



TCFD

Task Force on Climate-related Financial Disclosures

Report 2020

SEKISUI CHEMICAL Group's Response to Climate Change (2020): Information Disclosures based upon the TCFD Statement of Support

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This TCFD-based disclosure report details SEKISUI CHEMICAL Group's climate change-related efforts as of FY2020, and is updated from the previous fiscal year's disclosures.

There are three major changes from the previous year, as follows:

- Positioning climate change issues in the long-term vision **Vision 2030** and new medium-term management plan **Drive 2022**
- Establishment of long-term climate change targets
- Results of previous initiatives, and future initiatives to be implemented under new environmental medium-term plan, "SEKISUI Environmental Sustainability Plan – Accelerate II"

Commitment to Action

Under our long-term vision, **Vision 2030**, beginning from 2020 we will ramp up our pursuit of two approaches—expanding existing businesses by innovating products and businesses, and creating new businesses by creating and capturing new business foundations—while focusing on ESG management. SEKISUI CHEMICAL Group will double its business in 2030, 10 years, by contributing to solving issues of natural and social environment, including climate change, more than ever through its businesses.

Enhancing contributions to problem solving from a long-term perspective is directly linked to "improving social sustainability". In order to realize a sustainable society, we support the foundation of LIFE and will create "peace of mind for the future".

When addressing environmental initiatives on issues such as climate change, resource circulation, and water risks, risk predictions for 2050 are scientifically backed and clearer than in many other areas. As a result, an environmental vision for 2050 was formulated and then back-casted to create a medium- to long-term roadmap for 2030.

"Environmental Sustainability Plan – Accelerate II", meanwhile, lays out initiatives and targets for the three years beginning from FY2020.

Governance System

Recognizing important management risks related to climate change, the Environmental Subcommittee formulates strategies and targets and manages progress under the oversight of the Board of Directors. Decisions of the Environmental Subcommittee are deliberated upon by the Sustainability Committee as well as, in the case of serious issues, the Board of Directors.

Risk Management

Major risks, including those related to climate change, are managed under the company-wide risk management system.

Strategy

SEKISUI has formulated four scenarios based around two axes: 2°C vs. 4°C of warming, and centralization vs. diversification of company-wide businesses. Medium-term management plans are formulated based on these four scenarios (considering the risks and opportunities presented by each), and on appropriate strategies for mitigating said risks and accentuating said opportunities.

Indicators and Targets

The "SEKISUI Environmental Sustainability Plan – Accelerate II", establishes medium-term targets for climate change and carry out management accordingly. We have established a long-term target of zero greenhouse gas emissions from corporate activities by 2050. Back-casting from this target, we have also set a milestone of switching purchased power to 100% renewable energy by 2030. To this end, we will promote the conversion to renewable energy through our Smart Heim Denki business, as well as through application of our new ESG investment framework established in FY2020.

List of Climate Change Initiatives

■ : Internal policies or business development
■ : External efforts such as awareness campaigns

Mitigation

Adaptation

2017

Began commercialization of room temperature processing of film dye-sensitized solar cell

Commenced Environment-Contributing Investments (12 billion yen over 3 years), promoted internal support measures for global warming

Began sale of "Smart Power Station GR"

- Began operation of #3 production line for interlayer films for laminated automotive glass at Mexico plant
- SEKISUI "MIGUSA" tatami mats received "Cool Japan Award 2017"

Established world-first, revolutionary production technology to transform "garbage to ethanol"

"Cross-Wave" included as example in "Adaptation Good Practices by Japanese Private Sector Business" (based on "FY2017 Climate Change Adaptation Effect Visualization Project", Ministry of Economy, Trade and Industry)

"Cross-Wave" was introduced as part of "business contributions to adaptation" at COP23 (23rd UN Conference of the Parties on climate change) (Ministry of Economy, Trade and Industry side event)

Began sale of new "Choshin LEVOL" home rain gutters

2018


Increased production capabilities in Europe for interlayer films for laminated glass and raw material resins

Began sale of new "Smart Power Station FR"

First company in chemical sector, worldwide, to acquire SBT (Science-Based Targets) certification

Commenced demonstration project for aggregating resources through virtual power plant construction

Introduced as an example of businesses helping to "reduce GHGs throughout global value chain via their products", at COP24 (24th UN Conference of the Parties on climate change) (Official Japanese side event sponsored by Ministry of Economy, Trade and Industry)



Commenced SEKISUI CHEMICAL Group town planning project: "SEKISUI Safe & Sound Project"




Commissioned for comprehensive preventative maintenance and operation of sewage duct for Kashiwa City (Chiba Prefecture)


2019

Endorsed TCFD (Task Force on Climate-related Financial Disclosures)

Selected as a climate change A-list company by CDP




Received Ministry of Land, Infrastructure and Transport Grand Prize for the Global Environment: Development and popularization of "Energy Self-Sufficient House"




Commenced "Smart Heim Denki" electricity trading service

Achieved sales ratio of 73% of houses with ZEH specification in FY2018



Disclosure in line with TCFD guidelines (Disclosed climate change preparations, risks and opportunities, strategies, etc.)

Began sale of "New Smart Power Station Series": Improves convenience and peace of mind of energy self-sufficient house, by strengthening IoT functionality




Release of Ministry of the Environment "Climate Change Adaptation Guide for Private Sector Business" (consulted by production committee)

Added large-scale high-drainage systems, which improve efficiency of rainwater drainage, to lineup


"Asaka Leadtown" listed in 2019 Environmental White Paper

More resilient Smart Heim: Provided homes that safeguard transportation, electric power and water, allowing residents to shelter at home during increasingly common large-scale disasters



2020

Selected as a climate change A-list company by CDP



Commenced **Drive 2022** medium-term management plan (ESG investment framework), based on **Vision 2030**

Established target of zero GHG emissions by FY2050

Established goal of converting purchased power to 100% renewable energy by FY2030

Included climate change as management risk in securities report

Join RE100

Large-scale model town created by Asaka City and SEKISUI CHEMICAL Group, to contribute to realization of the SDGs: "Asaka Leadtown"

< Positioning of Climate Change Issues >

[Long-term Vision]

In 2019, Sekisui Chemical Group formulated a long-term vision, **Vision 2030**, that expresses the direction of the entire company. Following this long-term vision, beginning from 2020 we will expand our existing businesses through innovating products and businesses, and create new businesses by creating and acquiring new business foundations—while focusing on ESG management. SEKISUI CHEMICAL Group aims to double business in 10 years, by 2030, by contributing to solving issues related to the natural and social environment, including climate change, more than ever directly through our businesses.

Enhancing contributions to problem solving from a long-term perspective is directly linked to “improving social sustainability”. In order to realize a sustainable society, we support the foundations of LIFE and will create “peace of mind for the future”.

management, and the improvement of efficiency by improving ROIC. The other is the “SEKISUI Environmental Sustainable Index”^{*1}, which is an economic index of the values that corporate activities give to natural capital and social capital as the degree of contribution to problem solving (impact on the earth and society).

The aim of "SEKISUI Sustainable Spread" is to improve the ROIC, which indicates the efficiency of business operations in the medium term and also continuously, and to solidify the management foundation to improve the long-term sustainability of management. Regarding the “SEKISUI Environmental Sustainable Index”, we believe the expansion of Sekisui Chemical Group's social value is continue to aim for 100% or higher, double our business, and continue to maintain a high index even if we continue to grow.

^{*1} SEKISUI Environmental Sustainability Index: This index quantifies the positive and negative impact on natural capital caused by SEKISUI CHEMICAL Group's business activities and use of natural capital. The index is calculated using the Japanese LIME2 impact assessment method.

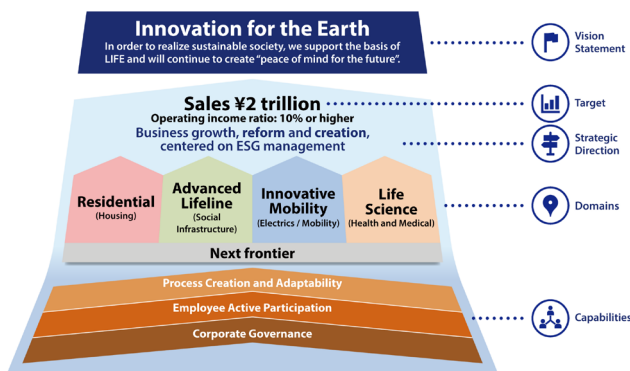


Fig.1:SEKISUI CHEMICAL Group's long-term vision, **Vision 2030**

[Management Indicators]

Realizing that sustainable management capabilities are required to continue to expand our contributions to solve social issues and grow profits, in 2020 we established two indicators for measuring economic and social values. One of them is “SEKISUI Sustainable Spread”, which measures the ability to sustain management, which is the difference between the reduction of capital cost, which is an important issue in ESG

[Medium-term Management Plan / Important Areas for Engagement]

SEKISUI CHEMICAL Group has established “**Drive 2022**” FY2020-2022 three-year medium-term management plan as the first step in achieving the goals of the long-term vision. The core philosophy of this plan is to drive sustainable “growth”, “reform” and “preparation”, so as to double our business and expand contribution to social issues. This translates to formalizing ESG management to solidify operations, and accelerating the next stages of growth and preparation.

