of Directors has made the following final decisions:

- Policies and strategies to mitigate the impact on environmental issues, including climate change, and to expand contributions to solving them.
- The organization's plan (transition plan) to achieve a sustainable society, including transition to a low-carbon economy
- Understanding the impact of environmental issues, including climate change on management, and policies for addressing those issues

Regarding major matters discussed and decided by the Board of Directors, the Sustainability Committee deliberates on policies and strategies in advance, based on company-wide situation regarding environmental issues such as climate change, discussed and summarized by the Environmental Subcommittee. In addition, based on the policies, strategies, and transition plans finalized by the Board of Directors, the Environmental Subcommittee discusses specific measures and goal setting, and manages progress.

**Risk Management** | An ERM\* system has been structured to identify, share, and manage major company-wide risks within the Group, which, together with other risks that are assumed to have a significant impact on management, are evaluated in a unified manner. Among these, specific Group-wide and individual organizational risks, including environmental issues such as climate change, are shared and deliberated by the Board of Directors, the Sustainability Committee, internal management meetings, and each Subcommittee (as described in Section 3-1).

The Board of Directors shares the view that risks related to environmental issues such as climate change are serious external environmental risks, and the company has positioned them as requiring a medium- to long-term strategies taking into account policies, measures, and transition plans when formulating its management

plan, and has developed a medium-term environmental plan (as described in Section 3-2).

\* ERM:

Enterprise Risk Management. This refers to a mechanism and process for Group-wide, integrated risk management and risk management activities.

## Strategies

### ■ Scenario analysis

Scenario analyses were conducted to identify potential risks and opportunities that could arise from climate change, and it was confirmed that strategies to reduce risks or to convert risks into opportunities are in place for all scenarios assumed. The scenario analyses also reaffirmed the effectiveness of the strategies as a solution to the issues related to climate change.

Based on the 1.5°C scenario and the 4°C scenario, two axes were set: one axis is whether climate change mitigation progresses or not, and the other axis is the decentralization of social systems in rural areas or concentration in large cities. Furthermore, mutual impacts of other environmental issues with climate change issues were taken into account, and four climate change scenarios were assumed.

Recognizing that environmental issues such as resource circulation, water risk, and biodiversity are related to climate change issues, measures from a broader perspective were reaffirmed. Strategies to re-establish milestones and accelerate efforts to realize a decarbonized economy were reviewed in each scenario, while verifying the validity of these strategies.

Activities based on the three-year medium-term management plan started in 2023. The plan reflects a climate change strategy with transition in mind that will accelerate efforts to achieve a decarbonized economy. The Group will continue to drive corporate activities towards the steady achievement of milestones.

### ■ Validity of the strategies

The following verification were conducted to confirm that the Group's strategies to address climate change issues were appropriate.

(1) Monitoring carbon efficiency (environmental performance)

(2) Correlation between carbon efficiency (environmental performance) and economic performance

(3) Calculation of comprehensive stakeholder income using impact-weighted accounting methods (taking into account impacts on resource circulation and biodiversity).

The amount of greenhouse gas emissions emitted by business activities and the amount of greenhouse gas reduction contributed by products that contribute to solving climate change issues are converted into economic values. As a result, it was confirmed that comprehensive stakeholder income, which takes into

account the impact of climate change issues on net income, has more than doubled since fiscal 2016.

Going forward, initiatives using ESG investment framework in financial planning will be promoted so that environmental value can be expanded while achieving both economic and environmental performance.

## Indicators and Targets

Milestones are set by backcasting from the long-term goals of "SEKISUI Environment Sustainability Vision 2050", and efforts until FY2022 had been based on the medium-term environmental plan "Environment Sustainability Plan: Accelerate II". In the current medium-term management plan (2023-2025), the following indicators are set to manage progress on climate change:

- (1) Net sales of products to enhance sustainability\*
- (2) Greenhouse gas emissions (Scope 1, 2, and 3)
- (3) Sales of products that contribute to resource circulation and products that contribute to resource conversion, and waste recycling rate

In FY2022, the target for net sales of products to enhance sustainability was achieved with actual sales of 908.9 billion yen, compared to the target of 800 billion yen. Of which, sales of products that contribute to resource circulation was 2.2 times greater than FY2020 (123.3 billion yen), of that which sales of products that contribute to resource conversion of raw materials to resources was 34.8 billion yen (11 fold compared to FY2020). Thus, targets on resource circulation strategies were achieved and efforts to decarbonize are accelerating. Regarding greenhouse gas emissions, the Group's business activities achieved the reduction targets, but reduction targets for the supply chain could not be achieved.

\* Products to Enhance Sustainability:


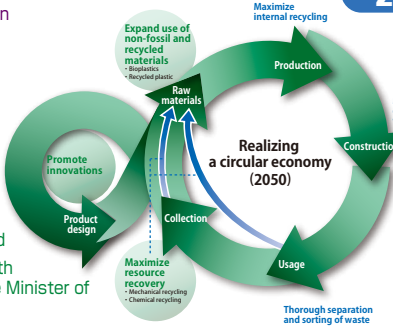
Series of products that are certified and registered that contribute significantly to solving environmental and social issues, including climate change issues, based on in-house standards.

Products are reviewed by a certification committee composed of in-house members and products that meet the criteria are registered. This committee receives advice and feedback from an external advisory board of external experts to ensure high standards and transparency.

# List of Initiatives to Address Climate Change

## Recent SEKISUI CHEMICAL Group Mitigation and Adaptation Initiatives

■ : Internal policies or business development  
■ : Stakeholder Related Initiatives (External Evaluations, etc.)

Mitigation	Adaptation
<p><b>SBT (Science-Based Targets) certification (first in chemical sector worldwide)</b></p> <p>At COP24, introduced corporate examples of "our efforts to contribute to greenhouse gases reductions from products through our Global Value Chain"(Official Japanese side event sponsored by Ministry of Economy, Trade and Industry)</p> <p><b>Expressed support for TCFD</b></p> <p>[Housing] Received Ministry of Land, Infrastructure and Transport Grand Prize for the Global Environment for development and popularization of "energy self-sufficient housing"</p>	<p>Ministry of the Environment released the "Climate Change Adaptation Guide for Companies" (participated in the drafting committee)</p>
<b>2019</b>	
<p>Began trading electricity through "Smart Heim Denki"</p> <p>[Housing] Received the 2019 Minister of the Environment Award for Global Warming Prevention Activity for "development and dissemination of energy self-sufficient housing"</p> 	<p>[Town and community development] Began Phase 1: Asaka Leadtown", a sustainable town and community development project</p> <p>[Housing] Received the Excellence Award at the Japan Resilience Awards 2020 for "development and dissemination of energy self-sufficient housing"</p> <p>[Housing] Received the Environment Minister's Award at the 29th Global Environment Awards for "Evacuation at Home" housing</p>
<b>2020</b>	
<p>Set and disclosed a target of zero GHG emissions by FY2050</p> <p>Set goal of converting purchased electricity to 100% renewable energy by FY2030</p> <p>Joined RE100   RE100   CLIMATE GROUP   CDP</p> <p>[Synthetic lumber] Decided to built production plant in Europe for FFU for railway sleepers</p>	<p>Included climate change as a management risk in Securities Report</p> <p>Evolved product evaluation system, from "Environment-Contributing Products" to "Products to Enhance Sustainability"</p> <p>[Town and community development] Sustainable town development Began phase 2 sales for "Higashimatsuyama Leadtown"</p> <p>Received highest rank from Development Bank of Japan's "DBJ Environmentally Rated Loan program"</p> <p>Implemented water risk surveys at business sites to grasp current conditions</p>
<b>2021</b>	
<p>Collaboration with ArcelorMittal, S.A. on R&amp;D of CCU technolog</p> <p>Released resource recycling policies and strategies</p> <p>[Housing] Accelerated nation-wide expansion of "Be Heim" purchasing and resale brand</p> <p>[Housing] Energy-saving information Service received 2021 Energy Conservation Grand Prize, Energy Conservation Center Chairman's Award</p> <p>[Town Development] Received the 30th Global Environment Grand Prize by the Minister of Land, Infrastructure, Transport for "Sustainable Town Development"</p> <p>[Housing] SEKISUI Heim production plant will fully operate using renewable energy, ahead of schedule in FY2022</p>	<p>[Housing] Released "New Smart Power Station FR GREEN MODEL" (Energy self-sufficient housing with new large-capacity storage battery "e-Pocket GREEN")</p>
	
<b>2022</b>	
<p>Started procuring 100% renewable energy electricity at European interlayer film raw material resin production plant</p> <p>[Housing] Released "Grand To You V GREENMODEL" wood construction housing</p> <p>[Adhesives] Released "SF Green Melt™" series of biomass-based adhesive</p> <p>Invested in "Japan Green Investment Corporation for Carbon Neutrality" established by Japan's Ministry of the Environment</p> <p>[Tape] "Selfa" heat-resistant tape receives best paper award at "IMPACT (a national academic conference)"</p> <p>[Heat dissipating materials] Expanded heat release materials business in United States</p> <p>Formed business partnership with Volocopter GmbH, which develops and manufactures advanced air mobility solutions</p> <p>[Tape] Released of heat-resistant automotive tape</p> <p>1.5 °C target for GHG reduction approved by SBT Initiative</p> <p>[PVK] Began verification and joint development related to perovskite solar cells (Tokyo Metropolitan Government, NTT Data, JERA)</p> <p>Successfully converted purchased electricity to 100% renewable energy at 31 sites</p>	<p>[BR] Completed 1/10 scale demonstration plant</p> <p>[BR] Launched new brand "UNISON®"</p> <p>[BR] Started collaborative efforts by 3 companies (Shiseido, Sumitomo Chemical, SEKISUI Chemical)</p> <p>[Town and community development] SEKISUI Heim Resilient and Sustainable Detached Housing Town and Community Development received FY2022 Good Design award</p> <p>[Town and community development] Began large-scale distribution of original vending machines with built-in disaster relief functionality to residential subdivisions, contributing to "Smart and Resilience"</p> <p>Received silver award in environmentally sustainable companies division of "ESG Finance Awards Japan"</p> <p>[Town and community development] Developed Atsugi-No-Oka Leadtown, a community superior in "Smart and Resilience"</p>
<b>2023</b>	
<p>Participated in "Pre-emptive LCA Social Cooperation Research Division" at The University of Tokyo LCA Center for Future Strategy</p> <p>[Fittings] "Eslon Fire-Resistant Plastic AD Coupler HG" registered as CFP product</p> <p>[GC] Selected as NEDO Green Innovation (GI) Fund project "Commercialization of high value-added chemical products using CO<sub>2</sub> as a raw material"</p> <p>[Housing] Formed business partnership with Renoveru to create new circular markets for housing stock</p> <p>[GC] Formed business partnership for commercialization of CCUS (Tokai Carbon)</p> <p>[Housing] Achieved 94% ZEH ratio for new detached housing in FY2022, setting new company record</p>	<p>[Town and community development] Developed Narita Leadtown, a community superior in "Smart and Resilience"</p> <p>Implemented "Drive 2.0" medium-term management plan based on "Vision 2030"</p> <p>Implemented environmental medium-term management plan, backcasting from environmental long-term vision 2050</p>

[Overview] The Group's Board of Directors has made the following final decisions:

- Policies and strategies to mitigate the impact on environmental issues, including climate change, and to expand contributions to solving them.
- The organization's plan (transition plan) to achieve a sustainable society, including transition to a low-carbon economy
- Understanding the impact of environmental issues, including climate change on management, and policies for addressing those issues

Regarding major matters discussed and decided by the Board of Directors, the Sustainability Committee deliberates on policies and strategies in advance, based on company-wide situation regarding environmental issues such as climate change, discussed and summarized by the Environmental Subcommittee. In addition, based on the policies, strategies, and transition plans finalized by the Board of Directors, the Environmental Subcommittee discusses specific measures and goal setting, and manages progress.

### 2-1. Oversight and Execution System for Climate Change and Other Environmental Issues

Under the supervision of the Board of Directors, the magnitude of risks are recognized, appropriate measures are considered, and decisions to implement external environmental issues that may pose management risks such as climate change are made. The below figure shows the supervisory and executive structure that enables the Group to reduce its impact on environmental issues, such as climate change, and to expand its contribution to solving these issues.

#### Board of Directors:

Receives reports on Group-wide risks, policies, and strategies deliberated by the Sustainability Committee, and makes final decisions. Oversees execution of initiatives related to sustainability.

#### Sustainability Committee:

Examines the opportunities and risks of each materiality, including environmental issues such as climate change, and deliberates on policies, strategies, and key measures to improve the

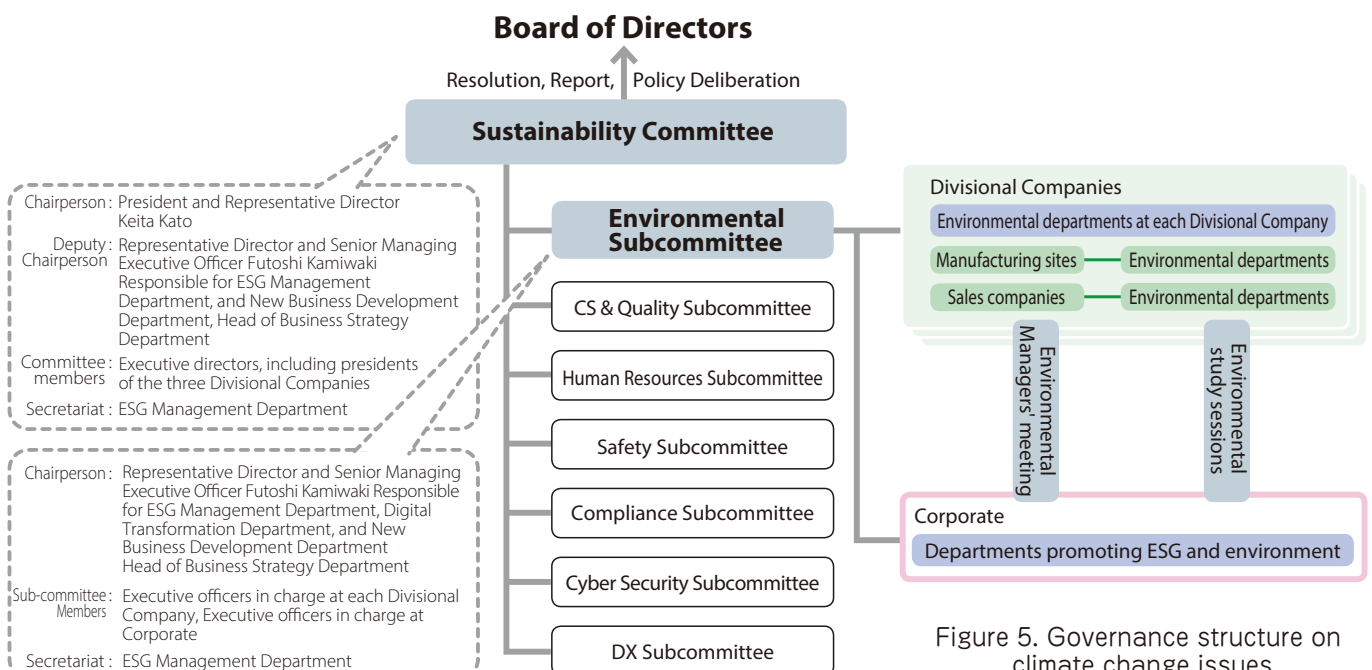


Figure 5. Governance structure on climate change issues

sustainability of society and the Group. (Twice/year)

**Environmental Subcommittee:**

Executive officers and responsible managers in charge of Divisional Companies and Corporate participate in the discussions and manage the

progress of implemented strategies and targets set related to environmental issues, such as climate change, aligned with business strategies. (Twice/year)

**Environmental managers' meeting:**

Set for each key issue, such as renewable energy and resource circulation, and held on a regular basis (once/month).

Managers from the environmental departments at Divisional Companies and Corporate participate to review progress in resolving issues and discuss solutions.

**Table 1: Agenda Related to Climate Change of the Board of Directors and Management Meetings**

Main agenda up to FY2021		
Initiatives for managing supply chain and application for SBT certification	2017	August Management Meeting; September Environmental Subcommittee Meeting
Commitment to support the TCFD	2018	November Management Meeting
Policy to convert purchased electricity to 100% renewable energy by FY2030	2019	November Management Meeting
Medium-Term Management Plan including ESG investment framework	2020	May Board of Directors Meeting
Policies on GHG reductions and use of renewable energy	2021	February Management Meeting
Policies and strategies on resource circulation	2021	March Management Meeting
Agenda for FY2022		
Annual business plan and monitoring progress of ESG management of Divisional Companies	2022	April Board of Directors Meeting
Disclose initiatives in the Annual Securities Report (Risks for businesses, etc.)	2022	May Sustainability Committee Meeting; June Board of Directors Meeting
Strategies for raising GHG reduction targets by 2030	2022	June Management Meeting; July Board of Directors Meeting
Next medium-term management plan	2022	July, October, January 2023 Management Meeting
Next medium-term management plan (ESG management; including climate change and other environmental issues)	2022	September Management Meeting; December Sustainability Committee Meeting; January Board of Directors Meeting
Annual business plan and monitoring progress of ESG management of Divisional Companies	2022	September Management Meeting; October Board of Directors Meeting
FY2023 Guidelines on Group ESG Management Plan, including climate change	2023	January Management Meeting
Annual business plan and monitoring progress of ESG management of Divisional Companies	2023	March Management Meeting; April 2023 Board of Directors Meeting

## 2-2. Monitoring and Incentives on Progress of Action Plans and Target Values for Climate Change and Other Environmental Issues

Progress against action plans and targets, including the organization's plan to achieve a sustainable society, including the transition to a low-carbon economy (transition plan), is managed by the Environmental Subcommittee, which meets twice a year with the participation of the officers in charge of the Divisional Companies and Corporate. The target values and actual values summarized by the Environmental Subcommittee are reported to the Sustainability Committee and the Board of Directors. In addition, various measures to achieve the targets are incorporated into the action plans of each Divisional Company, and a system is in place where the Board of Directors monitors progress every April and October. The Group regards climate change as the most critical issue for the environment, which is an important issue in ESG management. To promote the conversion of purchased electricity to renewable energy in order to reduce

greenhouse gases, the ratio of renewable energy from purchased electricity is set as a Group-wide KPI in the last medium-term management plan (2020 to 2022), and the progress was reflected as bonuses for executives and some managers. Furthermore, the Management Meeting in June 2022 and the Board of Directors Meeting in July made a management decisions to raise the greenhouse gas reduction target for 2030 to the 1.5°C target. In the current medium-term management plan (2023-2025), the GHG reduction rate and material recycling rate (in Japan) are newly adopted as company-wide KPIs, and are reflected in bonuses for directors, executive officers, and some managers, based on Divisional Company-specific performance evaluations, to promote initiatives to accelerate the achievement of carbon neutrality by 2050.

[Overview] An ERM\* system has been structured to identify, share, and manage major company-wide risks within the Group, which, together with other risks that are assumed to have a significant impact on management, are evaluated in a unified manner. Among these, specific Group-wide and individual organizational risks, including environmental issues such as climate change, are shared and deliberated by the Board of Directors, the Sustainability Committee, internal management meetings, and each Subcommittee (as described in Section 3-1).

The Board of Directors shares the view that risks related to environmental issues such as climate change are serious external environmental risks, and the company has positioned them as requiring a medium- to long-term strategies taking into account policies, measures, and transition plans when formulating its management plan, and has developed a medium-term environmental plan (as described in Section 3-2).

\* ERM:

Enterprise Risk Management. This refers to a mechanism and process for Group-wide, integrated risk management and risk management activities.

### 3-1. Integrated Risk Management Including Climate Change and Other Environmental Issues

SEKISUI CHEMICAL Group promotes a risk management system that centrally manages activities to prevent the occurrence of risks (company-wide risk management: ERM) and activities to respond to risks when they materialize (crisis management), and has established a system that can constantly adapt to changing risks and crisis events according to organizational conditions. (Figure 6)

In the management of risks involving environmental issues, such as climate change, risk information is collected comprehensively according to specialized area. Risks related to environmental issues, such as climate change, are collated and assessed by the Environmental Subcommittee and reported to the Sustainability Committee, which is chaired by the President, sub-chaired by the executive director in charge of the ESG Management Department who also serves as the head of the Corporate Business Strategy Department, and composed of executive directors including the presidents of the three Divisional Companies. The committee

deliberates on these issues together with company-wide response policies, key measures, and target achievement levels. The deliberations in the Committee are identified as serious risks by the Board of Directors, and response policies and main measures are then finalized. The identified Group-wide critical risks and their Group-wide countermeasures, as well as major initiatives, are reported to each subcommittee, including the Environmental Subcommittee, in which the directors in charge in the Divisional Companies and Corporate and the persons in charge of implementations participate, and are incorporated into action plans as Group-wide common measures and Divisional Company-specific measures. An ERM system is also being promoted that integrates Group-wide risk management activities with activities of individual organizations by reflecting them in organizational risk management activities by 170 organizations, including domestic and overseas affiliated organizations.