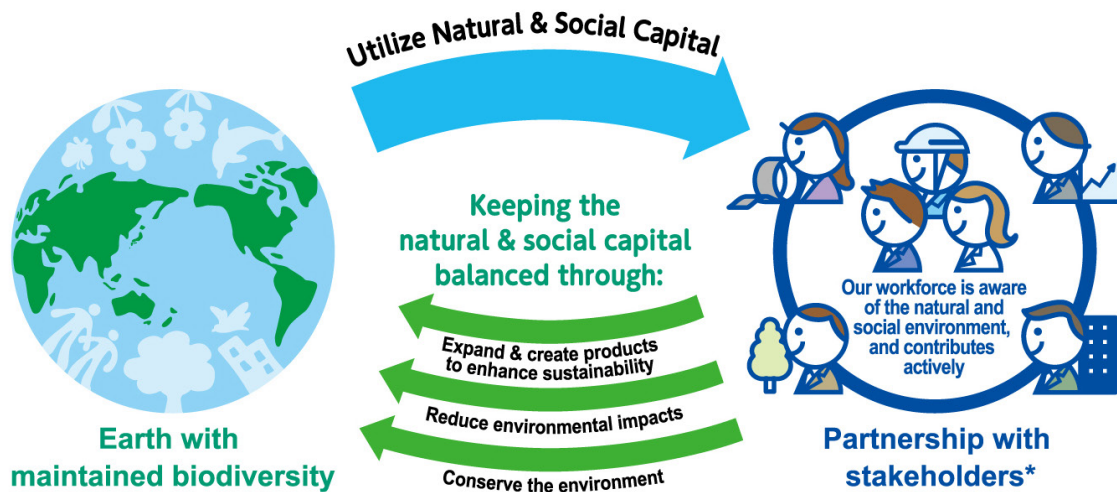
Strengthening governance, DX (digital transformation), environment, human resources, and fusion are the ESG foundations at SEKISUI that need to be focus on from 2020. Regarding “environment” in particular, the scenarios predicted by the TCFD previous fiscal year have made it clear that climate change will have a serious impact on business in both the short- and long-term, which will provide both risks and opportunities. In response to this, we have identified climate change as one of the important

area of engagement for achieving the goals of our long-term vision. Additionally, we will establish an ESG investment framework for important ESG management-related initiatives, including those related to climate change, and carry out strategic management from a long-term perspective.

[Long-term Environmental Targets]

Recognizing “mitigation and adaptation of climate change” as the most important “environmental”

issue, targets are established for 2050 and then back-casted. In consideration of what should be in the medium term, we have formulated our Environmental Medium-Term Plan, “SEKISUI Environmental Sustainability Plan – Accelerate II”. Additionally, our approach to environmental issues, including climate change, by 2050 is as depicted below (SEKISUI Environment Sustainability Vision 2050).



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

Fig.2: Environmental approach in 2050, “SEKISUI Environment Sustainability Vision 2050”

Our vision for the planet in 2050 is one where “biodiversity is maintained” in which many of the issues facing us have been resolved, and biodiversity is maintained in a healthy state. Recognizing that our corporate activities rely on the planet's natural and social capital, we will work to resolve global issues such as climate change, water risks, resource depletion and ecosystem degradation, and to replenish that capital through three activities: (1) expansion and creation of products to enhance sustainability; (2) reduction of environmental impacts; and (3) conservation of the natural environment. In order to achieve these goals and accelerate the return of natural capital, we will pursue initiatives not only as a company but also in cooperation with our stakeholders.

[Current Results]

Recently, the importance of solving long-term challenges such as climate change and preparing for effects that are starting to occur has grown increasingly urgent. In response, as of 2017, in order to strengthen awareness of our initiatives and increase our contribution to solving these issues, we implemented the “SEKISUI Environmental Sustainability Index” as a key indicator for tracking progress. In 2019 we achieved a return rate of 104.5% under this index. This exceeded the target of 95% that was established under the medium-term environmental plan which we have been pursuing for the last three years since 2017, the “SEKISUI Environment Sustainability Plan – Accelerate” . Developments that have supported this progress is

the market expansion of Environment-Contributing Products, which includes reduction of greenhouse gases in the supply chain through increased sales of houses with ZEH*2 (net-Zero Energy Houses) specs.

*2 ZEH (net-Zero Energy Houses): Combines high insulation, energy-saving features, HEMS, solar generation systems, etc., to generate energy that exceeds energy consumption of that house, and achieve zero or positive energy balance.

[SEKISUI's Relationship to Climate Change Issues]

As mentioned earlier, the Environmental Sustainability Index measures SEKISUI's level of impact and contributions across a range of environmental issues. For FY2019 we achieved a score of 84.9% in terms of impact and 94.7% in terms of contributions. This score shows the size of our impact, as well as our ability to contribute significantly to resolving social issues through our businesses. The results reinforce the importance of climate change and our corporate responsibility in addressing it as central part of the contributions we make through our businesses.

<External Evaluations of Information Disclosure>

Based on our disclosure of climate change-related information, SEKISUI was selected as an A-list company by CDP in 2019 (Fig. 3).



Fig.3: CDP Climate Change A-List

2-1. Oversight by the Board of Directors, and the Role of Directors in Evaluating and Managing Risks and Opportunities

In response to external environmental management risks such as climate change, appropriate measures, proportionate to the size of risks, are explored and decisions to act are taken under oversight by the Board of Directors.

Regarding SEKISUI's influence on external environmental issues such as climate change and social responsibility, until FY2019, in our effort to alleviate the company's own impact and to contribute to solving these issues, Sekisui operated under the governance system displayed in Fig. 4(a). Executive directors from each divisional company participate in the Environmental Subcommittee (held twice per year), which addresses environmental issues and strategies. The subcommittee is chaired by the director in charge of the ESG Management Department. The subcommittee establishes targets related to climate change while taking business

strategies under consideration, discusses strategies, and tracks progress. Resolutions made at this committee are reported to and deliberated upon by the CSR Committee (held twice per year), which serves as a venue for discussing sustainability of corporate management. The CSR Committee is attended by the president and other top executives of each divisional company, as well as employee representatives. Matters of high importance are then reported to and deliberated upon by the Board of Directors.

In FY2020, SEKISUI's company-wide vision, **Vision 2030**, entered into effect. As of 2020 we implement governance under the newly renamed Sustainability Committee, and will leverage our management ability to sustain business so as to continuously expand profits and increase our ability to contribute to society (Fig. 4(b)).

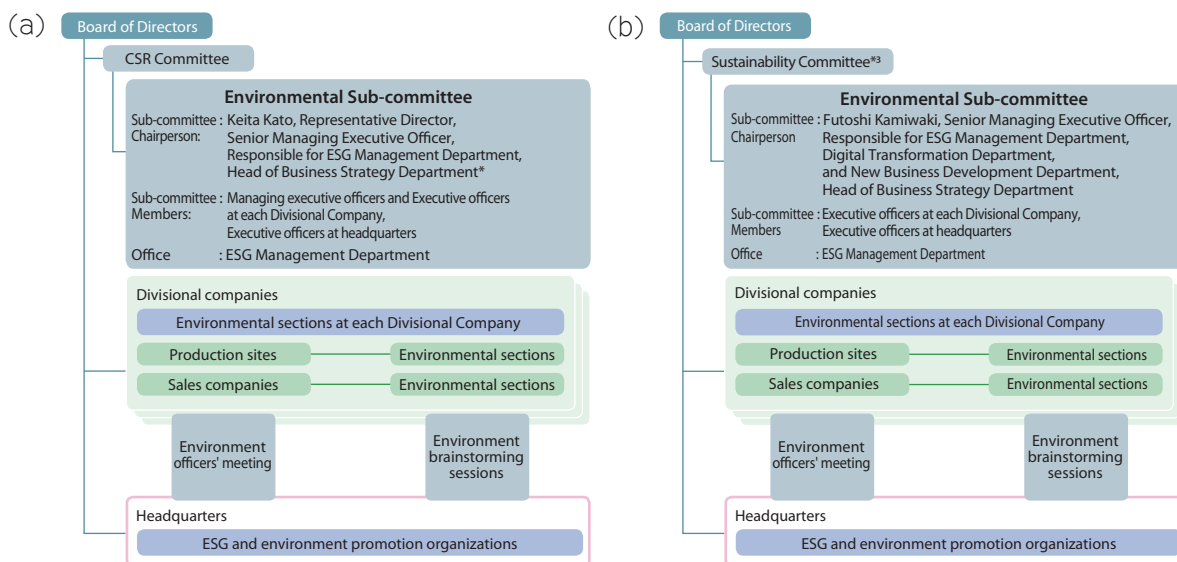


Fig. 4: Governance system in relation to issues of climate change; (a) until FY2019, (b) from FY2020

*3 As of April 1, 2020, the CSR Committee's name was changed to the "Sustainability Committee"

Examples of climate change-related decisions that have been deliberated upon by management

- Previous medium-term management plan (including Environment-Contributing Investments framework): April 2017 Board of Directors
- Decision on supply chain initiatives and SBT certification and application: August 2017 policy meeting, September Environmental Subcommittee
- Expressing support for TCFD: November 2018 management meeting
- Set target of switching purchased power to 100% renewable energy by FY2030: November 2019 management meeting
- Medium-term management plan (including ESG investment framework): May 2020 Board of Directors
- Content of annual securities report: June 2020 Board of Directors

3-1. Integrated Risk Management, Including Climate Change

In regards to management risks from the external environment, including climate change, SEKISUI has constructed an integrated risk management system that combines risk management (designed to prevent the full range of management risks) with crisis management (for addressing risks when they do occur) (Fig. 5). Officers in charge of risk management oversee this system, establish priority areas based on an analysis of risks identified by relevant persons at business departments, operating companies and production sites, and implement ERM*4 comprehending both the aforementioned sectional risks and major

company-wide risks. Information on these risks is shared through internal management meetings, the CSR Committee, Board of Directors and each subcommittee, and appropriate responses are explored. Matters related to environmental risks, including climate change, are reported to and deliberated upon by the Environmental Subcommittee, led by the executive director in charge of the ESG Management Department. Progress on responses to these risks is also tracked.