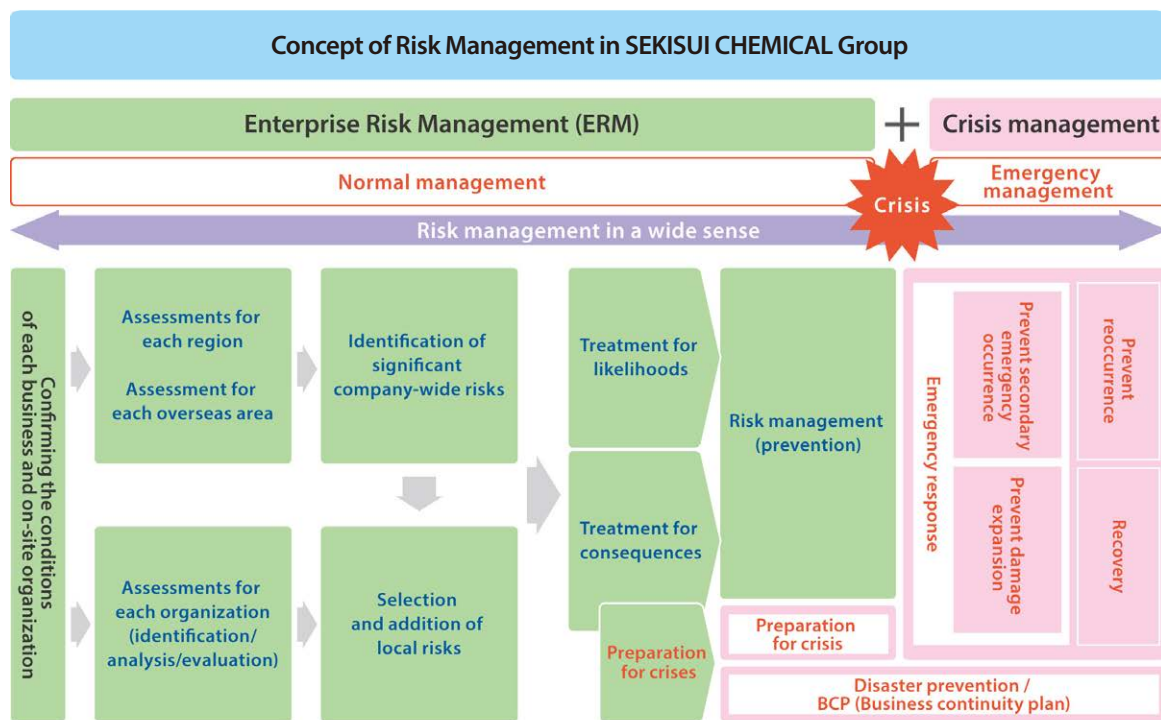


Figure 6. SEKISUI CHEMICAL Group's Risk Management System

### 3-2. Assessment and Management of Risks and Opportunities Related to Climate Change and Other Environmental Issues

As for climate change and other environmental issues, considerations are given as to what can be done to recognize risks and opportunities, and to reduce the risks and transition them into opportunities. Recognizing that climate change is an important external environmental risk, policies and countermeasures were considered to devise the medium-term environmental plan as a medium- to long-term strategy and the Board of Directors approved the environmental plan as part of the management plan. Based on the indicators and targets set to promote this plan, the PDCA cycle will be used to promote action on climate change issues.

The following is a description of the current status and future of the assessment and management of business risks, including climate change, and the assessment and management

of opportunities obtained through action on climate change issues.

#### <Assessment and Management of Business Risks, Including Climate Change>

In recent years, there has been a need to accelerate responses to mitigate and adapt to climate change issues and to strengthen risk assessments from a longer-term perspective. Accordingly, since FY2019, risk assessments have been conducted through scenario analysis.

- FY2019-2020: Adopted 2°C and 4°C scenarios
- FY2021 onwards: Adopted 1.5°C and 4°C scenarios

In FY2021, acceleration was necessary to realize a decarbonized economy. In order to re-strategize, for example, by reviewing the 2030 milestone, a 1.5°C scenario was assumed as a

mitigation scenario, and a re-analysis was conducted.

As a result, the risks presented in the next chapter were recognized, and the measures and business strategies needed to achieve a decarbonized economy were reaffirmed (Chapter 4, Table 3). The contents of the current medium-term management plan (2023-2025) and the medium-term environmental plan reflect these measures and business strategies.

### <Assessment and Management of Opportunities Obtained from Addressing Climate Change Issues>

The Products to Enhance Sustainability Certification Committee\* and the External Advisory Board\* are used to examine the opportunities offered by tackling climate change issues. Discussions with internal committee members and external experts on what contributions can be made with the products and services of the Group, has provided insight into strategies that transform risks into opportunities. These business opportunities are listed in Chapter 4 (Table 3). These contents are shared with the relevant organizations through executive officers or persons in charge of the organization responsible for business planning and technological development at each Divisional Company as necessary, and are utilized in formulating business strategies. In FY2021, strategies regarding resource circulation were devised, which is one of the important initiatives for the decarbonization strategy, and a roadmap was released. As shown in the roadmap, it is important to create products that contribute to resource circulation and expand the market, especially to accelerate efforts to convert plastic, which is the main raw material in the products, into non-petroleum-

derived or recycled raw materials.

For this reason, the contribution of existing products to resource circulation issues were reconfirmed, and in-house criteria for "Products to Enhance Sustainability" have been established so that future product designs can be further considered.

In addition to net sales of registered products, the company-wide KPI for the "Products to Enhance Sustainability" system is net sales of "premium framework" products, which are set to strategically grow products that are both profitable and contribute to solving social issues, and to promote the expansion of both aspects.

The system assesses whether opportunities are being obtained through progress management of these products to enhance sustainability.

\* Certification committee:

A committee to certify products that make a significant contribution to solving environmental and social issues, based on in-house standards. Certifying members are executive officers and other members in charge of key businesses or technologies.

\* External Advisory Board:

A meeting chaired by the director in charge of the ESG Management Promotion Department, where six external experts and the above certification committee members exchange opinions regarding the registration of products to enhance sustainability

## [Overview]

## ■ Scenario analysis

Scenario analyses were conducted to identify potential risks and opportunities that could arise from climate change, and it was confirmed that strategies to reduce risks or to convert risks into opportunities are in place for all scenarios assumed. The scenario analyses also reaffirmed the effectiveness of the strategies as a solution to the issues related to climate change.

Based on the 1.5°C scenario and the 4°C scenario, two axes were set: one axis is whether climate change mitigation progresses or not, and the other axis is the decentralization of social systems in rural areas or concentration in large cities. Furthermore, mutual impacts of other environmental issues with climate change issues were taken into account, and four climate change scenarios were assumed.

Recognizing that environmental issues such as resource circulation, water risk, and biodiversity are related to climate change issues, measures from a broader perspective were reaffirmed. Strategies to re-establish milestones and accelerate efforts to realize a decarbonized economy were reviewed in each scenario, while verifying the validity of these strategies.

Activities based on the three-year medium-term management plan started in 2023. The plan reflects a climate change strategy with transition in mind that will accelerate efforts to achieve a decarbonized economy. The Group will continue to drive corporate activities towards the steady achievement of milestones.

## ■ Validity of the strategies

The following verification were conducted to confirm that the Group's strategies to address climate change issues were appropriate.

- (1) Monitoring carbon efficiency (environmental performance)
- (2) Correlation between carbon efficiency (environmental performance) and economic performance
- (3) Calculation of comprehensive stakeholder income using impact-weighted accounting methods (taking into account impacts on resource circulation and biodiversity).

The amount of greenhouse gas emissions emitted by business activities and the amount of greenhouse gas reduction contributed by products that contribute to solving climate change issues are converted into economic value. As a result, it was confirmed that comprehensive stakeholder income, which takes into account the impact of climate change issues on net income, has more than doubled since fiscal 2016.

Going forward, initiatives using ESG investment framework in financial planning will be promoted so that environmental value can be expanded while achieving both economic and environmental performance.

## 4-1. Recognition of Risks and Opportunities

## &lt;Impact Analysis of Climate Change Risks&gt;

Various international organizations have formulated multiple climate change scenarios that are predicted to occur over the next 100 years. Climate change scenario setting was based on

the UN's IPCC\* Fifth and Sixth Assessment Reports, with the view that they are suitable for identifying the risks that climate change poses to the Group and its operations, and for verifying strategies to prepare for long-term risks.

\*IPCC: Intergovernmental Panel on Climate Change

Table 2. Climate change scenarios

		Societies that have made progress in mitigating climate change	Societies that have failed in mitigating climate change
Reference scenarios	Transition scenarios	IEA NZE2050 IRENA	–
	Physical climate scenarios	RCP1.9 SSP1	RCP8.5 SSP5
Temperature rise		Less than 1.5°C	4°C or higher
Heat waves and torrential rains		Less extreme weather events	Frequent extreme weather events
Socio-economic trends		Growth and equality with a focus on sustainability	Rapid and unlimited growth in economic output and energy consumption
Energy transformation		Reduction of GHG emissions by 70% from energy transformation by 2050	–
Economic events		Increased carbon prices; Increased fuel prices	–
Risks	Regulatory risks	Large	Small
	Physical risks	Small	Large

Based on the climate change scenarios set, impacts of climate change risks were analyzed and strategies were considered to prepare for long-term risks for each business domain. Scenarios are analyzed based on the primary assessments conducted by exchanging opinions with relevant company departments, external experts, and in-house and external think tanks. In the analysis, transition and physical risks were identified based on the two climate change scenarios, considering the size of net sales, operating income, profit margins, and growth potential of the business domains (residential, advanced infrastructure, innovative mobility, life science, and energy as the next frontier) that will strategically be grown toward 2030. Based on the 1.5°C scenario and the 4°C scenario, two axes were set; one axis is whether climate change mitigation progresses or not, and the other axis is decentralization of social systems in rural area or concentration in large cities. Four climate change scenarios were envisaged taking into account the mutual impact of other environmental issues with climate change issues.

Climate change and other environmental issues such as resource circulation, water risks, and biodiversity (aspects of nature) are interrelated

and have causal relationships with each other. Also, it is believed that there needs to be consideration and solutions to each of these issues that do not involve trade-offs. Therefore, the response measures were reconfirmed as it was necessary to analyze how the identified risks relate to each environmental issue. Table 3 shows the results of the review on risk impact analysis and integration of possible risks in each business domain. Negative impacts that have significant financial impacts to the Group are considered as risks, and positive impacts are seen as opportunities. In the 1.5°C scenario, social changes including the impact on other environmental issues are expected to become more significant than the 2°C scenario. Taking this into consideration, each scenario is reset and analyzed. The results reaffirm the effectiveness of solutions to the resource circulation challenge as a solution to the climate change crisis. It was also confirmed that solutions that also take into account the impact on biodiversity are more likely to convert risks into opportunities, and that it is essential to promote innovation, such as the development of new materials and technologies.

Table 3. Results of impact analysis of climate change risks

Green: New revisions in line with updating to the 1.5 °C scenario

**Bold: Innovation-related items**

						Correlation analysis of environmental issues				
Type	Climate change risks	Financial Impacts	Business risks	Business opportunities	Response / Actions by SEKISUI	Climate Change	Resource Circulation	Water Risks	Biodiversity	
Transition	Policy regulations	Carbon tax increase	Large	<Medium- to long-term> ·Increase in energy procurement costs ·Decrease in sales due to adding costs to product prices	<Medium- to long-term> ·Acquire business opportunities by differentiating through early response ·Stabilization of energy costs by introducing renewable energy	·Develop plans to promote converting purchased power to renewable energy, using ESG investment framework ·Improve effectiveness through public commitments such as SBT certification	Mitigation	—	—	—
		Regulations for energy savings/ low carbon	Large	<Short-term> ·Increase in capital investment to strengthen energy conservation and renewable energy initiatives <Medium- to Long-term> ·Increase in introduction costs for renewable energy certificates, etc.	<Short term> ·Increased sales from energy conservation/storage/ creation businesses ·Increased sales from CO <sub>2</sub> -regulation compliant products	·Establish ESG investment framework (40 billion yen/3years) · <b>Develop new energy creation technologies (e.g., perovskite solar cells)</b> ·Review green procurement standards as appropriate ·Standardize housing with ZEH specifications	Mitigation	—	—	—
		Policies	Large	<Short-term> ·Increase in renewable energy procurement and waste treatment costs <Medium- to long-term> ·Lose market share from loss of differentiation due to mandating of low-carbon products such as ZEH ·Reduction of business opportunities due to stricter laws and regulations related to resource recycling	<Short-term> ·Increased need for technologies to reduce CO <sub>2</sub> during waste incineration <Medium- long-term> ·Increase in sales of new homes due to expansion of ZEH market due to from mandatory ZEH specs ·Expanding opportunities for horizontally recycled products such as in-house and industry-wide collection	· <b>Develop technology for creating ethanol from garbage (e.g., BR)</b> ·Use purchased power after FIT (e.g., Smart Heim Denki) ·Expand products that enhance sustainability · <b>Consideration of expanding horizontal recycling of in-house plastic products (e.g., KYDEX buyback system, etc.)</b> · <b>Development of services to improve the recycling value of housing products (e.g., Be-Heim)</b>	Mitigation	Disposal	—	Living organisms
			Large	<Short-term> ·Increase in renewable energy procurement and waste treatment costs <Medium- to long-term> ·Lose market share from loss of differentiation due to mandating of low-carbon products such as ZEH ·Reduction of business opportunities due to stricter laws and regulations related to resource recycling	<Short-term> ·Increased need for technologies to reduce CO <sub>2</sub> during waste incineration <Medium- long-term> ·Increase in sales of new homes due to expansion of ZEH market due to from mandatory ZEH specs ·Expanding opportunities for horizontally recycled products such as in-house and industry-wide collection	·Use purchased power after FIT (e.g., Smart Heim Denki) ·Expand products that enhance sustainability · <b>Consideration of expanding horizontal recycling of in-house plastic products (e.g., KYDEX buyback system, etc.)</b> · <b>Development of services to improve the recycling value of housing products (e.g., Be-Heim)</b>	Mitigation	—	—	—
			Medium	<Medium- to Long-term> ·Lawsuits against companies using fossil fuels	<Medium- long-term> ·Increase in business opportunities due to consumer trust earned from commitments to society	·Disclose environmental vision and 2050 GHG emissions reduction targets ·Improve scores in various external benchmarking systems	Mitigation	All	—	—
	Technologies	Replacement to low carbon products	Large	<Short-term> ·Increase in re-certification costs due to change of low- carbon materials <Medium-term> ·Changeover to lower carbon materials and processes	<Short- to medium-term> ·Increase in business opportunities for products that enhance sustainability that contribute to low carbonization <Long-term> ·Business expansion through prioritized procurement of resource recycling friendly designed products	·Use of LCA in planning, development and marketing (CFP, environmental impact other than climate change) ·Use of "learn from nature" technologies and continuation of researcher subsidies ·Promotion of renewable energy in factories (e.g., Smart Heim Denki) ·Reduction of factory waste and acceleration of resource recycling · <b>Product development using bio-derived materials</b> · <b>Product development using recycled materials and increasing their use</b>	Mitigation	All	—	All
		Development of decarbonization technology	Large	<Medium- long-term> ·Opportunity loss due to delay in introduction of decarbonization technologies	<Medium- long-term> ·Expand business opportunities by decarbonizing products ·Creation of new businesses utilizing decarbonization technologies	· <b>Development of CCU technologies in collaboration with different industries (e.g., collaboration with ArcelorMittal, S.A.)</b>	Mitigation	Disposal	—	—
			Medium	<Long-term> ·Decrease in sale of new cars ·Opportunity loss due to inability to recycle resources and use decarbonization incentives	<Medium-term> ·Acquisition of incentives through resource recycling and visualization of decarbonized value <Long-term> ·Increase in profitability from shift to higher-performance products ·Expansion of market for ICT-related products	·Efforts to improve resource recycling value through industry collaboration (e.g., CLOMA (for marine plastic issues)) · <b>Development of highly heat resistant and durable, and other high performance products</b> · <b>Development of lightweight solar cells, heat dissipating products</b>	Mitigation	Use	—	Living organisms
	Markets	Change in consumer behavior	Medium	<Long-term> ·Investments to stabilize power supply for dispersed renewable energies	<Long-term> ·Increase in sales of products to support a more dispersed society	·Sales of houses that realize energy self-sufficiency · <b>Development of resource recycling technologies (e.g., BR, mat'l waste recycle)</b>	Mitigation	—	—	Living organisms
		Market uncertainty	Medium	<Short- to medium-term> ·Sales decline due to inability to keep up with sustainable lifestyle preferences <Long-term> ·Decrease in sales due to increased preference for "sharing" over "owning"	<Short- to medium-term> ·Improve corporate brand and expand sales with products that support sustainable living <Long-term> ·Creation of new businesses to meet consumer preferences	·Promotion of sustainable town development business(e.g., ABINC certification of Asaka Lead Town) ·Begin services using housing big data (e.g., Smart Heim Denki)	Both	All	Products	All
	Reputation	Changes in consumer preferences	Medium	<Medium- to long-term> ·Investor valuation decline for companies that do not decarbonize <Long-term> ·Decline in evaluation of companies that do not understand the biodiversity impact of decarbonization solutions	<Short- to medium-term> ·Secure stable financing by demonstrating compatibility with resource circulation <Long-term> ·Consideration of nature-positive decarbonization solutions and high evaluation for product development	·Use of renewable energy by purchasing electricity after FIT ·Promotion of reform and use of in-house system for planning and R&D (product environmental impact assessment) ·Promotion of efforts to reduce the impact of nature and information disclosure (e.g., use of Land Use Score Card®)	Mitigation	—	—	—
		Industry criticism	Large	<Short-term> ·Increase in damage such as plant shutdowns and sales decrease ·Increase in costs to control flooding and overflows ·Decrease in sales due to supply chain disruption <Medium- to Long-term> ·Increase in insurance premiums	<Short-term> ·Increase in needs for resilient infrastructure ·Increase in sales of products in areas with a high level of water-related risks ·Increase in needs for equipment/facilities for disaster preparedness	·Understand water risks and implement countermeasures · <b>Development of highly durable infrastructure</b> ·Accelerate infrastructure renewal in developed nations (e.g., SPR Method) ·Expand infrastructural business in developing nations · <b>Development of disaster response products (e.g., drinking water storage systems)</b> ·In-house fusion mechanism for adaptive product development, task force projects	Mitigation	—	Business	—
Medium			<Short-term> ·Increase in costs for restructuring supply chain <Medium- to long-term> ·Increase in heat stroke/other illnesses related to warming ·Increase in air conditioning/cooling costs	<Short-term> ·Increase in sales of heat insulating/heat shielding products <Medium- to long-term> ·Increase in needs for pharmaceutical products/ diagnostic drugs that contribute to treatments	·Globally disperse production bases ·Reinforcement of OEM structure in accordance with increase in illnesses	Mitigation	—	Business	—	
Physical	Acute	Frequent typhoons	Large	<Short-term> ·Increase in damage such as plant shutdowns and sales decrease ·Increase in costs to control flooding and overflows ·Decrease in sales due to supply chain disruption <Medium- to Long-term> ·Increase in insurance premiums	<Short-term> ·Increase in needs for resilient infrastructure ·Increase in sales of products in areas with a high level of water-related risks ·Increase in needs for equipment/facilities for disaster preparedness	·Understand water risks and implement countermeasures · <b>Development of highly durable infrastructure</b> ·Accelerate infrastructure renewal in developed nations (e.g., SPR Method) ·Expand infrastructural business in developing nations · <b>Development of disaster response products (e.g., drinking water storage systems)</b> ·In-house fusion mechanism for adaptive product development, task force projects	Adaptation	—	Business	—
		Heavy rains/ droughts	Large	<Short-term> ·Increase in damage such as plant shutdowns and sales decrease ·Increase in costs to control flooding and overflows ·Decrease in sales due to supply chain disruption <Medium- to Long-term> ·Increase in insurance premiums	<Short-term> ·Increase in needs for resilient infrastructure ·Increase in sales of products in areas with a high level of water-related risks ·Increase in needs for equipment/facilities for disaster preparedness	·Understand water risks and implement countermeasures · <b>Development of highly durable infrastructure</b> ·Accelerate infrastructure renewal in developed nations (e.g., SPR Method) ·Expand infrastructural business in developing nations · <b>Development of disaster response products (e.g., drinking water storage systems)</b> ·In-house fusion mechanism for adaptive product development, task force projects	Adaptation	—	Business	—
	Chronic	Changes in rainfall patterns	Medium	<Short-term> ·Increase in damage such as plant shutdowns and sales decrease ·Increase in costs to control flooding and overflows ·Decrease in sales due to supply chain disruption <Medium- to Long-term> ·Increase in insurance premiums	<Short-term> ·Increase in needs for resilient infrastructure ·Increase in sales of products in areas with a high level of water-related risks ·Increase in needs for equipment/facilities for disaster preparedness	·Understand water risks and implement countermeasures · <b>Development of highly durable infrastructure</b> ·Accelerate infrastructure renewal in developed nations (e.g., SPR Method) ·Expand infrastructural business in developing nations · <b>Development of disaster response products (e.g., drinking water storage systems)</b> ·In-house fusion mechanism for adaptive product development, task force projects	Adaptation	—	Business	—
Rise in sea level		Medium	<Short-term> ·Increase in damage such as plant shutdowns and sales decrease ·Increase in costs to control flooding and overflows ·Decrease in sales due to supply chain disruption <Medium- to Long-term> ·Increase in insurance premiums	<Short-term> ·Increase in needs for resilient infrastructure ·Increase in sales of products in areas with a high level of water-related risks ·Increase in needs for equipment/facilities for disaster preparedness	·Understand water risks and implement countermeasures · <b>Development of highly durable infrastructure</b> ·Accelerate infrastructure renewal in developed nations (e.g., SPR Method) ·Expand infrastructural business in developing nations · <b>Development of disaster response products (e.g., drinking water storage systems)</b> ·In-house fusion mechanism for adaptive product development, task force projects	Adaptation	—	Business	—	

The "Financial Impacts" in the table were evaluated in three categories: large, medium, and small, in light of the magnitude of the impact on related financial indicators. The time frame for risks and opportunities to materialize is classified into three levels:

short-term (less than 3 years), medium-term (3 to less than 6 years), and long-term (6 years or more). Additionally, changes in risk analysis and responses due to the use of the 1.5°C scenario are shown in green (Table 3).