*4 ERM: Enterprise Risk Management. Enterprise risk management refers to company-wide mechanisms and processes for company-wide, comprehensive risk management and risk management activities.

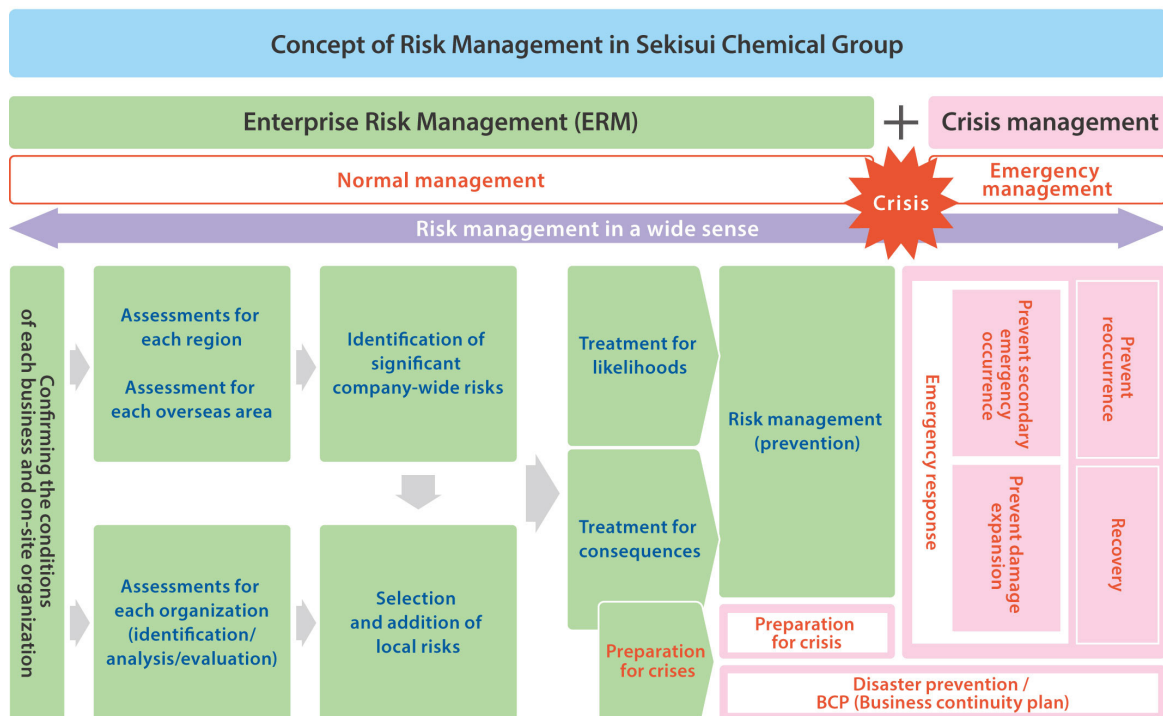


Fig. 5: SEKISUI CHEMICAL Group's risk management system

3-2. Evaluating and Managing Climate Change-related Risks and Opportunities

At SEKISUI, risks to management and sustainability from the external environment are discussed through internal management meetings, the CSR Committee (renamed as the Sustainability Committee in FY2020), Board of Directors and other management meeting, as necessary, and decide on appropriate responses. We also consider internal and external opinions to take advantage of opportunities into our business strategy planning. Regarding climate change, as expressed in our TCFD-based disclosures the previous fiscal year, we have explored measures to recognize risks and opportunities, and what can be done to mitigate risks and convert them into opportunities. Reconfirming our awareness of climate change as a serious external risk, we took such measures under consideration while exploring management plans for medium- to long-term strategies, and formulated an environmental medium-term plan that was approved by the Board of Directors. We will implement PDCA cycles to pursue climate change-related initiatives, based on the indicators and goals set for the items that need to be managed in order to promote this medium-term plan. From this fiscal year onward, as we implement climate change-related initiatives, we will not only grasp SEKISUI's influence on climate change and work to mitigate negative effects, but will also explore the risks posed to our company by climate change and how best to increase the sustainability of our own businesses.

<Evaluating and Managing Management Risks, Including Climate Change>

Recently, the need to accelerate climate change mitigation and adaptation measures, and to evaluate risks from a more long-term perspective, has increased. As a result, in FY2019, in order to accelerate risk evaluation and climate change measures, SEKISUI carried out risk assessments based on 2°C or less and 4°C warming scenarios. Guided by these assessments, from FY2020 we have begun exploring businesses capable of converting risks into opportunities. Regarding specific management practices, we pursue

progress management based on established medium-term business management plan and medium-term environmental management plans.

<Evaluating and Managing Opportunities Related to Climate Change>

As with similar opportunities presented by other societal and environmental issues, SEKISUI looks for strategies by which it can convert risks presented by climate change into opportunities, by considering how the company can contribute to addressing climate change through its products, businesses and services. Sekisui relies on our Environment-Contributing Products Certification Committee*5 and External Advisory Board*6 in these efforts. Executive officers and persons-in-charge at organizations responsible for business planning and technology development at each divisional company share as necessary these discussions to facilitate implementation into business strategies.

In FY2019, in addition to the previously mentioned Smart Heim Denki, drinking water storage systems and temporary storage-type emergency toilet systems, a variety of products to contribute to climate change mitigation and adaptation, such as drainage ramps, were registered. Regarding these products, external advisors suggested we focus on not only expanding contributions toward addressing climate change, but also simultaneously on other environmental issues such as resource circulation and ecosystem degradation.

Additionally, while an in-house Environment-Contributing Products system has been in place since 2006 to promote expansion of products that contribute toward solving issues such as climate change, in FY2020 that system was updated. The new Products to Enhance Sustainability system now focus on ensuring such issues are addressed in a sustainable manner. Issues that demand long-term engagement, such as climate change, require not only increasing contributions toward solving current issues, but also greater corporate and product sustainability

to ensure long-term product and business development. This necessity was the background behind updating the Environment-Contributing Products system.

Regarding specific management practices, we pursue progress management based on established targets of the medium-term business management and medium-term environmental management plans. By expanding the FY2020 sales target for products to enhance sustainability to 800 billion yen--thus contributing to solving environmental issues, such as climate change, and to converting risks into opportunities--we will accelerate growth toward doubling business by 2030.

*5 Certification Committee: A committee responsible for certifying products that contributes to a high degree of solving environmental and social issues, according to in-house standards. Committees are composed of executive officers and other persons in positions of responsibility, as required by the business or technology of those products in question.

*6 External Advisory Board: A meeting comprising five external experts, as well as the aforementioned certification committee members, and with the representative director in charge of the ESG Management Department serving as chair, which meets to exchange opinions on registration of Environment-Contributing Products.

<Converting Climate Change Risks into Opportunities>

Climate change risks can also offer opportunities. In response to long-term climate change risks, we back-cast to explore possible businesses and products and hold management meetings to discuss plans, before making decisions on business implementation. Below are examples of risk and opportunity assessment.

(1) Smart Heim Denki (greenlit in FY2018, business to commence in FY2019)

In the housing business, as one strategy for mitigating climate change, homes equipped with solar panels have been provided from an early stage. As a mitigation measure in Japan, conversion to renewable energy had been recommended. At the time of start-up there subsidies and other programs such as the FIT scheme were offered to promote those conversions. SEKISUI CHEMICAL Group housing, SEKISUI Heim,

with flat roof design suited for factory production, allows renewable energy-producing solar panels to be installed over a larger area. Among retail housing, this greatly reduces CO₂ while also contributing to economic savings for customers. Unfortunately the FIT scheme, which provided funds for surplus renewable energy produced in this way, has now come to an end. The lack of such incentives for returning profit to the consumer impeded further spread of solar panels. Renewable energy is extremely beneficial to the planet. To promote effective use of such energy, SEKISUI CHEMICAL Group began purchasing surplus energy produced by our customers with solar-equipped housing via our Smart Heim Denki Business, which we then use in our factories that manufactures houses. We are also pursuing development of services by which other customers may make use of this energy.

(2) Housing adapted for climate change

Recently, the effects of climate change have not been limited to only invisible regulatory risks, but now include more visible physical risks as well. For the past several years, flooding from extreme weather events has increased in regions around the world. In response, while striving to help mitigate climate change, we have also begun to offer new products and services, through a fusion of existing business such as housing and infrastructure that contribute to climate change adaptation.

When utilities get cut off during a disaster, damage can be exacerbated, and restoring. Utilities also takes precious time. In order to minimize damage from disaster, SEKISUI CHEMICAL Group pursues advanced housing proposals that contribute to adaptation, such as through development of large-scale batteries for storing renewable energy produced by the house's solar panel, or pursuing designs that place such batteries indoors or on the second floor so that they can be made available during a disaster. Additionally, through promotion of "drinking water storage systems", which utilize manufacturing of plastic water and sewage pipe technologies,

SEKISUI helps to secure drinking water and to allow for disaster preparedness on a regular basis.

(3) Disaster-resilient town planning

Disaster preparedness requires more than just individual homes that are adapted to withstand water damage due to the effects of climate change. The resilience of towns and regions, as a whole, is also required. At SEKISUI we have begun engaging in planning a resilient town, with “Asaka Leadtown”, constructed in Asaka City, Saitama Prefecture, as a model project. These towns are equipped with products such as RCP (large diameter Resin-Concrete Pipes) and “Cross-Wave” rainwater storage systems to provide temporary storage for rain water during extreme rainfall events or typhoons, and helping to prevent flooding of rivers and homes.

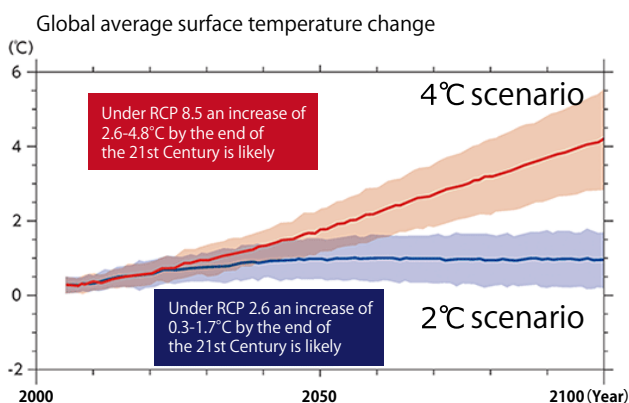
We also install “temporary storage-type emergency toilet systems” at parks, schools and other evacuation sites in various areas so as to reduce flooding damage and support recovery efforts.

4-1. Awareness of Risks and Opportunities

<Analysis of the Impacts of Climate Change Risks>

A variety of international institutions have formulated multiple climate change scenarios predicting what may occur over the next 100 years. In FY2018, in order to identify risks from climate change to SEKISUI and its businesses, and

reconfirming strategies to prepare for long-term risks, SEKISUI referenced global warming scenarios (RCP 2.6-RCP 8.5) from the recent UN IPCC (Intergovernmental Panel on Climate Change) Fifth Assessment Report (2014) and conducted an impact analysis.



Scenario	RCP 2.6	RCP 8.5
Surface temperature change	Less than 2°C	4°C or more
Atmospheric CO ₂ -eq concentration	Less than 500 ppm	700 ppm or more
Global mean sea level rise	0.4 m	0.7 m
Risks	Regulatory risks	Physical risks

Fig.6: IPCC climate change scenarios

According to the IPCC Fifth Assessment Report, the scenario with the lowest predicted amount of warming (RCP 2.6) will see a rise of around 2°C. The scenario with the highest predicted amount of warming (RCP 8.5) will see a rise of around 4°C. When carrying out climate change impact analyses for each business area, IPCC RCP 2.6 was used for SEKISUI's scenario of 2°C or less and RCP 8.5 was used for SEKISUI's 4°C scenario (Fig. 6). Strategies to prepare for long-term risks were explored based on these impact analyses. As part of this process, opinions were exchanged between related departments, external experts, internal and external think tanks, and others. This information was used as a basis of assessment for formulation of our long-term vision, **Vision 2030**. We also reconfirmed migration and physical risks for strategic growth fields toward 2030 (residential, advanced lifelines, innovative mobility, life sciences and, as a next frontier, energy) based on the 2°C and 4°C scenarios, with

reference to net sales, operating income, profitability and growth potential. Impact analysis of possible risks in each business field, and integrated results, are shown in table 1, below. Negative effects with a major financial impact on SEKISUI are treated as risks, while positive effects are treated as opportunities.

Table 1: Results of Climate Change Risks Impact Analyses

Type	Climate change risks	Financial Impact	Business risks	Business opportunities	Response / Actions by SEKISUI
Transition	Policy regulations	Carbon tax hike	<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 and RE100 membership
		Energy saving/ low carbon regulations	<Short-term> • Increase in capital investment to strengthen energy conservation and renewable energy <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 ₂ -regulation compliant products	• Establish ESG investment framework • Develop new energy creation technologies (Ex.: perovskite solar cells) • Review green procurement standards as appropriate • Standardize housing with ZEH specifications
		Policy	<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	<Short-term> • Increased need for technologies to reduce CO ₂ during waste incineration <Medium- long-term> • Increase in sales of new homes due to expansion of ZEH market due to from mandatory ZEH specs	• Develop technology for creating ethanol from garbage (Ex.: BR) • Utilize purchased power after FIT (Ex.: Smart Heim Denki) • Expand products that enhance sustainability (800 billion yen by 2022)
		Litigation	<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 rating systems
	Technology	Replacement to low carbon products	<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 Environment-Contributing Products that contribute to low carbonization	• Use LCA evaluations in planning, development and marketing • Use LCA evaluations in marketing • Explore development of products using bio-derived materials
	Markets	Change in consumer behavior	<Long-term> • Decrease in sale of new cars	<Long-term> • Increase in profitability from shift to higher-performance products • Expansion of market for ICT-related products	• Develop highly heat-resistant, high durability and other high performance products • Develop lightweight PV, heat dissipating products
		Market Uncertainty	<Long-term> • Investments to stabilize power supply for dispersed renewable energies	<Long-term> • Increase in sales of products to support a more dispersed society	• Sale of energy self-sufficient stand-alone housing • Development of resource circulation technologies (Ex.: BR)
	Reputation	Changes in consumer preferences	<Long-term> • Decrease in sales due to increased preference for "sharing" over "owning"	<Long-term> • Creation of new businesses to meet consumer preferences	• Begin services utilizing housing big data (Ex.: SMART HEIM Denki)
		Industry criticism	<Medium- to long-term> • Investor valuation decline for companies that do not decarbonize	<Short- to medium-term> • Secure stable financing by demonstrating compatibility with resource circulation	• Utilization of purchased electricity after FIT
	Physical	Acute	Frequent typhoons	<Short-term> • Damage such as increase in plant shutdowns and decrease in sales • Increase in flooding/flood control costs • Decrease in sales due to supply chain disruption	<Short-term> • Increase in needs for resilient infrastructure • Increase in sales of products for areas with a high level of water-related risks • Increase in needs for equipment/facilities for disaster preparedness
Heavy rain/ droughts			<Medium- to Long-term> • Increase in insurance costs		
Chronic		Changes in rainfall patterns	<Short-term> • Increase in costs for restructuring supply chain	<Short-term> • Increase in sales of heat insulating/heat shielding products	• Encourage changes on the part of raw material suppliers in accordance with procurement standards • Globally disperse production bases • Strengthen backup manufacturing systems in accordance with increase in illnesses
		Sea level rise	<Medium- to long-term> • Increase in heat stroke/other illnesses related to warming	<Medium- to long-term> • Increase in needs for pharmaceutical products/diagnostic drugs that contribute to treatments	
	Rise in average temperatures	<Medium- to long-term> • Increase in cooling costs			

Financial impacts in the chart are graded as low, medium or high according to the effect on related financial indicators, and details of risks and opportunities are listed as short-term (less than 3

years), medium-term (3-6 years) or long-term (6 years or more) according to the amount of time expected to transpire before impacts become apparent.

4-2. Explanation of Effect of Climate Change-related Risks and Opportunities on Organization's Businesses, Strategies and Financial Plans

< Effect of Issues Related to Climate Change on Businesses and Strategies >

The effects of climate change on businesses and strategies are explained below.

[Products and Services]

In regions looking to safeguard themselves against the increasingly common disasters caused by climate change, SEKISUI is able to offer products that will alleviate water damage risks, and contribute to building earthquake-resilient infrastructure. SEKISUI can provide highly durable water/sewage pipes and fittings that resist damage or leaks, water retention materials, and other similar products.

Ex. 1: Cross-Wave rainwater storage system

In FY2019, the "Cross-Wave" rainwater storage system, which allows for temporary underground storage of rainwater during heavyfalls, contributes to our green infrastructure business in Indonesia. For instance, the system is utilized in large-scale residential land developments. We have also built a positive relationship with the local water bureau. As part of climate change adaptation, markets have been expanding similarly in recent years in emerging nations experiencing economic growth, such as in China, Southeast Asia and India.

Ex. 2: Water service infrastructure piping such as PVC ESLON PIPES and fittings

To solve the infrastructural issues faced due to rapid urban growth in emerging nations and rapidly build resilient water and sewage infrastructures, SEKISUI has partnered with Vietnamese companies to accelerate development of businesses that offer water and sewage infrastructure piping products, such as PVC ESLON PIPES and fittings.

Ex. 3: Smart Heim Denki electricity trading service

In FY2019, in order to help mitigate climate change, SEKISUI began a new business related to

the use of renewable energy. To promote effective use of renewable energy, we announced Smart Heim Denki, a new electricity trading service that will purchase surplus energy from customers living in solar-equipped SEKISUI housing, for sale to other customers or for use during SEKISUI CHEMICAL Group business activities. Development of services such as these will contribute to building a more resilient society from an energy perspective.