## 4-2. Scenario Analysis (Risks and Opportunities)

### <Methodologies and Results of Scenario Analysis>

In the scenario analysis, several driving forces were extracted that were predicted to affect the future of each business domain (residential, advanced infrastructure, innovative mobility, life science, and energy as the next frontier) and set up future scenarios with attention to driving forces that were assumed to have a large impact on the Group when future uncertainties were taken into account.

For example, in innovative mobility, a society in which vehicles with zero CO<sub>2</sub> emissions (ZEV: Zero Emission Vehicles) are the mainstream and another society dominated by conventional internal combustion vehicles as one of the driving forces, were considered. An axis was then set to study a scenario in which climate change has been mitigated, and another one in which climate change has advanced. In the area of advanced infrastructure, it was assumed that the evolution of a recycling-oriented society can

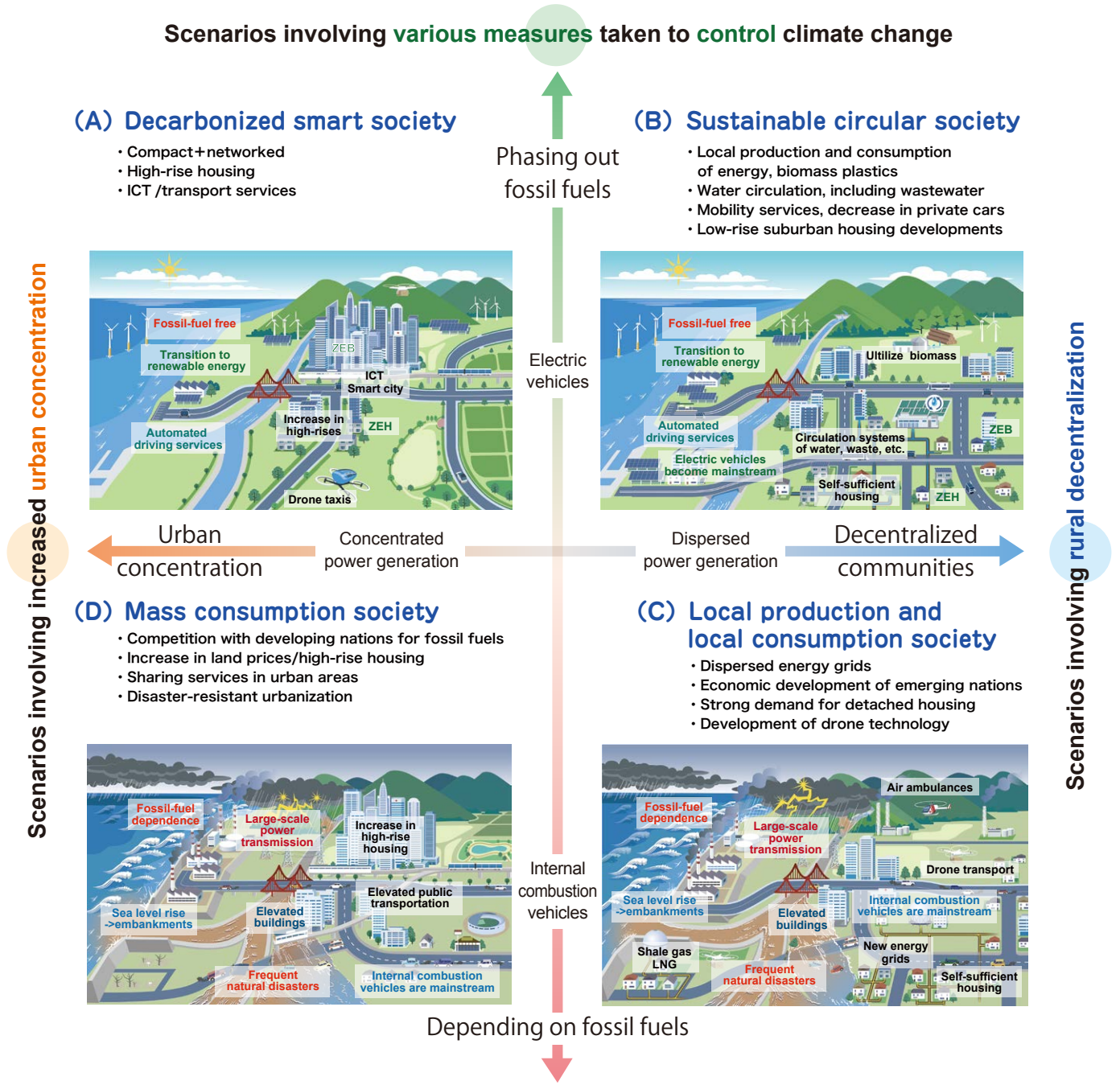
be a driving force, so one axis was set as whether the society will be a "recycling use" society or an "emission and disposal" society, and another axis as a scenario in which climate change has been mitigated and another in which climate change has advanced.

Then, scenario analysis results around driving forces that were determined to be highly common in the Group's business fields were integrated. The results are shown in Figure 7. The axis with high commonality is the driving force to determine whether social systems such as town design and energy will become "centralized" (urban concentration and centralized management) or "decentralized" (local production and local consumption). Additionally, as for climate change scenarios, a scenario with advanced mitigation of climate change and a scenario with advanced climate change as another scenario axis were set, and assumed four scenarios related to the future of the Group's businesses in the four quadrants.

## 1.5°C scenario

Tightened carbon tax / exhaust gas regulations, accelerated resource circulation, reduced water risk, mitigated impacts on aspects of nature

### Scenarios involving various measures taken to control climate change



Depending on fossil fuels

### Scenarios involving preparation for higher temperatures and frequent disasters due to climate change

## 4°C scenario

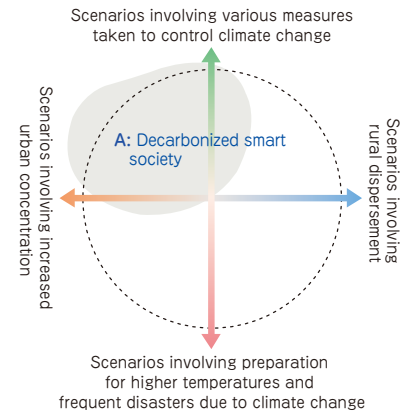
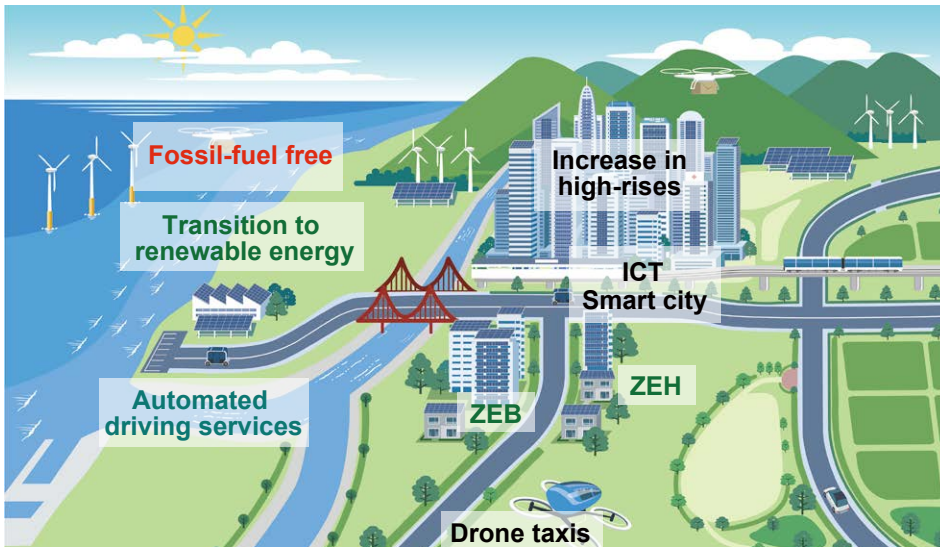
Frequent natural disasters, delayed resource circulation system, increased water risks, increased negative impact on nature

Figure 7: Four Scenario Societies

Societies based on each of the four scenarios have been illustrated and show in Figure 7. The following is a summary of the results of the analysis of possible risks and opportunities for

the Group in these possible societies and the Group's strategy to adapt if the society depicted in each scenario is realized.

**Scenario (A)**  
Decarbonized smart society scenario (1.5°C & urban concentration scenario)



**Opportunities**

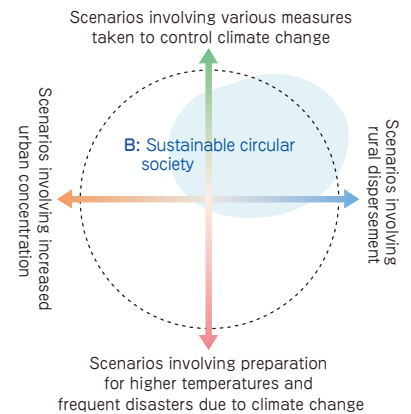
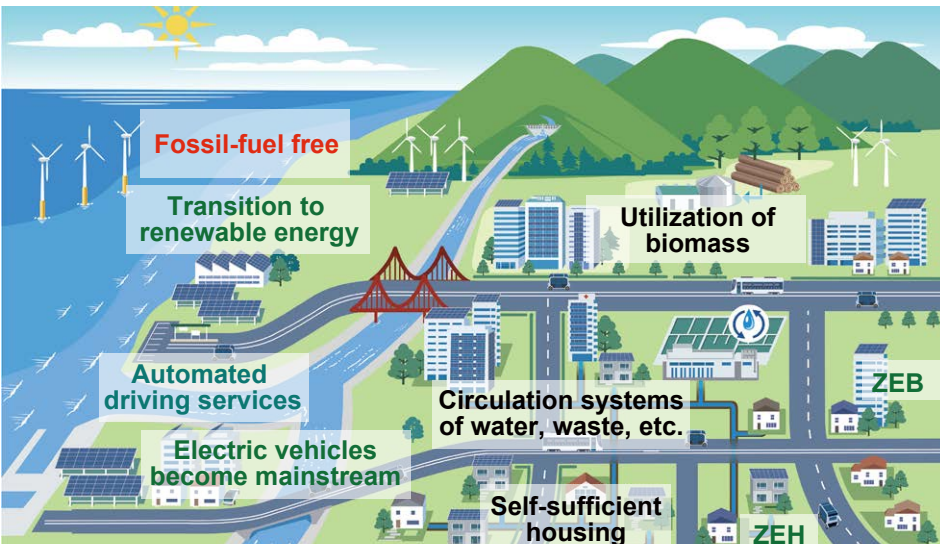
- Increased demand for smart infrastructure, remote control systems, etc. → Advanced technology utilization and expand services for infrastructure
- Increased demand for power generation/storage products → Higher performance of electronic/energy related products
- Expanding needs for decarbonized products and technologies → Advance development of decarbonization technologies and expand products sales

**Risks**

- Decreased car sales due to transition to mobility services → Decreased sales of housing and mobility related products
- Accelerate conversion to renewable energy → Energy procurement costs increase due to increased demand for renewable energy
- Decreased demand for low-rise housing → Decreased sales of housing related products

**Response by SEKISUI** [Production activities] Begin converting to renewable energy (installation of large-scale solar panels (USA), use of Smart Heim Denki)  
 [Housing business] Standardize ZEH specs  
 [Energy] Expand storage battery business  
 [IT] Material development to promote improvement of ICT(heat dissipating materials, materials for LED and OLED)  
 [Resource Recycling] Development of services to improve the recycling value of housing products ("Be-Heim"), consideration of expansion of horizontal recycling system for plastic products

**Scenario (B)**  
Sustainable circular society scenario (1.5°C & decentralized communities scenario)



**Opportunities**

- Localized power generation → Increased demand for power generation, storage and related technologies
- Expanded circulation of resources such as electric power, water, carbon, etc. → Increased demand for circulation infrastructure
- Expanding needs for decarbonized products and technologies → Advance development of decarbonization technologies and expand product sales expansion
- Increased demand for housing with ZEH specs

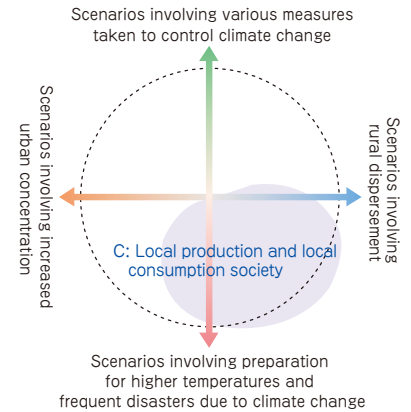
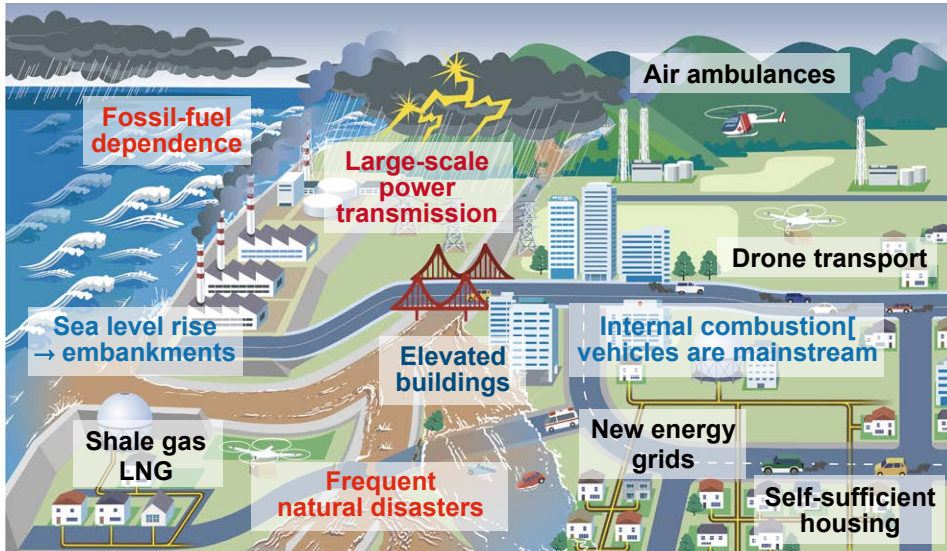
**Risks**

- Decreased car sales due to transition to mobility services → Decreased sales of housing and mobility related products
- Accelerate conversion to renewable energy (decentralized) → Energy procurement costs increase due to increased demand for renewable energy
- Decreased reputation among customers and investors due to failure to decarbonize

**Response by SEKISUI** [Production activities] Begin converting to renewable energy (installation of large-scale solar panels (USA), use of Smart Heim Denki)  
 [Housing business] Standardization of ZEH specs, expansion and promotion of sustainable town development business  
 [Energy] Promote the spread of energy self-sufficient housing (solar panels, storage batteries)  
 Also contribute to local energy production and consumption through TEMS  
 [Vehicles] Provide highly functional materials that provide additional performance to vehicles and aircrafts.  
 (S-LEC wedge-shaped HUD interlayers, KYDEX sheets, CFTRP)  
 · Establish technologies for CCU systems (BR)  
 [Resource recycling] Full scale implementation of BR technology, development of CCU technologies in collaboration with other companies



**Scenario (C)**  
**Local production and local consumption society scenario (4°C & decentralized communities scenario)**



**Opportunities**

- Promoting resilient infrastructure and autonomous driving infrastructures → Increased sales of highly durable infrastructure materials and construction services
- Creation of market of new energy grids → Needs for control systems and energy infrastructure technologies

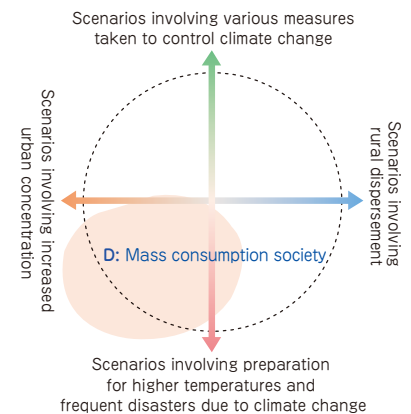
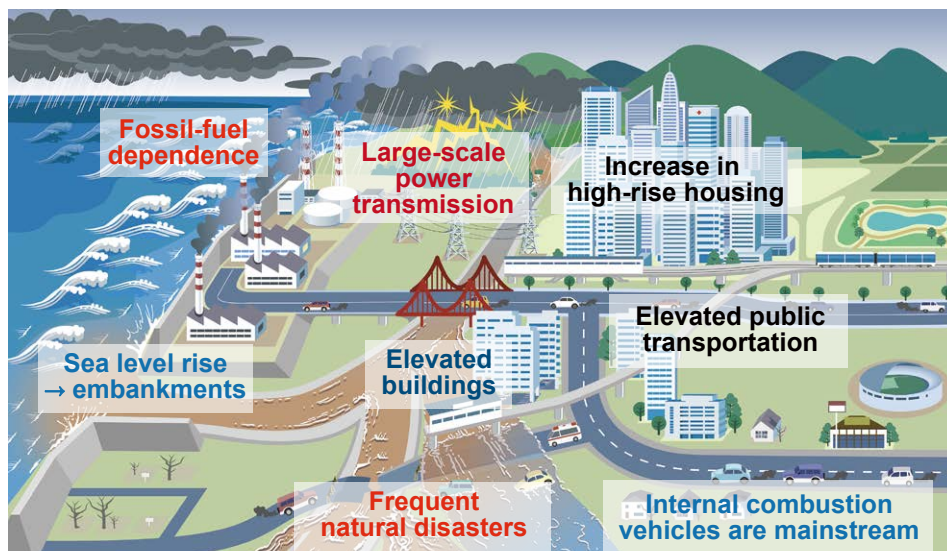
**Risks**