[Supply Chains and/or Value Chains]

As regulations designed to mitigate the effects of climate change grow stronger, it will be necessary for suppliers to revise manufacturing processes and energy sources. If supplier measures are postponed, large increases in manufacturing costs may occur simultaneously, leading to higher costs of raw materials purchased by SEKISUI. Beginning in FY 2018, to stabilize raw material procurement and mitigate climate change on a global level, SEKISUI began using procurement guidelines to encourage raw material suppliers to establish GHG reduction targets and reduce emissions. Furthermore, to mitigate the risk of raw materials companies halting supply due to natural disasters caused by climate change, SEKISUI has established procurement networks that utilize multiple raw material suppliers. SEKISUI is also looking into relocating production bases from regions where natural disasters and other physical risks are predicted, to regions where risks are lower.

[Activities that Contribute to Mitigation and Activities that Contribute to Adaptation]

Mitigation: Policy interventions, such as mitigation initiatives, industry guidelines and carbon and energy taxes, are accelerating quickly. Failure to grasp these trends and pursue swift measures could increase reputation risks, as well as financial risks due to increased operating costs. To convert these risks into opportunities, we at SEKISUI have

demonstrated public commitment to achieving long-term goals through acquisition of SBT certification, and strive for effective reduction policies.

Additionally, based on assessments of the impact of climate change, both in terms of risks and opportunities, this fiscal year we established a long-term goal of zero greenhouse gas emissions by 2050, as well as a milestone goal of converting all purchased electric power to renewable energy by 2030. We also joined the “RE100” initiative, to promote proactive conversion to renewable energy, not just for our company but for society as a whole.

SEKISUI designated 12 billion yen, equivalent to over 0.3% of sales, to Environment-Contributing Investments over three years up to FY2019. While exploring effective reduction measures, we deployed an energy-saving investment incentive program utilizing internal carbon pricing frameworks, and proactively pursued GHG-reducing upgrades of production equipment. From FY2020 we will utilize the ESG investment budget of 40 billion yen we have established to promote conversion to renewable energy, including developing renewable energy promotion plans for proactive conversion of electricity used during production.

Adaptation: Preparing for the increased disasters and changes in lifestyles caused by climate change is essential. In addition to helping to build resilient infrastructures capable of withstanding disaster, SEKISUI also focuses on promoting and developing housing products, such as storage batteries, that support daily lives during and after disasters.

[R&D Investment]

All development projects are planned, researched and developed in consideration of environmental issues, and we are also promoting product planning to solve the issues associated with long-term climate change. One example of such research and development is perovskite solar cells, which are lightweight, highly efficient, compact, and are expected to produce more energy than

conventional solar cells. We are also moving forward with demonstrations of bio-refinery technology, for producing ethanol from garbage, with the aim of reaching practical implementation. This technology is a form of carbon capture and utilization (CCU), which could contribute significantly to climate change mitigation.

[Operations]

There are growing fears over increased plant shutdowns due to large-scale power outages caused by frequent natural disasters brought on by climate change, or over interruptions to material and product supply chains. Such shutdowns could have significant impact on business operations. SEKISUI has prepared for such disasters by establishing cogeneration systems at some of key manufacturing plants. We are also working to reduce risk by diversifying our raw material supply network.

<Effects of Climate Change on Financial Plans>

In order to mitigate climate change, it is necessary to convert to renewable energy for business activities. There are concerns, however, that under the current supply market, renewable energy costs may increase. However, as renewable energy technologies continue to develop, the cost of energy should in fact decrease.

Additionally, in regions facing an increased threat of floods due to climate change, the need for resilient water infrastructure is expected to grow. SEKISUI can expect to profit through the contributions we make in those areas, specifically through products such as water and sewage pipes and fittings for new construction in emerging nations, and pipe renewal services (such as the SPR Method) in advanced nations.

The global spread of regulations designed to achieve a low- or no-carbon society may also lead to a decrease in sales or profits, due to costs associated with GHG emissions or lost business opportunities. SEKISUI has begun to study in each business, considering the lifecycle, such as converting to renewable energy for production, or adopting low-carbon raw materials.

4-3. Analyses of Scenarios (Risks and Opportunities)

SEKISUI's strategy, based on our scenarios analysis, is described below. The climate change scenarios used are the aforementioned 2°C and 4°C scenarios.

< Examples of Scenario-based Analyses >

For the scenario analysis, multiple driving forces (including climate change) that can be expected to impact the future of each business field (residential, advanced lifelines, innovative mobility, life sciences and, as a next frontier, energy) were identified. Scenarios were constructed, taking future uncertainty into consideration, that focus on those driving forces that can be expected to have a significant effect on SEKISUI.

For instance, regarding innovative mobility, societies where zero-emission vehicles (ZEV) become mainstream versus those societies where internal combustion vehicles become mainstream is one possible driving force, and was used as an additional data axis against 2°C and 4°C climate

change scenarios while carrying out the analysis. In the advanced lifelines field, the advancement of recycling-based society is another possible driving force, and the development of a recycling society versus development of a non-recycling society was used as an additional data axis against 2°C and 4°C climate change scenarios while carrying out the analysis.

These scenarios were analyses were then integrated, with driving forces that we determined to be highly common in our business fields set as the data axis. The results are shown below. Social systems such as town building and energy sources serve as the axis affecting business, stretching from centralized (urban concentration, central management) to dispersed (population decentralization, local production for local consumption). The 2°C and 4°C climate change scenarios serve as the other axis, resulting in four future scenarios for SEKISUI's business in the four separate quadrants (Fig. 7).

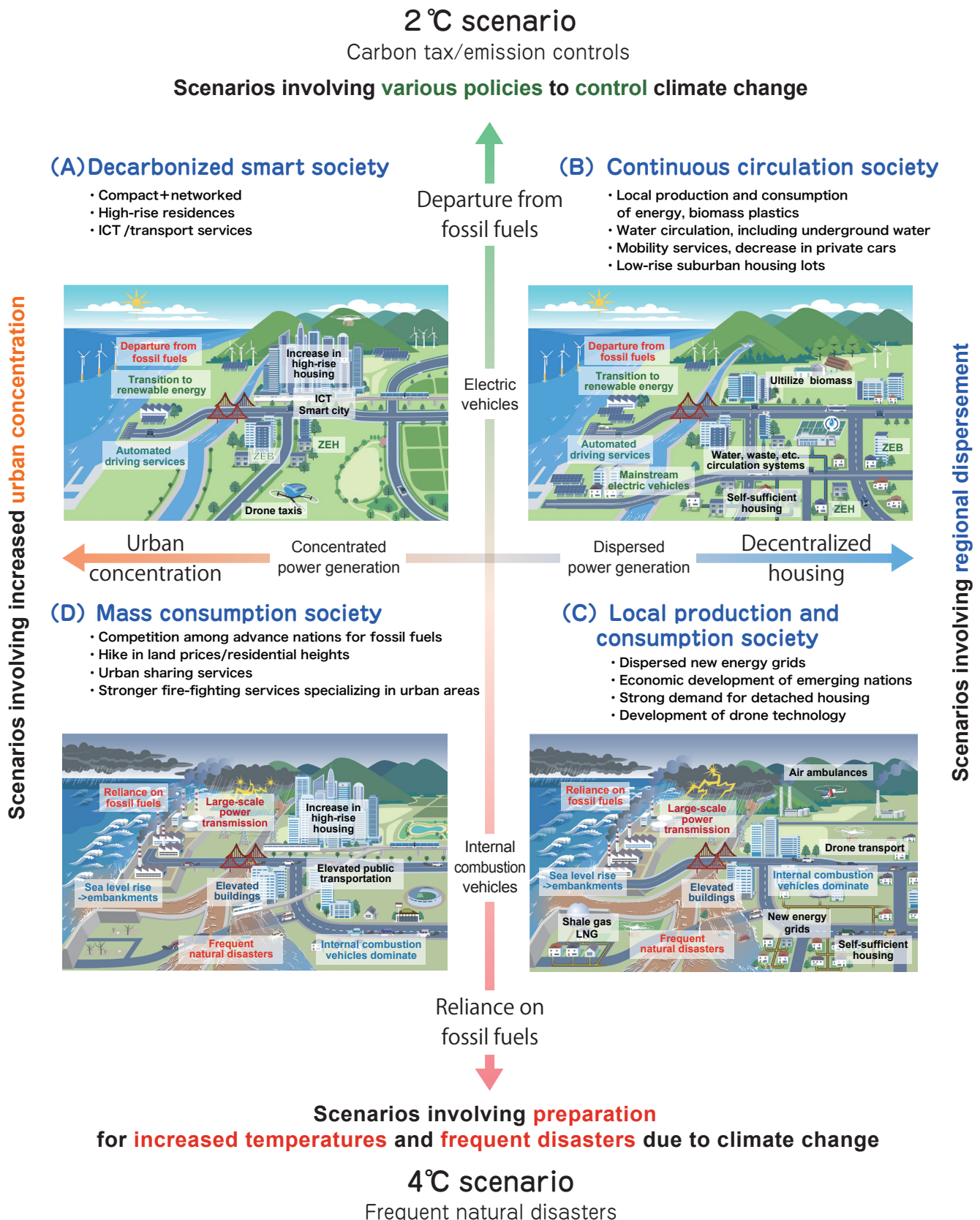
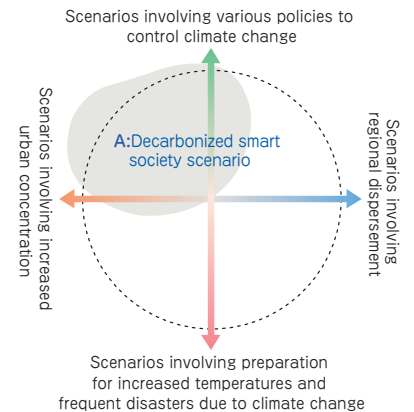
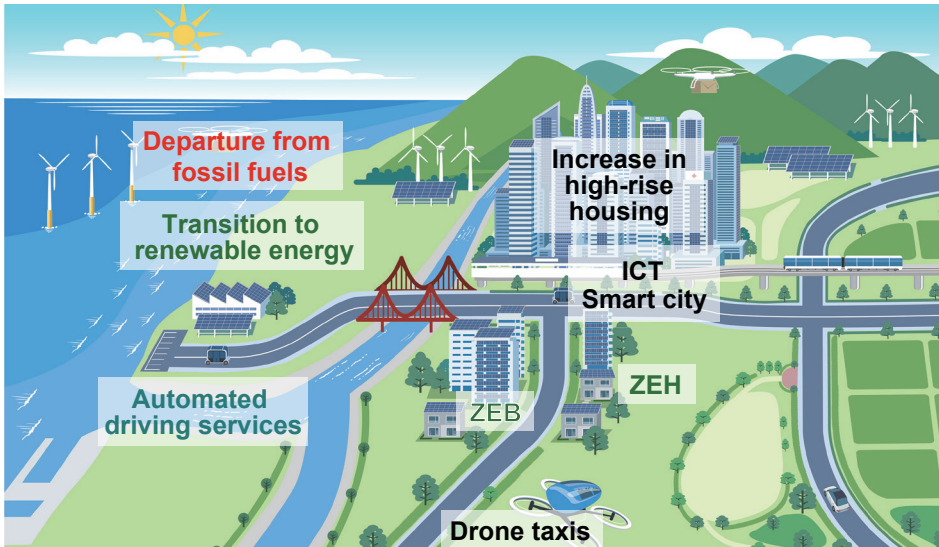