- Increased raw material and energy costs due to disaster-resilient supply chain, logistics, and energy security measures
- Increased factory relocation costs in locations vulnerable to natural disasters
- Increased manufacturing costs and raw material costs caused by deterioration of ecosystem services due to disasters
- Increased human cost due to increase in diseases caused by global warming
- Extensive damages due to fragmentation of infrastructure in the area

**Response by SEKISUI**

- At the managers level of operating companies/business sites, understand risks in each region and site, formulate BCPs, and consider risk reduction measures
- [Water infrastructure] Expand businesses that contribute to more resilient water infrastructure  
(Renewal: SPR method, New construction: Collaboration with Vietnamese companies)
- [Transportation infrastructure] Improve durability of transportation infrastructure ("Utsuku Sheet", "InfraGuard")
- Reinforcement of OEM structure for pharmaceutical products
- Explore HEMS and TEMS technology for building smart grids (Smart Heim Denki)
- Develop urban planning businesses (expand services)
- Reinforce sustainable raw material procurement system

**Scenario (D)**  
**Mass consumption society scenario (4°C & urban concentration scenario)**



**Opportunities**

- Promoting resilient infrastructure and autonomous driving infrastructures → Increased sales of highly durable infrastructure materials and construction services
- Increased needs for energy-related products for large-scale power generation
- Increased sales of products related to stabilizing systems and improving efficiency of power generation

**Risks**

- Increased raw material and energy costs due to disaster-resilient supply chain, logistics, and energy security measures
- Increased factory relocation costs in locations vulnerable to natural disasters
- Increased human cost due to increase in diseases caused by global warming
- [Housing] Decreased demand for low-rise housing → Decreased sales of housing related products
- Increase in manufacturing costs and raw material costs caused by deterioration of ecosystem services due to disasters

**Response by SEKISUI**

- At the managers level of operating companies/business sites, understand risks in each region and site, formulate BCPs, and consider risk reduction measures
- [Water infrastructure] Expand businesses that contribute to more resilient water infrastructure  
(Renewal: SPR method, New construction: Collaboration with Vietnamese companies)
- [Transportation infrastructure] Improve durability of transportation infrastructure ("Utsuku Sheet", "InfraGuard")
- Reinforcement of OEM structure for pharmaceutical products
- Contribute to more stable power transmission by burying power cables underground ("CC-Box")
- Reinforce sustainable raw material procurement system

### <Summary of Scenario Analysis>

The Group's housing and infrastructure-related products are all designed with resilience and are highly durable and resistant to disasters. In the 4°C scenarios (C) and (D) assumed in the scenario analysis described in Section 4-2, these products with high durability or provide reinforcement to aging infrastructure can contribute to the solution of issues and expand businesses. In the 1.5°C scenarios (A) and (B) where mitigation of climate change is pursued, demand for renewable energy will increase even more, regulations will be tightened, and changes in consumer preferences will become more apparent. In addition, it is expected that resource circulation efforts will be accelerated and economic values will become apparent. It is believed that solving issues and capture business opportunities can be contributed to through ever more ambitious efforts to curb GHG emissions, solar-equipped homes to boost the shift to renewable energy, new energy-creating technologies, and the development of

materials to make vehicles and aircraft more energy-efficient.

In such societies, it was naturally thought that water risks and impacts on biodiversity (aspects of nature) would also be mitigated.

In addition to climate change, there are uncertain factors in the technological development in various industries. In both cases, preparation is confirmed and also ready to transform and risks into opportunities, whether in the development and enhancement of products for the risks assumed in the case of increased urban concentration, or in the technologies required in the case of increased population decentralization.

It is anticipated that lifestyles will change drastically and will change even more significantly from the effects of the COVID-19 pandemic. In this regard, even under such circumstances, analysis of risks and opportunities in the scenarios considered can be utilized.

### 4-3. Validation of Climate Change Strategies

The following verification were conducted to confirm the validity of our strategy in response to climate change issues.

- (1) Monitoring carbon efficiency (environmental performance)
- (2) Correlation between carbon efficiency (environmental performance) and economic performance
- (3) Stakeholders' comprehensive income using impact-weighted accounting methodology (factoring in the impact on resource circulation and biodiversity)

#### <(1) Monitoring Carbon Efficiency (Environmental Performance)>

In order to verify how efforts that address climate change are affecting management, two indicators of carbon efficiency management (environmental performance) have been monitored: "(i) Net sales per GHG emissions", and "(ii) Earnings (EBITDA) per GHG emissions".

Figure 8 (a) shows the carbon efficiency in business activities, and Figure 8 (b) shows the carbon efficiency across the supply chain. In the previous medium-term management plan (2020-2022), both (i) and (ii) show an increasing trend, even when looking at business activities and the supply chain as a whole.

Looking at the supply chain as a whole over a long time span, there has been a temporary decline in FY2020, however it is believed that this is mainly due to the global COVID-19 pandemic. The transition to renewable energy during the previous medium-term management plan has also been successful in terms of (ii)

Earnings (EBITDA) per unit of GHG emissions in business activities. Through this verification, it was confirmed that efforts to address climate change issues are having a positive impact on management.

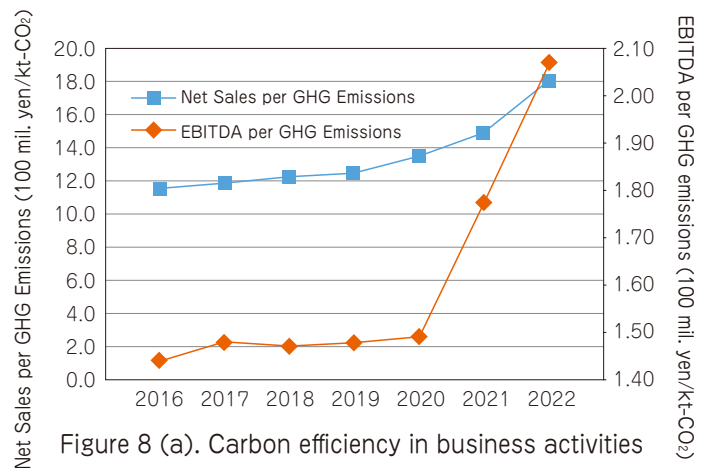


Figure 8 (a). Carbon efficiency in business activities  
\*Business activities: Scope 1+2+Transportation

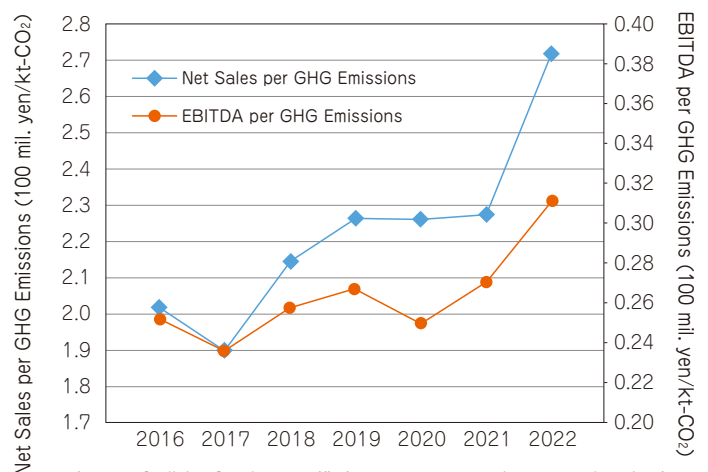


Figure 8 (b). Carbon efficiency across the supply chain

[Reference] Calculation methods of the two indicators  
 Net sales/GHG emissions  
 (net sales per carbon = 100 mil. yen/kilotons-CO<sub>2</sub>)  
 EBITDA/GHG emissions  
 (earnings per carbon = 100 mil. yen/kilotons-CO<sub>2</sub>)  
 [Reference] EBITDA = Earnings Before Interest, Taxes, Depreciation and Amortization

### <(2) Correlation Between Carbon Efficiency (Environmental Performance) and Economic Performance>

The impact of initiatives on management to address issues related to climate change was further examined by confirming the correlation between "(i) net sales per unit of GHG emissions", an indicator of management's carbon efficiency (environmental performance), and "(ii) earnings per unit of GHG emissions (EBITDA)", an indicator of management's economic performance. The actual values of the two indicators in business activities from FY2016 to FY2022 are plotted in Figure 9, along with the target based on the FY2030 long-term vision. In the previous medium-term management plan (2020-2022), ESG management was used as a strategy to improve "net sales per unit of carbon" while maintaining stable earnings.

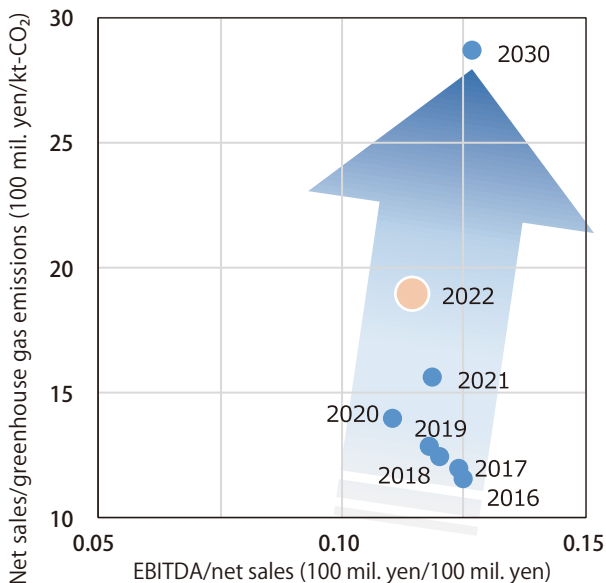


Figure 9. Correlation between Carbon Efficiency (Environmental Performance) and Economic Efficiency of Business Activities

The results of this verification suggest that the strategies being pursued based on the long-term vision for 2030 tested correctly. In the current medium-term management plan (2023-2025), efforts will be further accelerated to achieve the vision for FY2030 and promote initiatives to achieve corporate growth that is both economically and environmentally sound.

### <(3) Stakeholder Comprehensive Income Using Impact-Weighted Accounting Methodology>

Climate change is affecting the entire earth. Initiatives to address climate change are thought to affect not only the Group's shareholders, but also multiple stakeholders such as customers, business partners, employees, and local communities. Therefore, in order to verify the validity of the strategies, it is necessary to consider the impacts on multiple stakeholders from a bird's eye view and comprehensive perspective, and the multi-stakeholder comprehensive income was calculated using impact-weighted accounting method.

Impact-weighted accounting refers to the concept of integrating accounting and impacts by converting the impacts of corporate activities on stakeholders as a whole into monetary values and adding or subtracting them from profits, thereby ascertaining the corporate value for stakeholders as a whole. In this validation, comprehensive earnings were calculated using the following calculation method. LIME2 concept was adopted when converting economic losses on environmental aspects into economic values.

[Calculation Method]

Stakeholder Comprehensive Income =  
 (Profit for the period + Value of employment  
 created to implement climate change initiatives  
 + Economic values of contribution to the  
 reduction of greenhouse gas emissions from  
 products + Economic values of effects on  
 environmental aspects other than climate  
 change issues from products) - (Economic  
 losses from greenhouse gas emissions from  
 business activities + Economic losses from  
 environmental aspects other than climate  
 change issues from business activities)

Figure 10 (a) shows how the ratio of stakeholder comprehensive income to net income has changed since the baseline year of 2016, using impact-weighted accounting.

Despite changes in the surrounding environment, corporate activities in response to

these changes have more than doubled stakeholder comprehensive income against net profit since FY2016. This confirms that the company is steadily generating corporate value other than that indicated in the financial statements

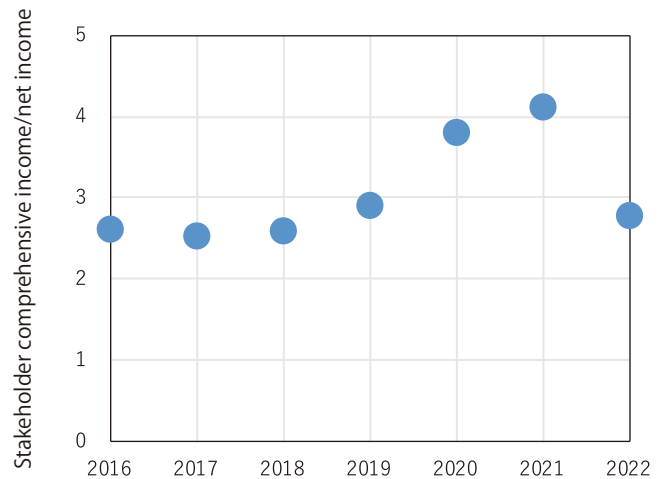


Figure 10 (a). Stakeholder comprehensive income against net income

Furthermore, Figure 10 (b) shows the positive and negative impacts at each stage of the products' life cycle. In FY2022, the following two impacts on society of the initiatives based on the resource circulation strategy released in FY2021 were also visualized and added to the comprehensive benefits to multi-stakeholders.

- Value of reducing environmental impact through resource use associated with resource conversion
- Value of reducing environmental impact through waste recirculation process

In addition to the values determined by the financial indicators, it was possible to recognize where the positive impact on multiple stakeholders is occurring and where the negative impact on the external environment is

occurring, by performing the impact-weighted analysis separately for each process of the product's life cycle.

<Summary of Validation>

Based on the above analysis, it was reaffirmed that the initiatives and planned measures that are currently being implemented are expanding the positive impact, reducing the negative impact, and contributing to the enhancement of corporate value. In order to solve issues related to climate change in the future, strategies will be developed and measures implemented for each process in the product's life cycle so that the positive impacts can be further expanded and the negative impacts can also be further reduced.

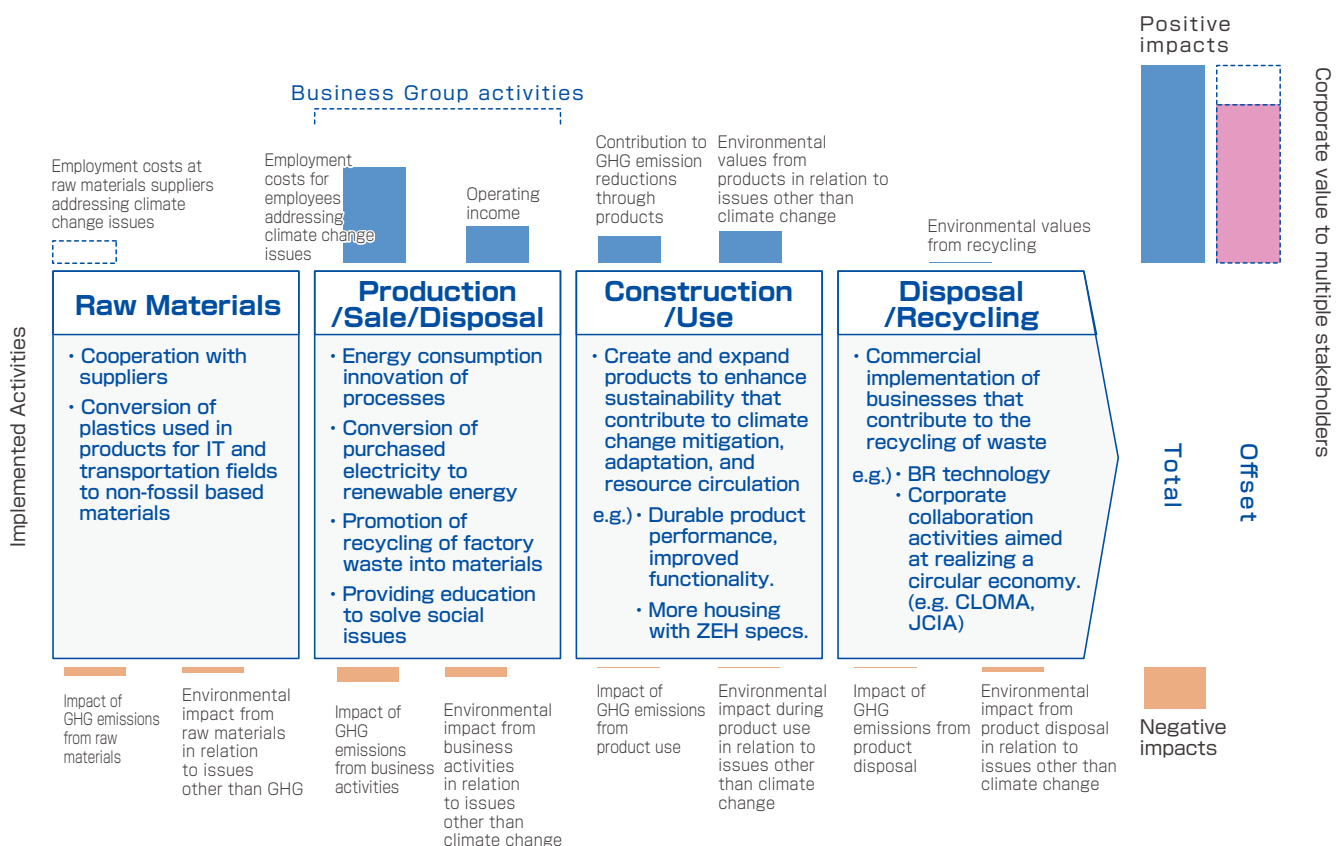


Figure 10 (b). Details of positive and negative impacts on corporate value over the life cycle of products using impact-weighted accounting methods

#### 4-4. Impacts of Risks and Opportunities Related to Climate Change on the Organization's Businesses, Strategies, and Financial Planning

##### <Impacts of Climate Change on Businesses and Strategies>

The risks posed by climate change can also be opportunities. SEKISUI CHEMICAL Group formulates strategies and plans to address medium- to long-term climate change risks in order to reduce and convert these risks into

opportunities for products and services, supply or value chains, R&D investments, and operations. In addition, efforts based on these strategies will lead to the improvement of corporate value and comprehensive earnings are explained in Section 4-3.

Examples are shown below for each item.

[Reference] Case study: Example of Risk Reduction and Conversion to Opportunities in Climate Change [Resource Circulation Policy and Strategy]

Promoting resource circulation efforts will accelerate decarbonization efforts. In FY2020, SEKISUI CHEMICAL Group established a policy on resource circulation along with long-term targets, and formulated a resource circulation strategy with a roadmap. This is an important strategy to shift products to lower their carbon footprint throughout their life cycle to contribute to mitigating climate change. The resource circulation strategy and roadmap are laid out below.

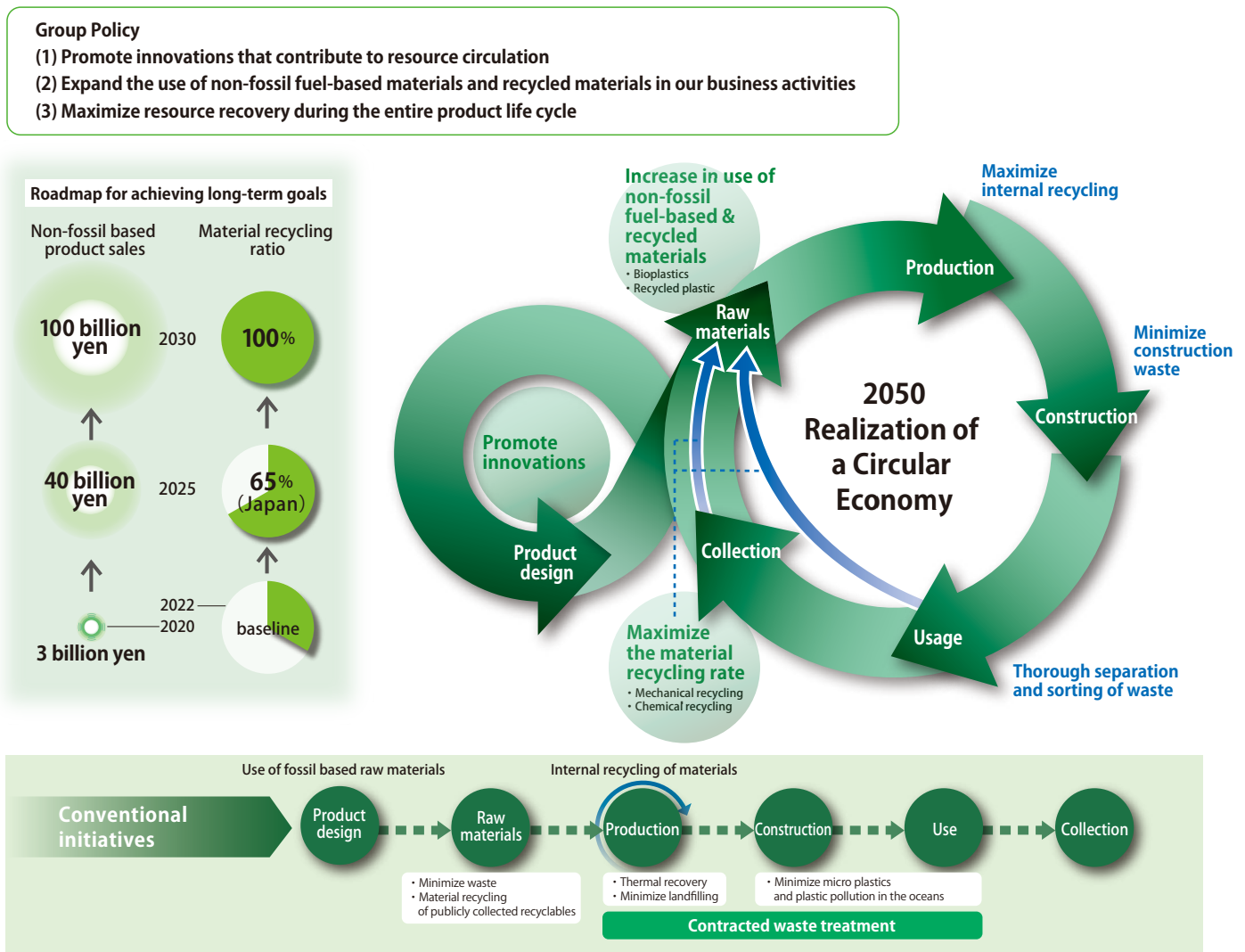


Figure 11. Outline of resource circulation strategy

Table 4. Roadmap for achieving long-term resource circulation targets

		2020-2022	By 2025	By 2030
Business strategy	Net sales of products to enhance sustainability that contribute to resource circulation (Base year:2020)	1.1 times	1.7 times	2 times or more
Raw material resource conversion	Net sales of products not derived from fossil fuels and using recycled materials	3 billion yen	40 billion yen	100 billion yen
Recycling waste products	Rates for recycling waste plastic into new materials	Analyze current conditions and set baselines	65% (Japan)	100%

[Products and Services]

Case studies of products and services are shown below.

<Case Study 1> Smart Heim Denki

In the housing business, SEKISUI CHEMICAL Group has been offering homes equipped with solar panels from an early stage, as a strategy for mitigating climate change. In Japan, the transition to renewable energy is encouraged as a mitigation measure, and there are subsidies and mechanisms to support the energy transition, such as the FIT scheme (scheme where surplus electricity generated is purchased back), at start-up. SEKISUI CHEMICAL Group's SEKISUI Heim homes have the advantage of being able to accommodate a large area for solar panels that generate renewable energy, taking advantage of flat roof designs suitable for factory production and other features. This has led to a significant reduction in the amount of CO<sub>2</sub> generated during the use of the house as well as contributing to customer economic efficiency.

**Assumed Risk** \_\_\_\_\_

When the Japanese government's FIT scheme comes to an end, there will be no incentive to give back to society in the form of electricity generated by solar panels and to further market

solar panels.

**Converting to Opportunities** \_\_\_\_\_

In order to facilitate the effective use of renewable energy, the Group launched the Smart Heim Denki business. This business purchases surplus electricity generated by solar panels from residential customers who have solar panels installed on their SEKISUI Heim homes for use in the housing plant or for use by other customers.

<Case Study 2> Housing Adapted to Climate Change

**Assumed Risk** \_\_\_\_\_

Over the last several years, the effects of climate change have affected not only regulatory risks but also physical risks. Housing that contribute to mitigation risks will bring economic benefits to customers and control global warming to society. On the other hand, demand will naturally decline for houses with low disaster resistance and services with insufficient consideration.

**Converting to Opportunities** \_\_\_\_\_

Houses provided by the Group (SEKISUI Heim) are highly reliable disaster resistant product that contributes to the adaptation to climate



change. Prefabricated houses that are mostly built in factories are less susceptible to disasters caused by climate change. The houses can be quickly built as temporary shelter in a natural disaster event caused by climate change, and therefore their production and construction methods are also adaptable to climate change. Highly reliable SEKISUI Heim not only reduces physical and psychological burdens during evacuation, but even after using the house as a shelter, it is possible to move it to another location and reuse it with performing necessary maintenance. These houses can also contribute to rebuilding lives and recycling resources.

SEKISUI Heim has high thermal insulation and airtightness. Furthermore, by installing air conditioning systems such as "Kaiteki Airy", it is possible to provide housing that enables comfortable living with little energy even when global warming is progressing due to the effects of climate change. Such ventilation systems also have the effect of controlling infectious diseases by preventing the spread of viruses indoors. The ZEH ratio for new home construction in FY2022 was 94%. By installing storage batteries that can store electricity generated by solar panels in houses, that electricity can be used in the event of natural disasters that occur frequently due to climate change. The Group proposed the development and design of the following modifications based on the assumption that the storage batteries would be used to secure utilities in the event of a disaster for the following purposes:

- (1) Increasing the capacity of storage batteries and decreasing the size of batteries
  - (2) Design proposals for installation indoors or on the second floor to prevent damage to the batteries due to flooding, storms, etc.
- As a result, the number of storage batteries

installed is increasing every year. In addition, the "V to H" system, which connects solar houses with EVs, enables customers to travel to safe locations and transport goods even in the event of power outages due to disasters. Equipment and services will continue to be provided with this kind of reduced disaster adaptation to climate change in mind.

### <Case Study 3> Disaster Resilient Urban Development

#### Assumed Risk

In order to adapt to water disasters caused by the effects of climate change, it is necessary not only to improve the adaptability of housing, but also to make entire towns and communities resilient to disasters.

#### Converting to Opportunities

In 2018, SEKISUI CHEMICAL launched the "Safe & Sound Project", a community development project to think about the meaning of resilient communities and how to solve issues. This took into consideration community development projects based on the fusion of the Group's technologies. The first town development project that served as the model is "Asaka Leadtown", which was developed in Asaka City, Saitama Prefecture, and was opened to the public and started selling housing lots in 2019.

Examples of products provided by the Group, such as resin concrete pipes (RCP) and rainwater storage system "Cross-Wave", have been installed to temporarily store storm water during torrential rains and typhoons, and to control flooding of rivers and houses. In addition, as a means of reducing damages caused by water disasters in communities and supporting reconstruction, installation of equipment, such as an emergency temporary toilet systems in parks and schools that serve as evacuation sites in various regions, are proposed.

Furthermore, while promoting development of towns and communities that lead to improvement of the value of the towns while conducting their original town management, eight projects with a total project cost of about 50 billion yen have already been started over a period from the previous mid-term business plan (2020 to 2022) to the current mid-term business plan (2023 to 2025). Of this amount, sales of 20 billion yen are planned for FY2025.

Sales of land in "Atsugi-no-oka Lead Town" (in Atsugi City, Kanagawa Prefecture) began in March 2023.

#### <Case Study 4> Promoting Resilient Infrastructure in Developed Countries

##### Assumed Risk

As risks such as water disasters caused by climate change increase, there is a need to make

water supply and sewer systems and other infrastructure more resilient. In particular, water risk is an issue that affect some regions more than others. In developed countries, many infrastructures are outdated and have been constructed over 50 years ago, and there is a need for construction methods that can renew infrastructure in a short construction period without placing a large burden on energy or resources.

##### Converting to Opportunities

With the aim of expanding the use of trenchless technologies, such as the "SPR method", semi-automated construction methods and technologies that can accommodate a wide range of pipe shapes and sizes are being developed.

#### [Supply Chain or Value Chain]

The following are case studies related to supply chain or value chain.

#### <Case Study 1> Raw Material Suppliers

##### Assumed Risk

As regulations to mitigate the impacts of climate change are tightened, suppliers will also need to review their manufacturing processes and energy use. If responses to suppliers are delayed, their manufacturing costs may increase significantly, and there are concerns that the unit prices of those raw materials purchased will increase.

##### Converting to Opportunities

Since FY2018, in order to stabilize the supply of raw materials and mitigate climate change on a global scale, the Group has set greenhouse gas emission reduction targets and encouraging raw material suppliers to promote activities to reduce emissions through the Group's Procurement Guidelines. These guidelines have been reviewed and are being enhanced to encourage suppliers to ensure continued sustainable

procurement.

In addition, a purchasing system to procure raw materials from multiple suppliers has been adopted in order to prepare for risks that raw material manufacturing plants may shut operations due to disasters caused by climate change. Moreover, relocation of production sites are also being considered in areas where physical risks, such as natural disasters, are expected to be severe, to areas with less disaster risks. By quickly implementing these measures, SEKISUI CHEMICAL Group is striving to become a company that is chosen to meet the needs of customers that seek low-carbon footprint throughout their products life cycles.

#### <Case Study 2> Improving Infrastructure in Emerging Countries

##### Assumed Risk

Frequent water disasters due to the effects of

climate change will cause greater damages in emerging countries, where infrastructure is vulnerable and are not keeping pace with urban growth. When constructing a product supply system that meets the needs of customers in emerging countries, the Group operates production plants directly or source raw materials from other companies in the surrounding area.

**Converting to Opportunities** \_\_\_\_\_

In order to strengthen the water infrastructure foundation in emerging countries, marketing of "Cross-Wave", a rainwater storage system developed by SEKISUI, was expanded to emerging countries such as China, India, and other countries in Southeast Asia. In FY2019, a cooperative framework with a local water

resources bureau in Indonesia was established to promote the products. As a result, the products were selected for a large-scale residential development project and contributed to green infrastructure business in Indonesia. Furthermore, in order to quickly build a resilient water supply and sewage infrastructure, the Group is accelerating the business of providing water infrastructure products such as "Eslon Pipes" (PVC pipes) and fittings in partnership with a Vietnamese company.

[Investment in Research and Development]

All development projects at SEKISUI CHEMICAL Group are selected according to long-term strategies that take into account environmental and social issues such as climate change and contribute to solving these issues. These projects are explored based on appropriate business plans.

<Case Study 1> Perovskite Solar Cell (PSC)

**Assumed Risk** \_\_\_\_\_

As the demand for solar cells increases, conventional types of solar cells may face difficulties responding to issues such as depletion of scarce resources, demands to reduce energy use, and restrictions on installation locations that take into account ecosystems and building strength.

Moreover, further supplies of renewable energy are likely to be required. Failure to meet this requirement could lead to a possible downsizing of the relevant businesses.

**Converting to Opportunities** \_\_\_\_\_

Research and development of perovskite solar cells have begun by utilizing the Group's film extrusion technology. These solar cells are lightweight and highly efficient, offer greater

freedom in installation location, and are able to create more energy than conventional technologies.

<Case Study 2> Bio-Refinery (BR) Ethanol Technology

**Assumed Risk** \_\_\_\_\_

Conversion of raw materials to non-fossil based resources and recycling of waste into useful materials are being promoted from both the perspective of carbon circulation and resource circulation as mitigation of climate change.

Failure to contribute to technological development and businesses that contribute to resource circulation across the supply chain can lead to missed opportunities to enter the market in the future.

### Converting to Opportunities

A 1/10th scale demonstration plant has been constructed in Kuji City, Iwate Prefecture, for the social implementation of BR ethanol technology, which produces ethanol from trash.

This technology has potential not only to contribute to resource circulation, but also for

the effective use of carbon dioxide capture and utilization (CCU), which contributes to climate change mitigation.

SEKISUI is also collaborating with other companies to develop technologies for manufacturing plastics from the ethanol that is produced.

### <Impacts of Climate Change on Financial Planning>

As described in Section 4-2, scenario analysis is used to analyze risks and opportunities, and business activities have been carried out in accordance with a medium-term management plan that reflects strategies for reducing risks and capturing opportunities. The “Products to Enhance Sustainability” system, an in-house initiative for creating and promoting products that contribute significantly to solving environmental issues, including climate change, is being advanced. By expanding net sales of these products to the FY2025 target of 1 trillion yen, they will further contribute to solving environmental issues, including climate change. By transforming risks into opportunities, these products will accelerate business growth, and contribute to reaching the long-term plan that aims to double the Group's business by 2030.

Strategies to reduce climate change related risks and turn risks into opportunities have proven to be appropriate, through conducting carbon efficiency analysis and value analysis using impact-weighted accounting. Also, the need of strategies that turn current environmental values into positive impacts was suggested in future financial planning.

**[Overview]**

Milestones are set by backcasting from the long-term goals of "SEKISUI Environment Sustainability Vision 2050", and efforts until FY2022 had been based on the medium-term environmental plan "Environment Sustainability Plan: Accelerate II". In the current medium-term management plan (2023-2025), the following indicators are set to manage progress on climate change:

- (1) Net sales of products to enhance sustainability\*
- (2) Greenhouse gas emissions (Scope 1, 2, and 3)
- (3) Sales of products that contribute to resource circulation and products that contribute to resource conversion, and waste recycling rate

In FY2022, the target for net sales of products to enhance sustainability was achieved with actual sales of 908.9 billion yen, compared to the target of 800 billion yen. Of which, sales of products that contribute to resource circulation was 2.2 times greater than FY2020 (123.3 billion yen), of that which sales of products that contribute to resource conversion of raw materials to resources was 34.8 billion yen (11 fold compared to FY2020). Thus, targets on resource circulation strategies were achieved and efforts to decarbonize are accelerating.

Regarding greenhouse gas emissions, the Group's business activities achieved the reduction targets, but reduction targets for the supply chain could not be achieved.

\* Products to Enhance Sustainability:

Series of products that are certified and registered that contribute significantly to solving environmental and social issues, including climate change issues, based on in-house standards. Products are reviewed by a certification committee composed of in-house members and products that meet the criteria are registered. This committee receives advice and feedback from an external advisory board of external experts to ensure high standards and transparency.

### 5-1. Indicators for Assessing Risks and Opportunities Related to Climate Change

- Net sales of products to enhance sustainability (of which, net sales of products that contribute to resource circulation, non-fossil based products, and products using recycled materials)
- Greenhouse gas emissions (Scope 1, 2, and 3)

To solve environmental and social issues, various indicators and goals are set in the SEKISUI CHEMICAL Group medium-term environmental plan "Environment Sustainability Plan: Accelerate II" (FY2020-FY2022), which is formulated based on the Group-wide medium-term management plan. Additionally, for risks and opportunities identified through impact analysis (see Section 4-1), the progress of efforts is regularly monitored to reduce risks and capture opportunities using indicators.

Two indicators were set to reduce the risks assumed in the 4°C scenario. These indicators are used to monitor progress of efforts to solve

climate change issues.

One is expanding products that contribute significantly to solving climate change issues through products and businesses. The net sales of products to enhance sustainability \*, an internal certification system for the Group's products, is used as this index.

The other is reducing greenhouse gas emissions. Efforts to reduce greenhouse gas emissions from the Group's own business activities will be promoted. An index to assess both greenhouse gas emissions from its own business activities and greenhouse gas emissions in the supply chain (Scope 3) as an

indicator to reduce risks have been set.  
The degree of achievement of these indicators is reflected in environmental performance

evaluation points, and is reflected in the bonuses and executive compensation of employees in managerial positions and above.

## 5-2. Net Sales of Products to Enhance Sustainability [Targets for Creation and Market Expansion of Products to Enhance Sustainability]

Double business volume by solving social issues (including climate change issues) in 2030  
Of which, net sales of products to enhance sustainability that contribute to resource circulation:  
more than double (2020 baseline)  
Of which, net sales of non-fossil based and recycled material based products:  
100 billion yen  
800 billion yen in net sales for products to enhance sustainability in 2022  
Of which, net sales of products to enhance sustainability that contribute to resource circulation:  
1.1 times (2020 baseline)  
Of which, net sales of non-fossil based and recycled material based products:  
1.1 times (2020 baseline)

Targets set for "Creation and Market Expansion of Products to Enhance Sustainability" are set as above, and the progress is monitored by checking the results, shown above.

Among the products that enhance sustainability, efforts are put in and monitored to increase the amount of contribution to the reduction of greenhouse gas emissions from products that contribute to climate change issues.

Furthermore, tackling the resource circulation challenge and achieving a circular economy, as outlined in the resource circulation strategy and roadmap in Section 4-4 is seen as leading to

the realization of a decarbonized economy. It is also believed that initiatives and means to realize decarbonization and resource circulation are meaningless unless they reduce the negative impacts on nature, including biodiversity. Therefore, in addition to working to expand low-carbon products that contribute to resource circulation, products and their manufacturing processes impact on nature are also monitored so that impacts can be shifted to a more positive direction (calculated based on the LIME2 concept).

[Initiatives and Achievements Related to Products to Enhance Sustainability]

Net sales of products to enhance sustainability:

908.9 billion yen (achieved targets of sales ratio = 73.1% and volume = 800 billion yen)

Of which, net sales of products to enhance sustainability that contribute to resource circulation:

123.3 billion yen (achieved 2.2 times the baseline of 55.3 billion yen and the target by 1.1 times)

Of which, net sales of non-fossil based and recycled material based products:

34.8 billion yen (achieved the target and 11.6 times the baseline of 3 billion yen)

In FY2022, 18 products to enhance sustainability were registered, bringing the total number of registered products to 198 as of the end of March 2023. Net sales were 908.9 billion yen, achieving the target of 800 billion yen. The ratio to net sales rose 6.4 percentage points from 66.7% in FY2021. The strategy in the previous medium-term management plan (2020-2022) to expand the business by solving social issues through product portfolio transformation is showing steady progress. New resins and products that improve the durability of customers' end products were registered in FY2022. Examples include highly durable resins used in resilient social

infrastructure, such as water and sewage pipes, and highly thermally conductive materials used in electronics.

Resin raw materials such as the aforementioned are products that indirectly contribute to solving social issues. For example, resins used as raw materials for non-solvent water-based resins have also been registered as having the effect of reducing the impact on the biological environment by reducing the use of solvents. The contribution in this area will be expanded in the future by recognizing the contribution that raw materials and materials can make to solving environmental and social issues.

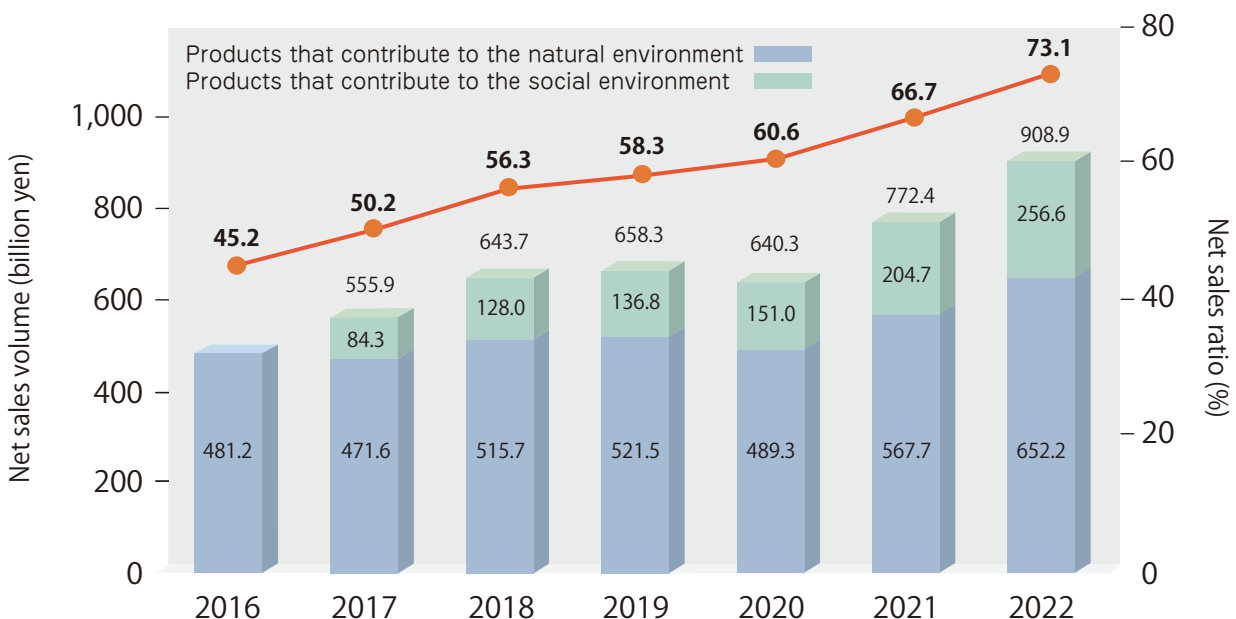


Figure 12. Net sales volume and sales ratio of products to enhance sustainability

[Reference 1]

Contributions to reducing greenhouse gas emissions through business operations and products by products to enhance sustainability: 7,161 kt-CO<sub>2</sub> (FY2022)

The following table shows the reductions in greenhouse gas emissions over the product life cycle when compared to conventional or other comparative products. Compared with the amount of 6,976 kiloton CO<sub>2</sub>/year in FY2021, an increase in contribution to reduction of 185 kiloton-CO<sub>2</sub>/year was observed.