Fig.7: Illustration of four society scenarios

The illustrations below display a societies based on the 4 scenarios (Fig.7). Risk and opportunities for SEKISUI under the four societies envisioned

here were analyzed, with the following chart below describing SEKISUI's possible strategies for adapting to each of the societies.

Scenario (A)
Decarbonized smart society scenario (2°C x centralized 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

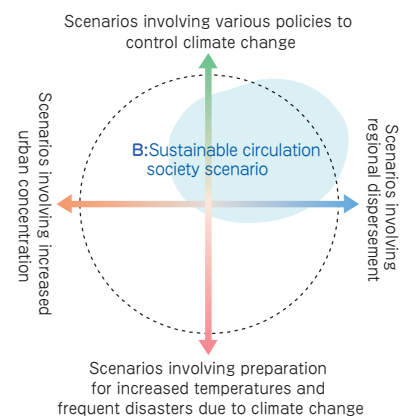
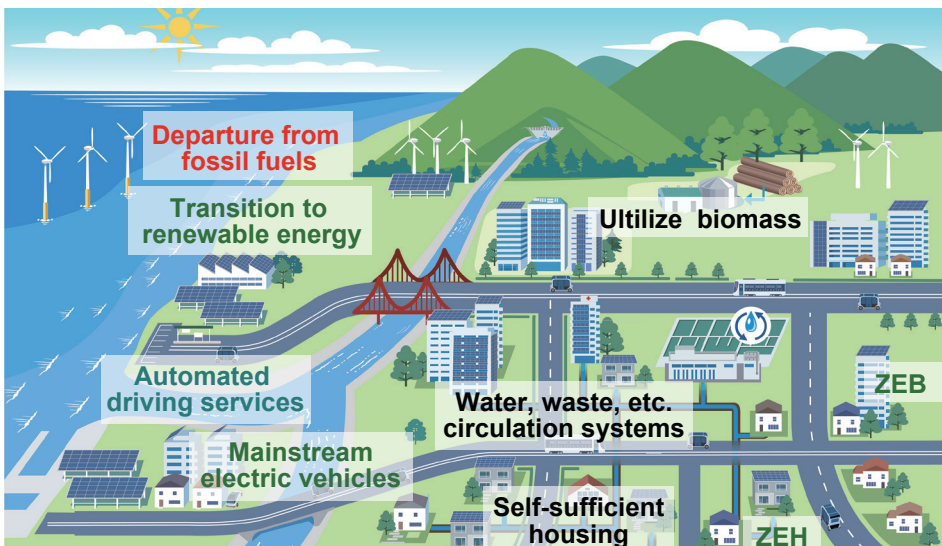
Risks

- Decreased car sales due to transition to mobility services
- > Decreased sales of housing and mobility related products
- Transition to renewable energy
- > Increase in energy procurement costs
- Decreased demand for low-rise housing
- > Decreased sales of housing related products

SEKISUI response

[Production activities] Begin converting to renewable energy (introduction of megasolar (USA), SMART HEIM Denki)
 [Housing business] Standardize ZEH specs
 [Energy] Begin storage battery business
 [IT] Material development to promote improvement of ICT (heat dissipating materials, materials for LED and OLED)

Scenario (B)
Sustainable circulation society scenario (2°C x dispersed 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
- Increased demand for housing with ZEH specs

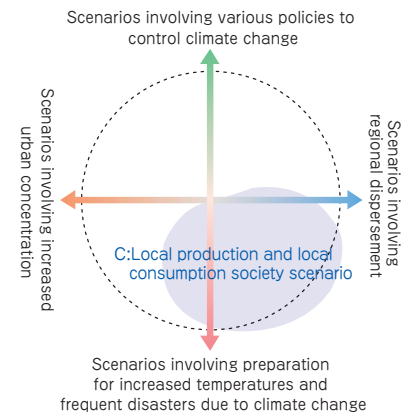
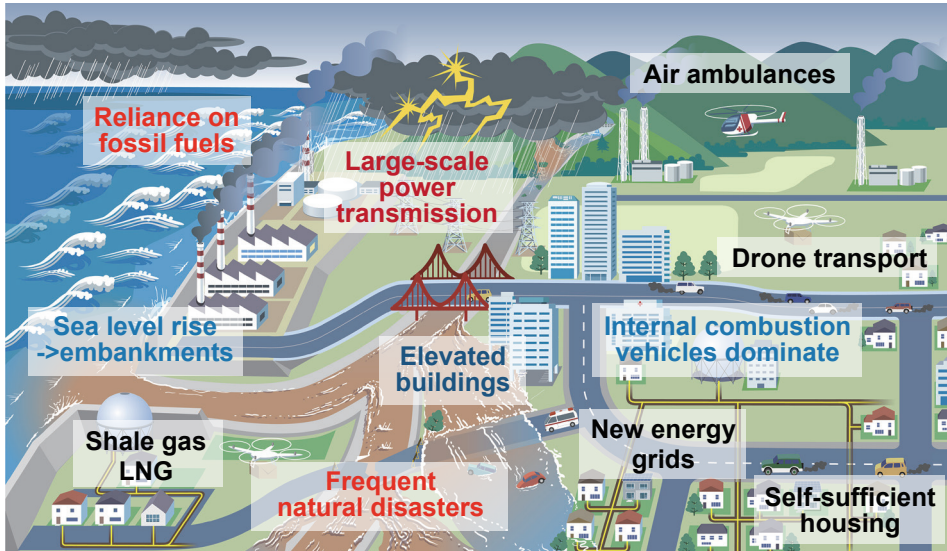
Risks

- Decreased car sales due to transition to mobility services
- > Decreased sales of housing and mobility related products
- Transition to renewable energy
- > Increase in energy procurement costs
- Decreased reputation among customers and investors due to failure to decarbonize

SEKISUI response

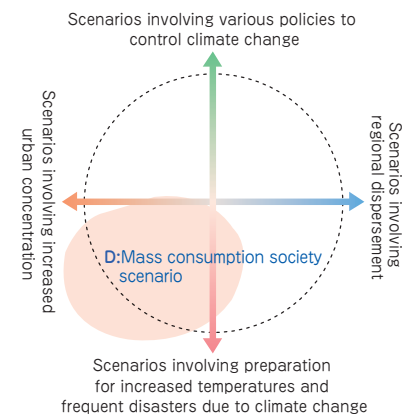
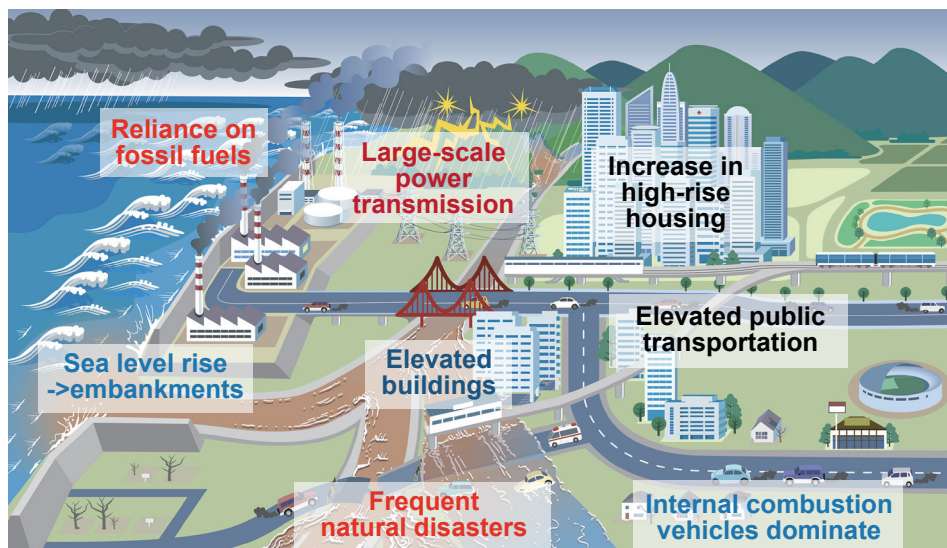
[Production activities] Begin converting to renewable energy (introduction of megasolar (USA), SMART HEIM Denki)
 [Housing business] Standardize ZEH specs
 [Energy] Promote the spread of energy self-sufficient housing (PV, storage batteries)
 Also contribute to local energy production and consumption through TEMS
 [Vehicles] Provide high performance materials with new functions, that support the functionalization of vehicles and aircrafts.
 (S-LEC wedge-shaped HUD interlayers, KYDEX sheets, CFTRP)
 · Establish technologies for CCU systems (BR)