The amount of emissions reductions contributing to the mitigation of climate change is increasing due to the increase in the ratio of housing with ZEH specs and demand for vehicles and transportation materials.

"S-LEC", an interlayer film for laminated glass used

in vehicle windshields, improves car air-conditioning efficiency by providing heat insulation and sound insulation, and reduces greenhouse gas emissions during driving by contributing to weight reduction. Foam materials, which are intermediate material rarely visible, are also developed in accordance with their properties, contributing to the reduction of CO<sub>2</sub> emissions during use. "THERMOBREAK", a heat insulation material for pipe ducts marketed in the ASEAN region, exerts an energy-saving effect due to its high thermal insulation. "Function Foam Tape" that has impact-absorbing properties, contributes to the performance of energy-saving LCDs.

Table 5. Contributions to Reducing Greenhouse Gas Emissions\* from Products (FY 2022)

Business Domain	Remarks	CO <sub>2</sub> reduction (ktCO <sub>2</sub> )
Housing	Solving energy issues from the perspectives of energy creation, energy saving, and energy storage by installing solar panels, HEMS, and storage batteries	1,127
Infrastructure	Trenchless methods, which renew old pipes, not only reduces resources and waste, but also minimizes traffic disturbances during construction, improving fuel efficiency by reducing time stuck in traffic.	613
Vehicles and Transportation	Laminated glass interlayer film used for vehicle windshields. High-performance film with heat and sound insulation contribute to fuel efficiency reduction by reducing the weight of vehicles and improving the efficiency of car air conditioners.	4,040
Electronic Materials	Intermediate materials that contribute to the performance of LEDs, which are energy-saving light sources.	811
Others	—	571
<b>TOTAL</b>		<b>7,161</b>

(Units: kiloton CO<sub>2</sub>/year)

\* Contributions to reducing greenhouse gas emissions from products:  
LCA Software MiLCA (Japan Environmental Management Association for Industry) and LCI Database IDEA (Japan Institute of Advanced Industrial Technology and Technology and Japan Environmental Management Association for Industry) are used to calculate the amount of greenhouse gas emissions reductions in the life cycle of products that account for 75% of the total sales of products to enhance sustainability.

In the future, greenhouse gas emissions in manufacturing, including Scope 3, will be further reduced, while enhancing and adding new functions to products, and developing new products. In addition, markets that contribute to the reduction of greenhouse gas emissions will be driven, and the amount of contribution to reduction through our group's products will be increased (Figure 13).

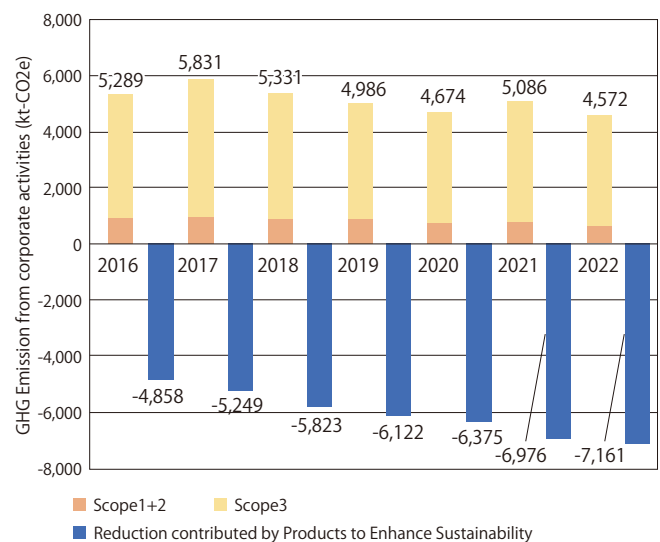


Figure 13. Greenhouse gas emissions from corporate activities and reduction contributions from products



5-3. Greenhouse gas emissions (Scope 1, 2, and 3)

[Targets for Reducing Greenhouse Gas Emissions]

Long-term targets :  
To achieve virtually zero emissions from SEKISUI CHEMICAL Group's own business activities in 2050

Medium-term targets :  
Reduce GHG emissions from SEKISUI CHEMICAL Group's business activities by 50% in 2030 compared to FY2019 and reduce GHG emissions from Scope 3 by 30% compared to FY2019

The roadmap for reducing greenhouse gas emissions by 2050 for Scopes 1 and 2 is shown in Figure 14.

In 2018, SEKISUI CHEMICAL became the first company in the chemical sector to obtain SBT certification and set a target of a GHG emissions reduction rate of 26% by 2030 compared to FY2013. The Group has also promoted energy consumption innovations, such as promoting the replacement of old equipment, and energy procurement innovations, such as the conversion of purchased electricity to renewable energy and

the introduction of self-consumption solar power generation equipment. As a result, the Group's overall share of purchased electricity from renewable sources reached 36% in FY2022. This is 1.8 times the ratio of the original plan, and the GHG emissions is 27% below the FY2013 level. In FY2022, as climate change mitigation becomes an even more pressing social issue, the technically challenging tasks of reducing fuel-based GHG emissions by electrifying fuel-using equipment, converting to low-carbon fuels, and innovating production processes are

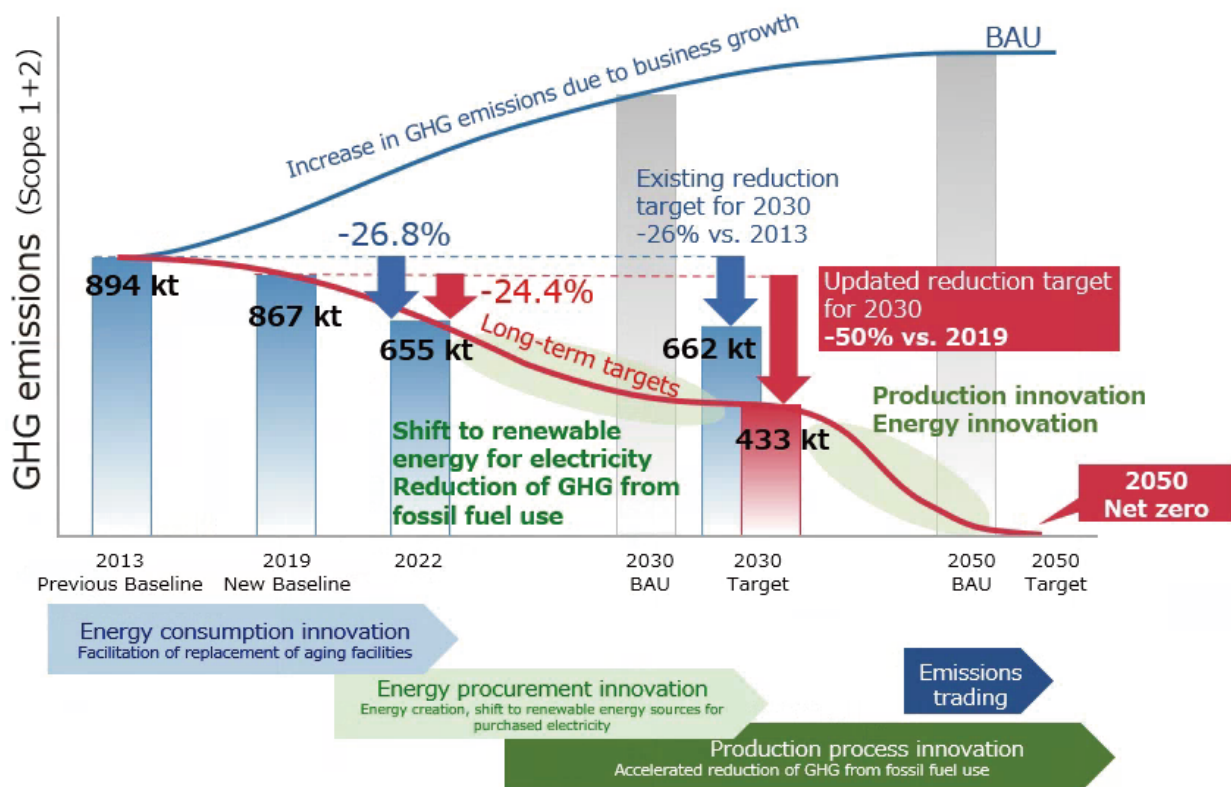


Figure 14. Roadmap for greenhouse gas reduction

ahead of schedule, and it has been decided to raise the GHG emissions reduction rate in 2030 to 50% compared to FY2019.

This target was re-certified by the SBT as the 1.5°C target in March 2023.

Regarding Scope 3 greenhouse gas emissions, it is known that the Group's emissions are large at the raw material procurement and product use phases. It is recognized that the reason for this large amount in raw material procurement is due to the characteristics of our business as a chemical manufacturer.

In raising the GHG emissions reduction target for FY2022, steps have been taken to reduce emissions in the procurement of raw materials. Specifically, this is an initiative to recirculate four plastic materials that generate the largest amount of emissions. Resin raw materials, which account for 50% of purchased product services

(category 1), will be converted to non-fossil materials to expand the use of recycled materials. This will also lead to a reduction in GHG emissions from the disposal of sold products (category 12). In addition, the recycling of waste plastics will be promoted and new efforts will be made to reduce the amount of waste (category 5) generated by operations. Emissions during the use phase of the product are due to the significant GHG emissions from energy used in the homes sold. In terms of the use of products sold (category 11), the energy-saving performance of Sekisui Heim and the expansion of sales of ZEH homes with large-capacity PV systems and storage batteries have made a significant contribution to reducing GHG emissions. Further reductions will be achieved by increasing sales of ZEH homes.

The following management indicators and targets for greenhouse gas reduction have been established with initiatives being implemented from FY2023.

Table 6. Medium-and long-term targets for reducing greenhouse gas emissions

	Previous Targets	Updated targets	Means of achieving updated targets
Scope1+2	Base year: 2013 Target year: 2030 Reduction rate: 26% (2° C target)	Base year: 2019 Target year: 2030 (unchanged) Reduction rate: 50% (1.5° C target)	Adopt renewable energy for conventional purchased electricity, and also pursue in advance the shift to low-carbon fuels, electrification, and production innovation to reduce fuel-derived GHGs
Scope3	Base year: 2016 Target year: 2030 Reduction rate: 27% (2° C target)	Base year: 2019 Target year: 2030 (unchanged) Reduction rate: 30%	Add resource recycling measures (conversion to non-fossil raw materials, increased use of recycled materials, and recycling of waste) to promote reductions in categories 1, 5, and 12

For details on calculating GHG emissions in the supply chain, see "Sustainability Report", performance data: [https://www.sekisuichemical.com/sustainability\\_report/eco/initiatives/global\\_warming/#anc-P06](https://www.sekisuichemical.com/sustainability_report/eco/initiatives/global_warming/#anc-P06)

[Efforts and Achievements Related to Reducing Greenhouse Gas Emissions]

Ratio of renewable energy of purchased electricity	: 36% (achieved FY2022 target of 20%)
Reduction of greenhouse gas emissions in business activities	: 27% compared to FY2013 (achieved FY2022 target of 9%)
Reduction of greenhouse gas emissions in supply chain (Scope 3)	: 11% compared to FY2016 (did not achieve FY2022 target of 11.6%)
(FY2022 results are compared to the previous medium-term target before the target was raised)	

In order to reduce greenhouse gas emissions from the Group's business activities, the conversion of purchased electricity to renewable energy by installing solar power generation systems within its own business sites are actively promoted, and consuming the generated electricity within the business sites, or switching electricity purchased from power companies to renewable energy sources. In FY2022, three business sites installed solar power generation systems, and reaching the total number to 15 sites in Japan and abroad, bringing the total power generation capacity to 9.3 MW. Also, regarding electricity to be purchased from power companies, 31 business sites in Japan and overseas have completed the conversion to 100% renewable energy. In FY2022, the ratio of renewable energy ratio of purchased electricity is 36%, including in-house solar power generation.

In the three-year medium-term management plan for FY2020-22, an investment framework that incentivizes investments that contribute to the environment has been established to promote investments in the conversion to energy-saving processes that reduce greenhouse gas emissions to contribute to climate change mitigation.

This is one of the internal carbon pricing

systems, and it is a mechanism to provide financial support from Corporate to the investing department at a conversion rate of 30,000 yen per 1t-CO<sub>2</sub> of GHG emissions reduced. The CO<sub>2</sub> emissions reduced by these investment projects is increasing year by year as the equipment are upgraded and facilities are completed, contributing continuously to the reduction of greenhouse gas emissions in manufacturing.

The switch to renewable energy is being facilitated by providing a certain amount of support for the cost of converting purchased electricity to renewable energy.

The reduction in greenhouse gas emissions over the medium-term three-year period due to these support measures amounted to 127.5 thousand t-CO<sub>2</sub>. In FY2022, while production was fully recovering from the effects of COVID-19, greenhouse gas emissions from business activities was reduced by reducing the unit of CO<sub>2</sub> emissions of purchased steam, in addition to the effects of renewable energy of purchased electricity and the environmental contribution investment program. The rate of reduction was 27%, which was significantly higher than the FY2022 target of 9% (compared to FY2013) (Figure 15).

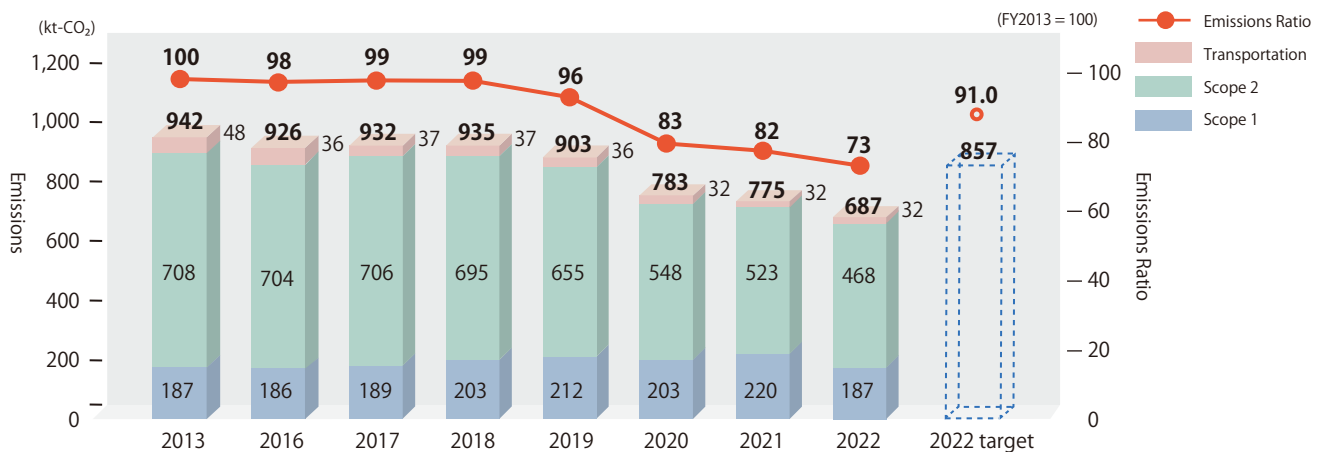


Figure 15. Greenhouse gas emissions from business activities

Regarding the reduction of greenhouse gas emissions in the supply chain (Scope 3), the results for FY2022 were as follows.

- SCOPE 3 overall : 11.0% decrease (compared to 2016)
- Category 1 (purchased products and services) : 1.1% increase (compared to 2016)
- Category 11 (use of sold products) : 59.5% decrease (compared to 2016)
- Category 12 (disposal of sold products) : 80.2% increase (compared to 2016)

Overall for Scope 3 decreased by 11.0% (compared to 2016).

Category 1 (purchased products and services), which accounts for the majority of the total, increased by 1.1% (compared to 2016), an

increase that is proportional to the expansion of the business. Activities centered on working with suppliers and converting raw materials to bio-derived materials and recycled materials will continue in the future, and initiatives and measures for further reduction are being considered.

Category 11 (use of sold products), on the other hand, showed a significant reduction of 59.5% (compared to 2016). This is due to the fact that the ratio of ZEH-specification homes sold has increased to 94% (excluding Hokkaido).

Category 12 (disposal of sold products) has not been reduced since 2016. It is necessary to accelerate reductions by steadily implementing the resource circulation strategy announced in fiscal 2021.

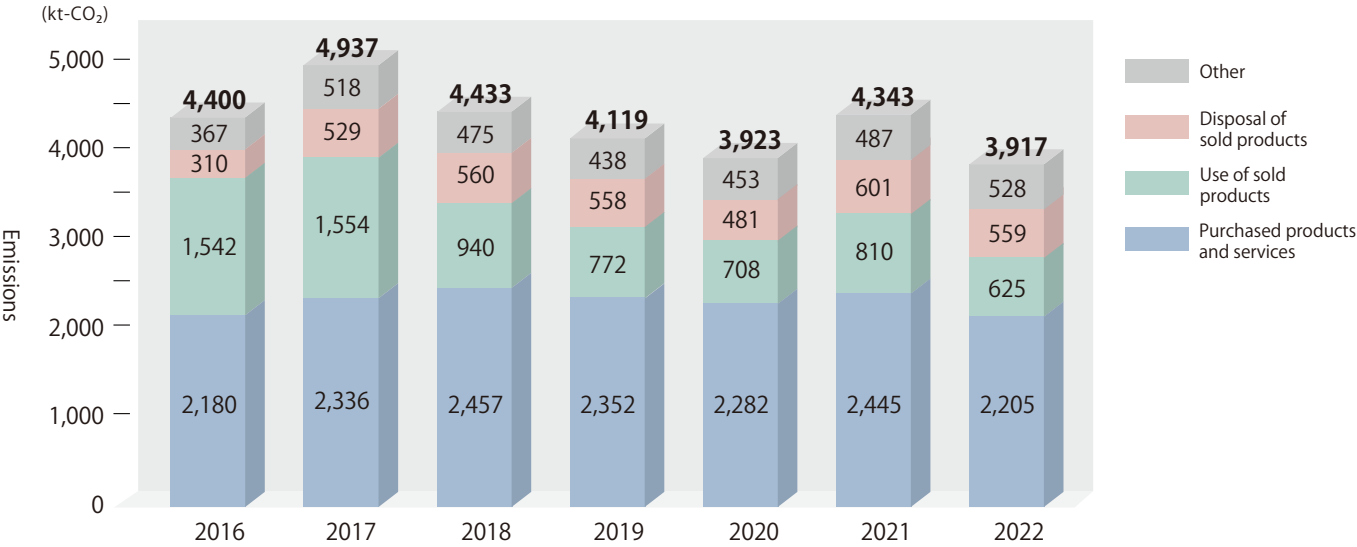


Figure 16. Greenhouse gas emissions from the supply chain

Since 2018, SEKISUI CHEMICAL Group has been disclosing its efforts on climate change issues in the TCFD Reports. Recognizing that climate change issues require long-term initiatives, the reports have analyzed the risks to which companies are exposed and the risks companies pose to the external environment. Strategies are to be developed and initiatives pursued to mitigate both risks and convert them into opportunities.

As the accuracy of scientific predictions improves, the importance of raising goals related to climate change issues, accelerating the achievement of targets and the associated transition towards decarbonized management is becoming more important in order to achieve a decarbonized economy. In FY2022, the Group also considered innovations and measures to accelerate the pace of decarbonization, taking into account the results of various initiatives to curb greenhouse gas emissions and the evaluation of the scenario analysis disclosed in this report, thus revising the milestone from a target of 2°C to 1.5°C.

Since FY2012, SEKISUI CHEMICAL Group has recognized the impact of its corporate activities on nature and social capital in its long-term environmental vision. When different social issues, including environmental issues, are solved, “an earth with maintained biodiversity” can be realized. The progress of efforts have been confirmed and evaluated as the SEKISUI Environment Sustainability Index. In this integrated assessment, a rate of return of 100% or more relative to the use of natural and social capital is achieved and maintained.

In FY2020, a long-term goal for 2050, the “SEKISUI Environment Sustainability Vision 2050” was formulated, which included targets for resource circulation and water risks in addition to climate change, and launched initiatives to achieve that goal. With regards to resource circulation, a resource circulation policy was formulated in FY2020, and a roadmap based on it to promote innovation was drawn up. At the same time, measures are being developed to accelerate the conversion of raw materials to non-fossil based materials and recycling of disposed wastes back into materials. In other words, it was recognized that even the issue of resource circulation would affect the natural and social capital used, and vice versa. Based on this recognition, specific milestones are being set and undertake initiatives after examining risks and their impacts.

In the future, the risks and impacts of different environmental issues will be analyzed, strategies to accelerate risk reduction will be formulated, and information on the results of these efforts will be released. It is recognized that promoting such information disclosure not only demonstrates the sustainability of the Group, but is also an important issue in obtaining like-minded partners to solve issues, or to take a leading position in transforming the society.

SEKISUI CHEMICAL Group will continue to promote sustainable initiatives that are integrated with our business activities, with the aim of realizing a sustainable society and the sustainable growth of our group.



# TNFD

*Task Force on Nature-related Financial Disclosures*

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1 ..... Executive Summary

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2 ..... Governance

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3 ..... Management of  
Risks and Impacts

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4 ..... Strategies

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5 ..... Indicators and Targets

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6 ..... In Closing

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This TNFD report is disclosed and reported in accordance with the guide published in February 2023 to illustrate SEKISUI CHEMICAL Group's responses to biodiversity issues as follows:

1. How the Group ascertains its impacts on biodiversity and the impacts that the Group receives from biodiversity, and what strategies it is pursuing to move both impacts in a positive direction.
2. How the Group seeks to reduce its negative impacts on biodiversity and improve the sustainability of the Group and society.

The responses to the general requirements of the TNFD guidance are as follows:

**1. Approach to materiality:**

In addition to the Group's single materiality, analysis is performed and described as a double materiality, including the impacts on ecosystems (natural capital).

**2. Scope of disclosure:**

In addition to the Group's corporate activities, analysis is performed and described encompassing the entire upstream and downstream global supply chain.

**3. Nature-related dependencies and impacts, and links between risks and opportunities:**

Using LEAP analysis, decoupling analysis, and scenario analysis, which are processes for systematically evaluating nature-related risks and opportunities based on scientific evidence, the links between dependence and impact, risk and opportunity are analyzed and described.

**4. Regional location:**

Analysis and description of the areas in which corporate activities are envisaged to take place.

**5. Integration with other environmental issues:**

Adopt, analyze, and describe a comprehensive (holistic) approach, considering the correlation with environmental issues such as climate change, resource circulation, and water risks.

**6. Stakeholder engagement:**

Start dialogues with high impact stakeholders regarding nature-related risks and opportunities (e.g., initiate dialogues through due diligence with raw material suppliers that may pose a risk to the Group).

The current LEAP analysis disclosed in this TNFD report does not necessarily provide a comprehensive analysis of all activities and operations. In order to realize nature positive for biodiversity in the future, SEKISUI will continue to adopt an open innovation approach to dialogue with employees, business stakeholders, and other stakeholders, such as experts, to review strategies, propose and implement activities, and report annually in the TNFD report.

Governance

The Group recognizes that nature (natural capital) issues, including biodiversity, are as important as climate change in terms of ESG management. With regard to external environmental issues that may pose risks to management, the same systems and mechanisms are implemented as for handling other important issues (see TCFD Report, "2. Governance").



Management of Risks and Impacts	<p>The Group recognizes its impacts and dependence on nature (natural capital), including biodiversity, and analyzes the risks to the Group or society. The same system as risk management for other environmental issues is then used to prevent or reduce the identified risks (see TCFD Report "3. Risk Management").</p>
Strategies	<p>■ Risks</p> <p>For each business domain, the impacts and dependencies were identified for biodiversity factors that could have significant impacts on business ("impact drivers").</p> <p>■ Strategies</p> <ul style="list-style-type: none"> <li>· The initiatives that need to be undertaken or have already been undertaken based on the impact of each impact driver have been reconfirmed.</li> <li>· Seven pillars that need to be launched have been identified to formulated a strategic grand design in order to achieve the Group's goal of "realizing an earth with maintained biodiversity (i.e. realizing nature positivity)" by 2050.</li> <li>· By using LEAP analysis, the impact on natural capital in some projects and initiatives were recognized, implemented countermeasures, and confirmed their effectiveness.</li> </ul> <p>In the future, by conducting this analysis and implementing the PDCA cycle to consider solutions, negative impacts will be reduced and positive impacts toward nature positivity will be increased.</p>
Indicators and Targets	<p>The following three indicators have been set and progress is being monitored with the aim of realizing an "earth with maintained biodiversity" as set out in the long-term environmental vision for 2050:</p> <ol style="list-style-type: none"> <li>1) Rate of return on natural and social capital</li> <li>2) Rate of return on biodiversity</li> <li>3) Rate of return on plant biomass</li> </ol> <p>In the future, targets and management indicators will be set for "use of resources" and "land", which are important impact drivers, in order to reduce negative impacts and expand positive impacts.</p>

## 2-1. Oversight and Execution System for Biodiversity Issues

[Overview] The Group recognizes that nature (natural capital) issues, including biodiversity, are as important as climate change in terms of ESG management. With regard to external environmental issues that may pose risks to management, the same systems and mechanisms are implemented as for handling other important issues (see TCFD Report, "2. Governance").

Biodiversity activities need to be implemented specific to each area. In the future, it will be necessary to accelerate the integration of internal and external technology platforms, and to develop a system that enables work to be performed with experts and local authorities to study and implement solutions.

## 3-1. Analysis of Risks and Opportunities Related to Biodiversity

[Overview] The Group recognizes its impacts and dependence on nature (natural capital), including biodiversity, and analyzes the risks to the Group or society. The same system as risk management for other environmental issues is then used to prevent or reduce the identified risks (see TCFD Report "3. Risk Management").

#### <Assessing and Managing the Management Risks that Include Biodiversity>

The Group carries out risk assessments using scenario analysis with climate change as one of the key axes. As social change towards climate change mitigation and adaptation will have a significant impacts on biodiversity and other environmental issues, the impacts on environmental issues other than climate change has been assessed and risks re-analyzed since FY2021 (see TCFD Report Table 3).

#### <Assessing and Managing the Opportunities Obtained from Addressing Biodiversity Issues>

As with climate change and other environmental issues, the opportunities offered by addressing biodiversity issues are also studied by the Products to Enhance Sustainability Certification Committee and the External Advisory Board. Discussions with internal committee members and external experts on what contributions can be made with the products and services of the Group, has provided insight into strategies that transform risks into opportunities.



### <Indications from Scenario Analysis>

Scenario analysis is conducted with climate change and social change as the key axes. Analysis results of the risks and opportunities related to climate change issues or how measures to address them might affect biodiversity has been presented earlier (see TCFD Report "4. Strategies").

A temperature rise of 4°C or more is likely to increase negative impacts on natural capital,

including biodiversity.

On the other hand, if temperature increase is kept below 1.5°C, positive impacts on natural capital should increase. The changes envisaged for biodiversity in the four scenario societies are shown in Figure 2.

A comprehensive review of risks from a biodiversity perspective will be considered in the future.

## 1.5°C scenario

Tightened carbon tax / exhaust gas regulations, accelerated resource circulation, reduced water risk, mitigated impacts on aspects of nature

### Scenarios involving various measures taken to control climate change

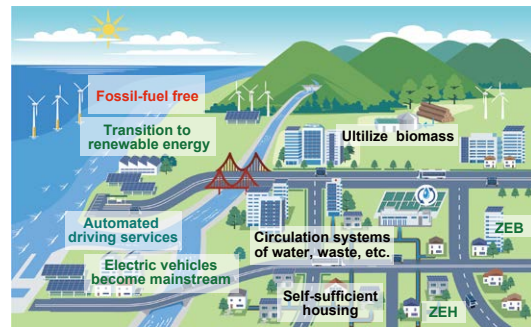
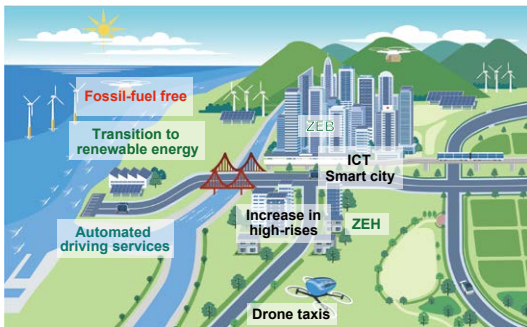
#### (A) Decarbonized smart society

- Large-scale "smart farming"
- Expand "land sparing"
- Ecosystem services provided by companies and municipalities in urban areas
- Development of large-scale green infrastructure, Eco-DRR

#### (B) Sustainable circular society

- Improved agricultural efficiency
- Expand "land sharing"
- Individual access to ecosystem services
- Development of small-scale green infrastructure, Eco-DRR

Phasing out fossil fuels



Electric vehicles

Urban concentration

Concentrated power generation

Dispersed power generation

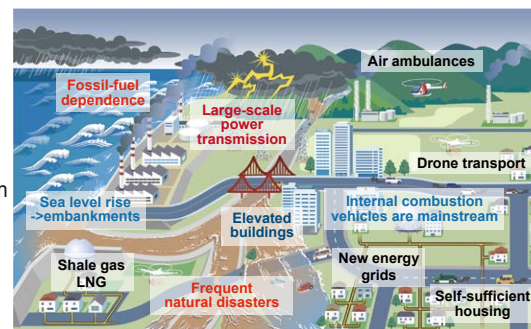
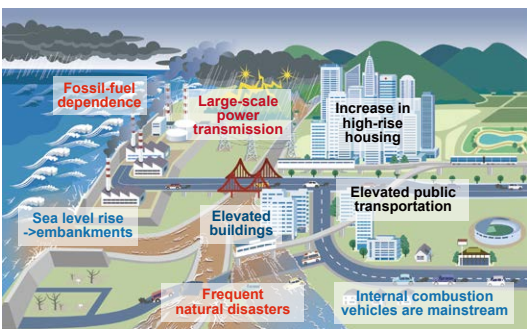
Decentralized communities

#### (D) Mass consumption society

- Centralized agricultural management system
- Biodiversity restoration by companies and municipalities (urban areas, use of man-made capital)

#### (C) Local production and local consumption society

- Management techniques for small-scale farming
- Biodiversity restoration by companies and municipalities (regional, maximum use of natural capital)



Internal combustion vehicles

Depending on fossil fuels

### Scenarios involving preparation for higher temperatures and frequent disasters due to climate change

## 4°C scenario

Frequent natural disasters, delayed resource circulation system, increased water risks, increased negative impacts on nature

Scenarios involving increased urban concentration

Scenarios involving rural decentralization

Figure 2. Changes related to biodiversity expected in four visualized scenario of societies

## 4-2. Strategy Developed from Analysis Results

For nature (natural capital) issues, the Group's impacts on the five impact drivers have been compiled and re-analyzed (Figure 3). Climate change, use of resources (resource circulation),

and water use are recognized as drivers (factors) that have a significant impacts on corporate activities, and a roadmap to 2050 has been created for each issue to be addressed.

Impact Drivers	Input	Output	Impact Areas	Activities
Climate Change	<ul style="list-style-type: none"> <li>Raw material use (plastics)</li> </ul>	<ul style="list-style-type: none"> <li>Air emissions</li> </ul>	<ul style="list-style-type: none"> <li>Global warming due to GHG emissions</li> </ul>	<ul style="list-style-type: none"> <li>Aiming for carbon neutrality, achieving milestones in greenhouse gas emissions from corporate activities, and contributing to the realization of 1.5 degrees or less</li> </ul>
Resource Use	<ul style="list-style-type: none"> <li>Energy resources</li> <li>Water resources</li> <li>Metals/mineral resources</li> <li>Plant derived resources</li> <li>Animal derived resources</li> </ul>		<ul style="list-style-type: none"> <li>Use of paper/wood in products</li> <li>Use of industrial water</li> </ul>	<ul style="list-style-type: none"> <li>Based on our resource recycling policy, promoting recycling of resources by converting waste into materials and developing technologies and products that contribute to resource recycling</li> <li>Positive impact by encouraging suppliers to use sustainable wood as a raw material</li> </ul>
Land/Freshwater/Ocean Use	<ul style="list-style-type: none"> <li>Land use</li> </ul>		<ul style="list-style-type: none"> <li>Fragmentation of ecosystems at production sites</li> </ul>	<ul style="list-style-type: none"> <li>Improving the quality of green spaces used in production activities</li> <li>Minimize water withdrawal in the process</li> <li>Reduction of marine plastics through resource recycling design of plastic products</li> </ul>
Pollution		<ul style="list-style-type: none"> <li>Air emissions</li> <li>Emissions into water</li> <li>Waste disposal</li> </ul>	<ul style="list-style-type: none"> <li>Impact on watersheds of wastewater from production</li> <li>Illegal disposal after use of plastic products</li> <li>Release of chemicals in the production process into atmosphere</li> </ul>	<ul style="list-style-type: none"> <li>Minimizing emissions into air and water of chemicals from manufacturing process</li> </ul>
Invasive Alien Species			<ul style="list-style-type: none"> <li>Invasion of alien species due to raw material procurement and product transportation</li> </ul>	<ul style="list-style-type: none"> <li>Eliminate alien species from green spaces used in production activities</li> <li>Considerations during procurement and transportation</li> </ul>

Earth with maintained Biodiversity

Figure 3. List of initiatives for each impact driver

From this current mid-term (2023-2025), initiatives will be considered that can be converted into positive impacts with regard to pollution and invasive species. Nature positive will also be accomplished by raising employee awareness so that they are aware of the correlation between environmental issues, consider solutions that do not involve trade-offs, and put them into practice. Recognizing the above-mentioned impacts on and dependence on biodiversity, SEKISUI CHEMICAL Group is committed to achieve a planet with conserved biodiversity by 2050 based on the following seven pillars from both corporate activities and support for social change. (Figure 4).

- Seven initiatives to realize nature positive**
- **Realize returns on natural capital from corporate activities**
    - (i) Review of manufacturing processes
    - (ii) Review of nature positive product design
    - (iii) Expansion of contribution through products to enhance sustainability
  - **Support the return to natural capital by society**
    - (iv) Strengthening efforts in raw material procurement
    - (v) Support for social change
  - **Activities to accelerate the two returns**
    - (vi) Human resource development
    - (vii) Stakeholders collaboration

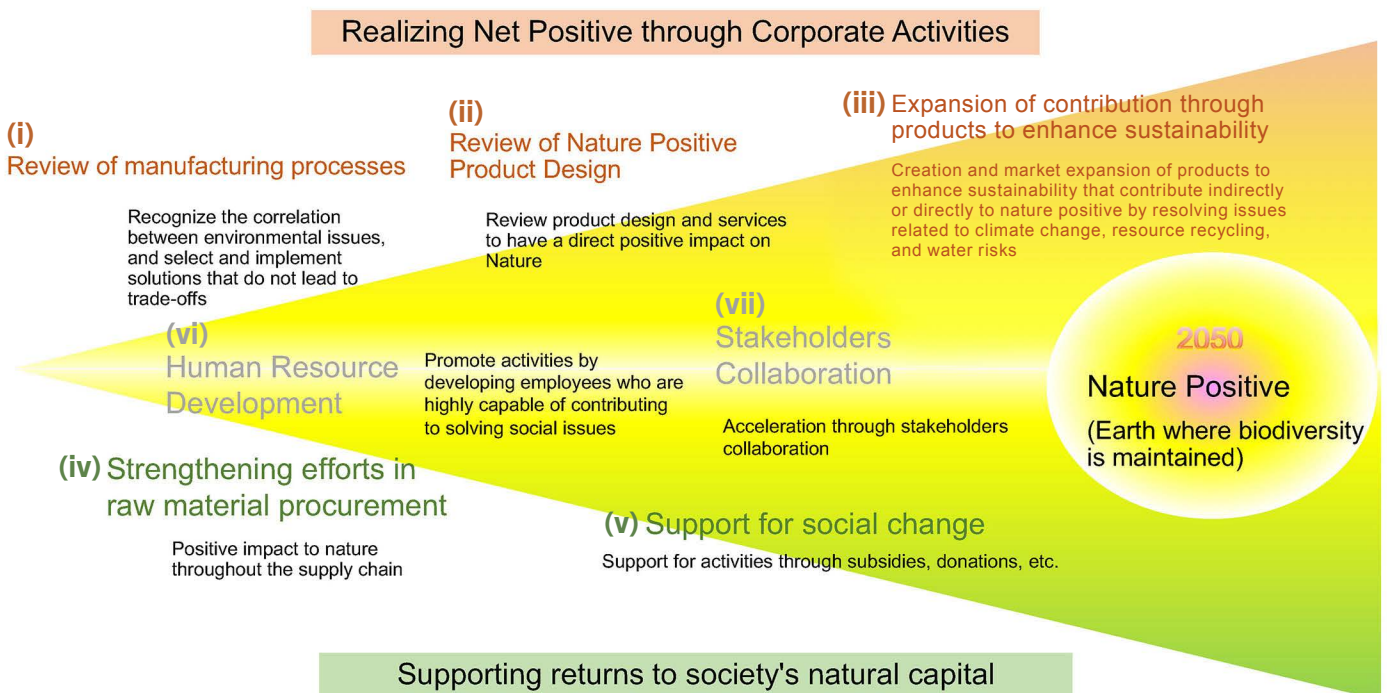


Figure 4. SEKISUI biodiversity grand design



[Reference]

LEAP Analysis

Four case studies will be used to illustrate the relationship between the Group's business activities and biodiversity (natural capital) and measures to reduce risks and convert them into opportunities. (Figure 5)

Among the group's business activities that affect or depend on biodiversity, case studies that are believed to have large impacts are highlighted. Additionally, in "A: ASSESS", the impacts on both the ecosystem and the company were analyzed. The use of LEAP analysis has enabled the ecological impacts and the impacts on our

business activities in some of our operations and initiatives to be recognized, and to implement measures and confirm the effectiveness of these measures. The negative impacts will continue to be reduced and the positive impacts towards nature positive increased through this PDCA cycle of analysis and review of solutions.

\*LEAP analysis: A process proposed by the Task Force on Nature-related Financial Disclosures (TNFD) to systematically assess nature-related risks and opportunities on a scientific basis. The acronym LEAP stands for Locate, Evaluate, Assess, and Prepare.