Scenario (C) Local production and local consumption society scenario (4°C x dispersed scenario)"



Opportunities	<ul style="list-style-type: none"> · 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	<ul style="list-style-type: none"> · 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 · Extensive damages due to fragmentation of infrastructure in the area
SEKISUI response	<ul style="list-style-type: none"> · At the level of managers of operating companies and business establishments, grasp risks in each area and organization, formulate BCP, and study 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") · Strengthen contract manufacturing system for pharmaceutical products · Explore HEMS and other TEMS technology for building smart grids (SMART HEIM Denki) · Develop urban planning businesses (expand services)

Scenario (D) Mass consumption society scenario (4°C x centralized scenario)



Opportunities	<ul style="list-style-type: none"> · 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	<ul style="list-style-type: none"> · 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
SEKISUI response	<ul style="list-style-type: none"> · At the level of managers of operating companies and business establishments, grasp risks in each area and organization, formulate BCP, and study 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") · Strengthen contract manufacturing system for pharmaceutical products · Contribute to more stable power transmission by burying grids underground ("CC-Box")

< Summary of Scenario Analyses >

SEKISUI CHEMICAL Group housing and infrastructure related products are all designed to be highly durable and resilient against disaster. In the above-mentioned 4°C scenarios (C) and (D), the durability of these products and SEKISUI's renewal methods for existing infrastructure will contribute to solving climate change issues and likely lead to business expansion.

In the 2°C scenarios (A) and (B) where greater mitigation is pursued, many business opportunities will be available; such as solar-equipped housing (which helps to reduce GHG emissions and conversion to renewable energy), new energy production technologies, and development of new materials to drive energy efficiency for aircrafts and automobiles.

In addition to climate change, many factors, such as technological development in various industries, remain uncertain. However, whether the world progresses toward a more centralized or dispersed society, this analysis has confirmed the need for SEKISUI to prepare to convert risks into opportunities, be it development and add more variety of products designed to address risks that will likely occur with centralization, or technologies that will be necessary for dispersion.

The spread of COVID-19 has already caused significant changes in lifestyle, and can be expected to change even further. The impact assessments we have carried out in regards to the scenarios above are applicable regardless of these changes.

5-1. Indicators for Evaluating Climate Change Risks and Opportunities

As part of the medium-term plan “SEKISUI Environmental Sustainability Plan – Accelerate” (FY2017-2019) (formulated under the company-wide medium-term management plan), SEKISUI established a variety of indicators and targets to address environmental and social issues, tracked progress, and pursued measures to increase effectiveness.

Assuming that trends will shift in the direction to mitigate climate change assuming the 2°C scenario and demand for ZEH specification housing will expand, we have set the sales ratio of homes with ZEH specification at 60% in fiscal 2019 and have promoted expansion. As a result, with regard to social trends, the movement toward mitigation

accelerated, and the result was 80% which exceeded target.

In particular, the below initiatives were pursued to address climate change focused on the areas described below, and monitored and managed progress toward mitigating climate change by reducing greenhouse gas emissions. Additionally, the level of success in meeting reduction targets is reflected in environmental performance evaluation, and also affects the bonuses of employees with managerial positions or higher as well as executive compensation.

Regarding management indicators and targets for greenhouse gas reduction, the following are set and promoted:

Table 2: Medium- to long-term targets for greenhouse gas reduction

Item	Index	Previous medium-term target (2017-2019)	Current medium-term target (2020-2022)	2030	2050	Notes
Reduction of GHG emissions	Ratio of purchased electric power and renewable energy	—	20%	100%	(Convert all energy used to renewal energy)	Join RE100
	Reduction in GHG emissions generated by business activities	6% reduction or more (vs. FY2013)	9% reduction or more (vs. FY2013)	26% reduction or more (vs. FY2013)	Zero GHG emissions	Acquisition of SBT certification
	Reduction in GHG emissions in supply chain	—	—	27% reduction or more (vs. FY2016)	—	
Reduction of Energy	Energy use per unit of production	3% reduction or more (vs. FY2016)	3% reduction or more (vs. FY2019)	—	—	

(For details on indicators and targets, see CSR Report pp. 149-152)

A schematic of our roadmap for reducing greenhouse gases by FY2050 is shown below.

Under the previous environmental medium-term plan (2017-2019), we focused on activities to innovate energy consumption during production by upgrading aging production facilities. From the current environmental medium-term plan (2020-2022), we will proceed to innovating energy procurement. Specifically, focus will be on proactive use of renewable energy, and we will strive to reduce greenhouse gas emissions to zero by 2050, through proactive steps such as energy creation and conversion of fuel sources through technological innovations.

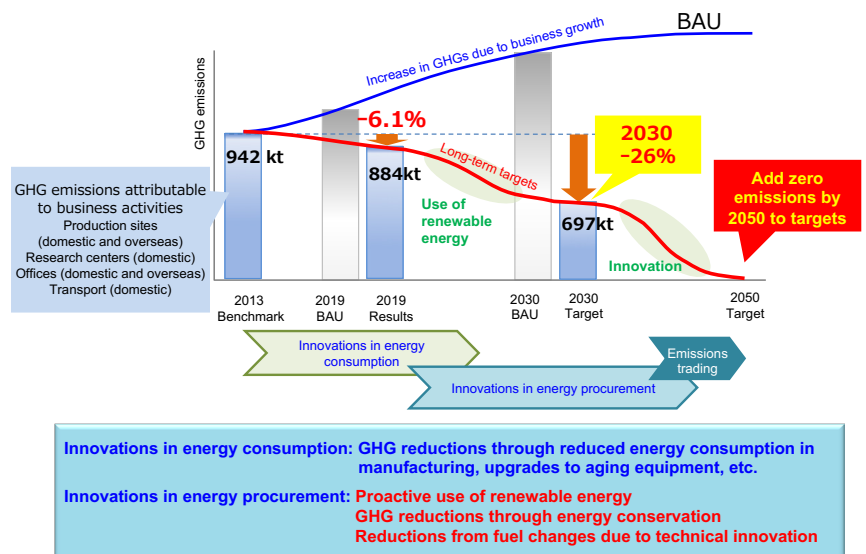


Fig. 8: Roadmap to reducing greenhouse gases

5-2. Reducing GHGs from Product Production Processes through Environment-Contributing Investments

[Reductions from Environment-Contributing Investments until FY2019 are expected to reach 37.7 kt-CO₂. (Actual reduction in FY2019: 27.0 kt-CO₂)

From 2017, SEKISUI has strategically designated 0.3% of company-wide net sales over a 3 year period for environmental investments designed to reduce GHGs and mitigate climate change by converting to energy-efficient processes, contribute to climate change adaptation by reducing water risks, and so forth.

In particular, regarding GHG reductions, to realize benefits from effective investments as early as possible, SEKISUI has introduced frameworks such as our “Environment-Contributing Investments Incentive Program” and “Global Warming Contribution Award” (President's Award) and increase motivation. The “investments incentive program” is a form of internal carbon pricing, by which SEKISUI headquarters provides financial support to investing departments at 30,000 yen for each CO₂ ton equivalent of GHGs reduced through investment. The “Global Warming Contribution Award” (President's Award) is awarded to production sites that achieve high reductions in CO₂ proportionate to the size of the business site. With the support of these policies, CO₂ reductions from these investment projects are increasing year by year and emissions from SEKISUI manufacturing are steadily decreasing.

Expected greenhouse gas reductions from renovations performed as part of Environment-Contributing Investments totaled 37.7 kt-CO₂ over the approximately 3 years ending in

FY2019, which falls just slightly short of our target of 40 kt-CO₂. Reductions confirmed as of FY2019, totaled 27.0 kt-CO₂.

[Reduction of greenhouse gas emissions from business activities: 6.2% (vs. FY2013) (meets target of 6%)]
SEKISUI is promoting various measures with the milestone to reduce greenhouse gas emissions of business activities by 26% in 2030, and 6% by 2019 compared to FY2013 in the medium-term plan. In FY2019 we pursued greenhouse gas reductions through methods such as investment incentives, energy conservation, procurement of low-carbon energy and consolidation of production systems, and despite M&As and increased production were able to reach our medium-term goal of a 6% reduction (compared to FY2013) (Fig. 9).