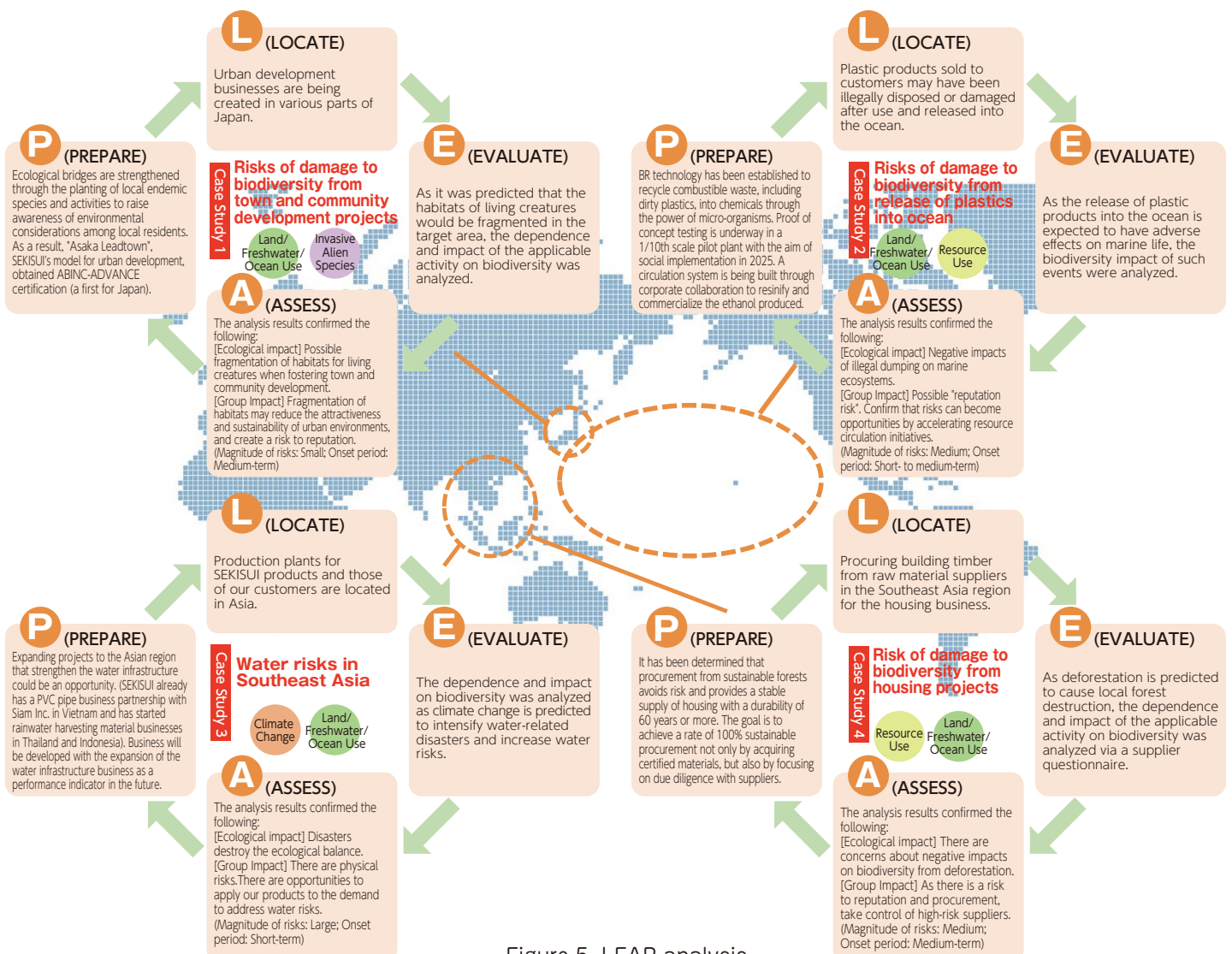


Figure 5. LEAP analysis

### 4-3. Consideration of the Impacts of Business Activities on Biodiversity

The following factors are considered to have impacts on biodiversity in the Group's business activities (see Figure 6).

With the aim of realizing an earth with maintained biodiversity (i.e. nature positive), the

extent to which SEKISUI's business activities, mainly production activities, have transitioned to business management that decouples reduction of environmental impacts was examined.

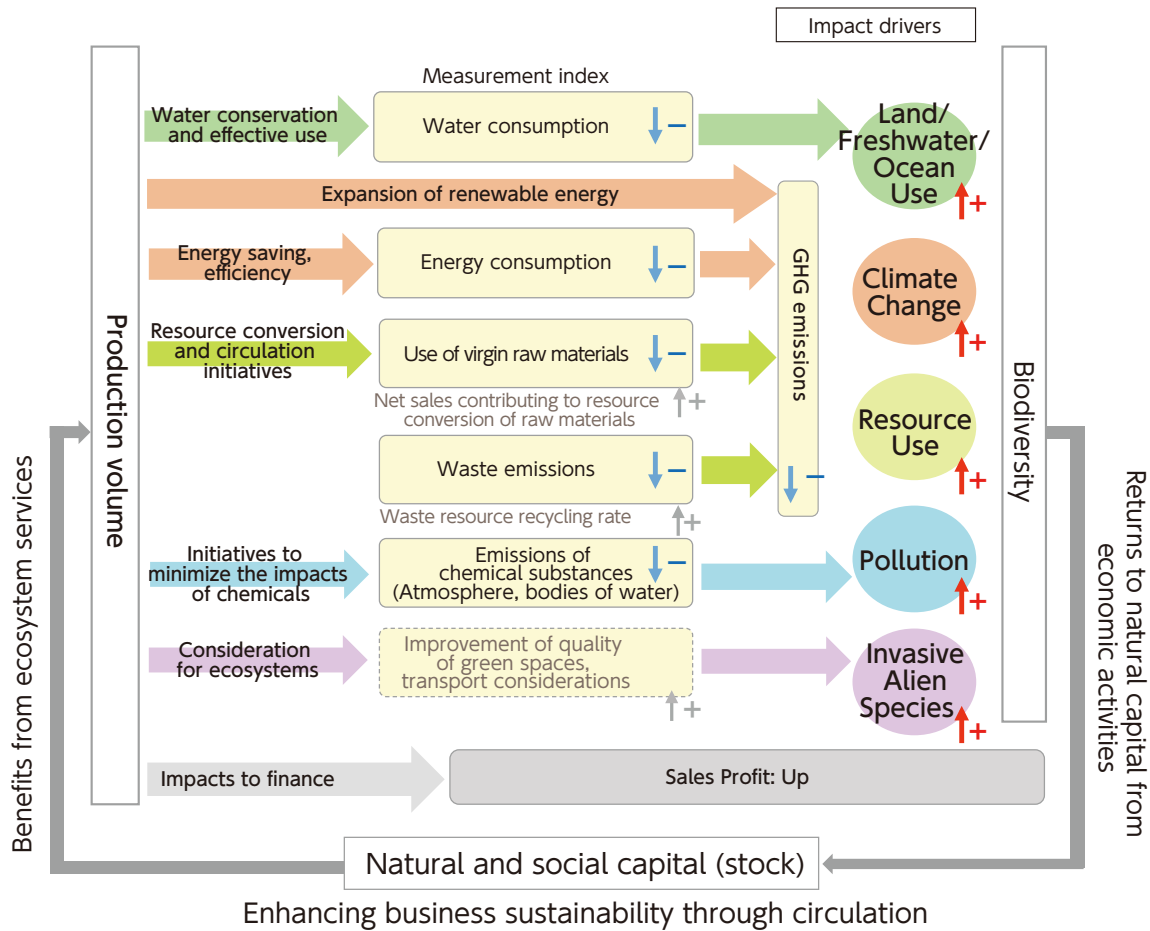


Figure 6. Impact paths based on "environmental indicators in business activities" affecting biodiversity\* "SEKISUI Decoupling Nature Model"

\*Impact path: Pathways through which corporate activities impact on the company's future finances.

For four of the five impact drivers that impact biodiversity, with the exception of invasive species, the decoupling of environmental impact indicators with respect to production was verified by comparing the increase or decrease to FY2016. The results are shown Figure 7.

Decoupling was confirmed for water intake, greenhouse gas emissions, and VOC emissions with respect to changes in production volume. In other words, negative impacts on nature (natural capital) is reduced while maintaining production volume.

On the other hand, the use of energy and virgin raw materials and waste emissions were confirmed to be linked to production volumes. It was found to be necessary to strategically transition towards decoupling in order to achieve the long-term goals.

In the current mid-term plan (2023-2025), these suggestions have been taken into account and action items have been set.

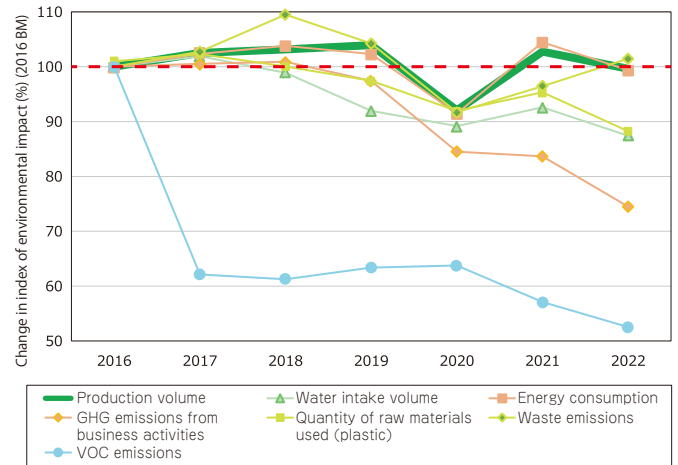


Figure 7. Confirmation of decoupling of production activities and environmental impacts affecting biodiversity.

[Overview]

The following three indicators have been set and progress is being monitored with the aim of realizing an "earth with maintained biodiversity" as set out in the long-term environmental vision for 2050:

- 1) Rate of return on natural and social capital
- 2) Rate of return on biodiversity
- 3) Rate of return on plant biomass

In the future, targets and management indicators will be set for "use of resources" and "land", which are important impact drivers, in order to reduce negative impacts and expand positive impacts.

In the current medium-term management plan (2023-2025), the seven initiatives described in "4-2. Strategies Developed from Analysis Results" will be pursued. To demonstrate progress on these initiatives, particularly important management indicators and targets are shown below.

The first step is to shift awareness of the

initiatives that have already been launched to activities that take biodiversity (natural capital) into consideration, and to consider ways to reduce negative impacts on nature.

The impacts and reliance on nature (natural capital) is reaffirmed and key aspects of nature are identified.

KPI	Rate of return on natural and social capital from corporate activities	Rate of return to the important aspects of nature	Procurement policy penetration rate among suppliers	Scores for the quality of green space at business sites using the Land Use Score Card®	Monetary support for society's natural capital return activities	
Impact drivers to be evaluated	Four impact drivers other than invasive alien species	Four impact drivers other than invasive alien species	Resource Use	Land use	Five impact drivers	
Links with the seven initiatives	(i) (ii) (iii) (vi)	(i) (ii) (iii) (vi)	(iv) (vii)	(i)	(v)	
Target	2025	95% or more	Set baseline	100% penetration rate	+3 points (compared to 2022)	Expand (compared to 2022)
	2030	100% or more	Reducing negatives	Sustainable procurement	—	—
	2050	Maintain 100% or more	Turn to positive	—	—	—

\*7 initiatives: (i) Review of manufacturing processes (ii) Review of nature-positive product design (iii) Expansion of contribution through products to enhance sustainability (iv) Strengthen initiatives in raw material procurement (v) Support social transformation activities (vi) Human resource development (vii) Collaboration with stakeholders

## 5-1. Rate of Return on Natural and Social Capital from Corporate Activities and Rate of Return on Narrowly Defined Nature Aspects

Rate of return to natural and social capital from to corporate activities (= SEKISUI Environment Sustainability Index): 127.3%

Rate of return to the impacts regarding the aspect of Nature

• Rate of return to biodiversity: 38.0% • Rate of return to plant biomass: 67.8%

In the environmental long-term vision "SEKISUI Environment Sustainability Vision 2050", SEKISUI CHEMICAL Group aims to realize "an earth with maintained biodiversity". For this reason, initiatives that utilize the net positive concept regarding ecosystems are promoted. (See Figure 8)

As an integrated index for confirming the degree of progress toward the environmental long-term vision, the rate of return to natural and social capital is calculated as the "SEKISUI Environment Sustainability Index". In FY2022, the index score was 127.3%, an increase of 9.6 percentage points compared to FY2021. This is due in particular to the contribution made by products and the increased contribution to the reduction of greenhouse gas emissions. This shows the contribution to climate change mitigation, which is one of the impact drivers of biodiversity.

Until FY2022, the rate of return has been calculated using MiLCAver 2.1 (with IDEA ver 2.1). From FY2023, the calculations will utilize MiLCA ver 3.1, which was updated in conjunction with the update to IDEA ver 3.1. This updated version improves the accuracy of data on impacts on biodiversity, including impacts from chemicals and land use. The updated database will help us to be even more aware of the impacts of our efforts in the future.

Rate of return to natural & social capital  
FY2022: 127.3% (using MiLCA ver 2.1)  
FY2022: 97.6% (using MiLCA ver 3.1)

From FY2023, the latter will be used as a baseline to assess and confirm the growth in returns.

### Calculation method

Using the LCA calculation system MiLCA, which utilizes the LIME2 concept, the negative and positive impacts of the Group's corporate activities on natural and social capital were calculated as a rate of return using the following formulation:

Rate of return to natural and social capital (%) =  
(Return to natural and social capital / use of natural and social capital) x 100

SEKISUI Environment Sustainability Index (2022)

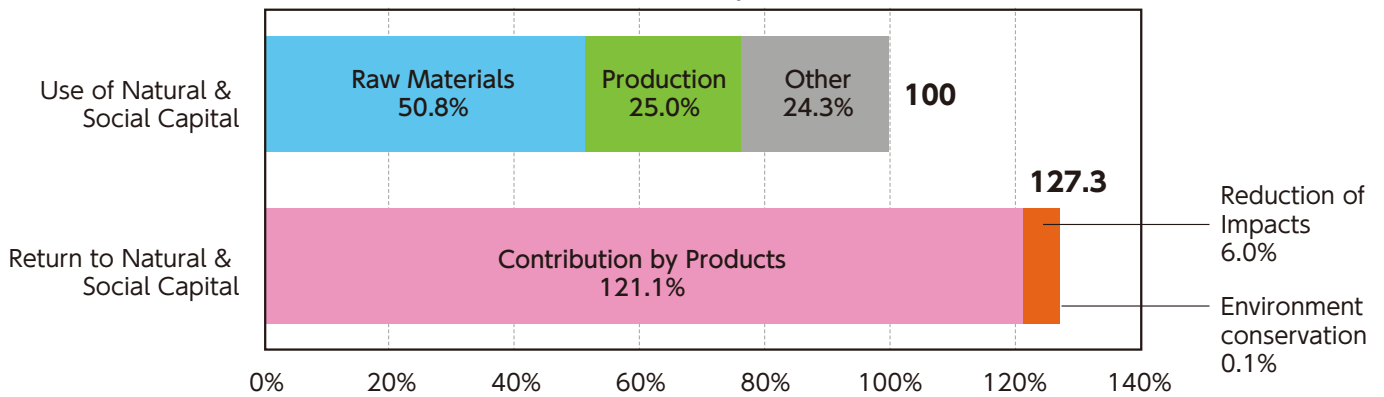


Figure 8. Rate of return to natural capital from corporate activities.

For "Return to nature and social capital" in the above figure, the impacts on plant biomass (primary plant production) and biodiversity (number of extinct species of organisms) is ascertained and monitored as the impacts (rate of return) on natural capital (nature aspect). The rates of return to plant biomass and

biodiversity are shown in Figure 9. Both have yet to reach rates of return of 100% or more, but corporate activities toward nature positive by addressing environmental issues such as climate change and resource circulation are steadily being implemented.

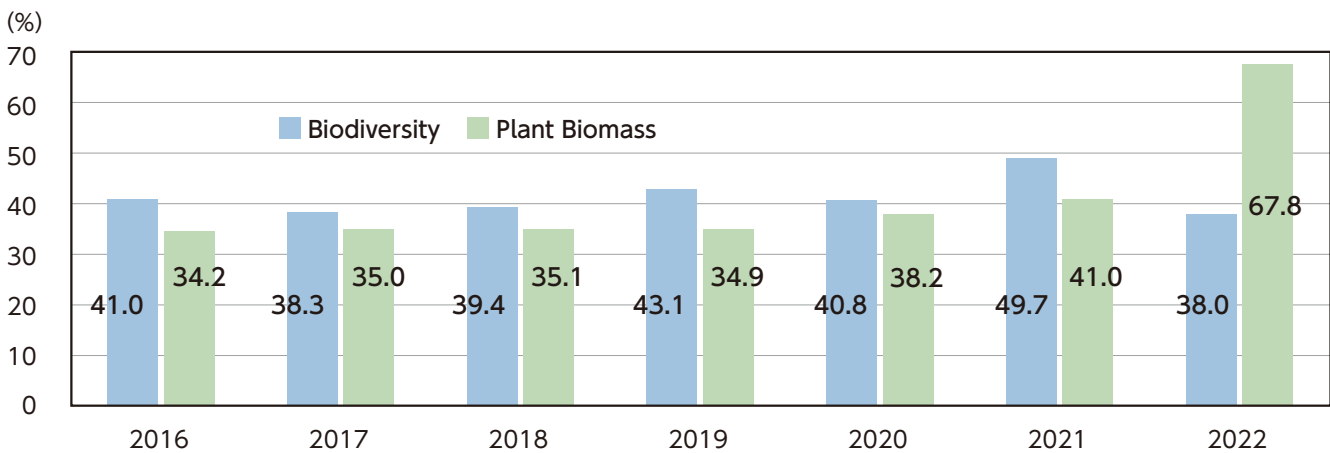


Figure 9. Impacts (rate of return) of corporate activities on the two aspects of nature

In FY2022, the rate of return on plant biomass increased. Negative impacts with regard to land use have decreased and positive impacts have increased due to improvements in the quality of green spaces at production sites and biodiversity considerations in town and community development projects.

With regard to biodiversity, products supporting technological advances in IT equipment have reduced the negative impacts on pollution and resources, but this effectiveness has decreased, which may have resulted in a lower rate of

return.

Although these rates of return are positioned to show the impacts on natural and social capital, including biodiversity, the assessment methodology does not allow for an assessment of the impact on invasive species, which is one of the impact drivers. It is also an average rating, rather than a rating for each area in which the Group operates.

Recognizing this, the Group will strive for a comprehensive understanding of risks, and will also consider methods and indicators to directly assess key impacts moving forward.

## 5-2. Other Relevant Indicators

KPI		Procurement policy penetration rate among suppliers	Scores for the quality of green space at business sites using the Land Use Score Card®	Monetary support for society's natural capital return activities
Impact drivers to be evaluated		Resource Use	Land use	5 Impact drivers
Links with the seven initiatives		(iv) (vii)	(i)	(v)
Target	2025	100% penetration rate	+3 points (compared to 2022)	Expand (compared to 2022)
	2030	Sustainable procurement	—	—
	2050	—	—	—

Of the key impact drivers currently identified, the penetration of the procurement policy for suppliers is considered to be important for the use of resources, and have set a penetration rate target and are working to confirm it.

In manufacturing, land use is another impact driver that is directly influenced by production sites. Activities that serve as ecological bridges to avoid fragmenting the habitats of local flora and fauna have been ongoing for some time. The improvement of the state of the land is measured by the increase in points in the Land Use Score Card® used in this activity.

As shown in Figure 4, SEKISUI Biodiversity Grand Design, in Section 4-2, the Group considers it important not only to work towards returns to natural capital through its corporate activities, but also to support returns to natural capital by society.

The "Innovation Inspired by Nature Research Support Program", which has been ongoing

since 2002, is an example of supporting activities for social change.

The program provides grants to researchers for the development of biomimicry technology, believing that learning from the wisdom of nature will lead to the realization of a nature-positive society. By providing this grant to researchers outside the company, a cumulative total of 294 (as of the end of March 2023) technological developments have been supported.

The setting of indicators and other measures to stimulate such activities will be considered in the future.

In addition, water risk assessments have already been performed in the areas where SEKISUI conducts business activities. In the future, water risks will also be assessed and examined according to their importance, including how they impact on the biodiversity of drainage basins.

SEKISUI CHEMICAL Group's aim to realize nature positive is the same as that set out in our long-term environmental vision, which is to "realize an earth with maintained biodiversity" ; in other words, to maintain a return on natural and social capital of at least 100%.

Hence, the Group endorsed the concept of the TNFD Forum and joined in June 2023.

In the future, awareness of important aspects will be further developed in natural capital. LEAP analysis and other approaches will be used to solve issues related to natural capital, and proceed with initiatives that do not create trade-offs with other methods of solving environmental issues.

The group's comprehensive awareness of the impact and dependence on the five impact drivers, as well as the understanding of the associated risks, are still insufficient.

In the future, area-by-area assessments will be conducted as appropriate to identify key impacts and develop strategies to mitigate negative impacts.



SEKISUI CHEMICAL Group is expanding its products and businesses that contribute to solving social issues. However, on the other hand, SEKISUI has not yet necessarily had positive impacts on global environmental issues or on the regions in which the Group operates. The Group believes that it is possible to contribute to solving the challenges of both climate change and biodiversity by recognizing the risks posed to businesses and mitigating those risks. Furthermore, developing strategies and promoting initiatives to turn risks into opportunities will lead to improved corporate sustainability. Through this report (TNFD) from the perspective of biodiversity, further risk analysis were able to be carried out from various angles related to sustainability.

In the current medium-term management plan (2023-2025), solutions to multiple environmental issues will be considered and implemented that do not result in trade-offs.

This attitude will lead to the simultaneous realization of the goals set out for all environmental issues; that is "achieving carbon neutrality" for climate change issues, and "realization of an earth with maintained biodiversity" for biodiversity issues.

The Group will continue to promote initiatives to achieve our long-term goals.