In FY2020 we formulated our environmental long-term vision, reviewing our target year from 2030 to 2050, and began related initiatives. Our aim is for greenhouse gas emissions from business activities to be effectively zero by FY2050. The conversion to renewable energy was established as an important intermediate milestone for FY2030. We aim to reduce emissions by 26% by 2030 in comparison to FY2013, by converting purchased electric power to 100% renewable energy. Regarding conversion to renewable energy beginning in FY2020, we will apply our ESG investment framework, as well as pursue internal policies such as renewable energy promotion plans.

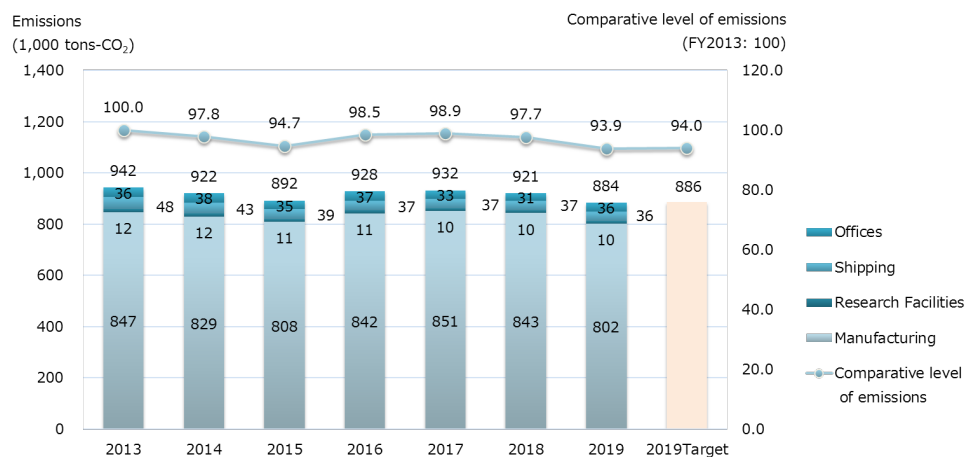


Fig.9: GHG emissions generated by business activities

5-3. Supply Chain and Partnership Initiatives

[2030 Scope 1+2: 26% reduction over FY2013; Scope 3: 27% reduction over FY2016]

In June 2018, SEKISUI received SBT certification for our greenhouse gas emission reduction target and our greenhouse gas emission reduction target for SCOPE3 which includes the supply chain. This certification signifies that SEKISUI's targets are scientifically based and show our commitment, as a company, to voluntarily contributing to the fight against climate change (Table 3).

From 2018 SEKISUI began to re-evaluate procurement standards, aiming to set targets for GHG reductions for raw material suppliers and monitor progress toward those goals. We are working with the CDP Supply Chain program to grasp supplier emission levels, creating opportunities for dialogue and building cooperation that will lead to reduced emissions. In addition to calculating greenhouse gas emissions and disclosing data, we also actively exchange practical information about long-term goals and

reduction measures with raw material suppliers to build relationships that promote mutual reduction.

[Commitment to RE100]

As mentioned previously, we aim for greenhouse gas emissions from business activities to be effectively zero by FY2050. To achieve this goal, we will also aim to reduce emissions by 26% by 2030 in comparison to FY2013 by converting purchased electric power to 100% renewable energy.

Carrying out initiatives such as these at SEKISUI will not only help us to reduce long-term regulatory risks, but also lead to business opportunities. Additionally, in order to expand the renewable energy market and popularize renewable energy, we believe cooperation with stakeholders and other companies, is necessary. We joined the RE100 initiative in August 2020 and will work to promote the spread of renewable energy throughout society.

5-4. Contribution to GHG Reduction through Products and Businesses

[Contribution of GHG reduction through our products and businesses: 6,116 kt-CO₂ as of FY2019,]

SEKISUI products reduce GHGs, in comparison to conventional and other comparable products, across the product lifecycle as shown below.

Reductions increased by 703 kt-CO₂/year, in addition to 5,413 kt-CO₂/year in FY2018.

Reductions that contribute to climate change mitigation have increased, due to factors such as more houses equipped with storage batteries and an increased need for resilient infrastructure.

Table3: Disclosure of Contributions to Greenhouse Gas Emission Reductions*7 through products (by business, FY 2019)

Field	CO ₂ reductions (kt-CO ₂ /year)	Reason for contribution (representative examples)
Housing	983	Resolving energy issues (creation, conservation, storage) through solar panels, SMART HEIM Navi HEMS and storage battery-equipped housing
Infrastructure	676	Renewing deteriorated pipes using the trenchless "SPR Method" reduces resource consumption and waste, while also minimizing the distance and amount time roads are closed during construction, thus avoiding traffic jams and improving fuel consumption of commuters
Automobiles and transportation	2,728	The adding high performance heat- and sound-insulating functions to S-LEC interlayers for laminated glass (application to automotive windshields) improves fuel consumption, by keeping vehicles light and improving air conditioner efficiency
Electronic materials	671	Intermediate materials that contribute to improved energy efficiency for LEDs, OLED, etc.
Other	1,059	Products that contribute to reduced CO ₂ emissions throughout its lifecycle, through use of recycled materials, improved durability, etc.
Total	6,116	-

*7 Greenhouse Gas Emission Reductions through products: Among Environment-Contributing Products, contributions to greenhouse gas reductions across the product's lifecycle were calculated for products corresponding to 75% of sales, using MiLCA LCA software (Japan Environmental Management Association for Industry) and the IDEA v.2.2 LCI database (National Institute of Advanced Industrial Science and Technology, Japan Environmental Management Association for Industry).

The majority of reductions were from housing, automobiles and transportation and intermediate electronic materials.

In housing, for instance, power generation from solar panels and energy efficiency achieved through products such as improved insulation or Smart Heim Navi HEMS reduced CO₂ produced by customers during their daily lives. KYDEX sheet, which is used for applications such as aircraft seat frames or window frames of passenger railcars, helped to reduce CO₂ used during transport by reducing vehicle weights. S-LEC interlayer film for laminated glass, which is used on automobile windshields, also helps to reduce CO₂ produced during driving by reducing weight and by improving air conditioner efficiency through better insulation and soundproofing.

While rarely seen by consumer eyes, SEKISUI has also developed specialized foam materials that contribute to reducing CO₂. “Thermobreak” insulation materials for pipe products, developed for the ASEAN market, improve energy efficiency through greater insulation. High-performance foam tapes, with excellent impact absorption, contribute to better performance for energy-efficient liquid crystal displays. “Alveosoft”, which is used for vehicle flooring primarily in Europe, contributes to better fuel efficiency by reducing weight. In the future, SEKISUI aims to increase its contributions by strengthening performance, adding new functionality and penetrating into new markets where SEKISUI's exceptional products can continue to contribute to reduced CO₂ emissions.

5-5. Adapting to Climate Change through Products and Businesses

SEKISUI's two businesses that contribute to climate change adaptation include housing and infrastructure businesses.

[Housing]

SEKISUI Heim themselves, which have disaster-resistant structure, highly reliability and durability, are houses that contribute to climate change adaptation. Modular housing that is produced largely in factories is well suited for adaptation, both in terms of production and construction. Such housing is less likely to be affected by climate change and can also be quickly provided as temporary housing in the event of evacuations caused by climate change-related disasters. Not only can SEKISUI's highly reliable and trustworthy SEKISUI Heim homes help to reduce the physical and mental stress of evacuation and support recovery, but after evacuation ends the housing can also be moved and, with the necessary maintenance, reused. This can contribute to recycling and to recovery efforts. Outfitting SEKISUI Heim housing with highly insulated and airtight air conditioning systems such as “Kaiteki (Comfortable) Airy” ensures a comfortable life with minimal energy use despite the warming effects of climate change. These air

conditioning systems also prevent viruses from spreading indoors, which can help to prevent the transmission of infectious diseases.

As mentioned previously, sales ratio of ZEH housing exceeded 80% in FY2019. Equipping houses with batteries capable of storing power created by solar panels prevents disruptions to lifestyles that could be caused by frequent natural disasters due to climate change. To ensure storage batteries continue to access to utilities during disaster, we focused on two objectives while developing and propose design of housing and services: (1) increasing battery storage capacity while making batteries more compact and; (2) designing homes so that batteries can be installed indoors, on the second floor, or otherwise so as to avoid damage during flooding, heavy rains, etc. As a result, battery installations increased in FY2019. Additionally, use of “V to H” (Vehicle to Home) systems that connect solar-equipped homes with electric vehicles ensure that residents can evacuate to safety or transport goods even when power is lost during a disaster. We will continue to promote disaster resilience facilities and services such as these, which contribute to climate change adaptation.

[Infrastructure]

Flooding, disaster and other increased risks from climate change require stronger water, sewage and other infrastructure. Water-related risks, in particular, affect some regions much more so than others. In advanced nations, where aging infrastructure that has been in place for 50 or more years is common, and new construction methods to renew aging infrastructure, that use less energy and materials and leave infrastructure unavailable for shorter periods of time, are required. Emerging nations, meanwhile, where sufficient urban infrastructure has not been placed yet due to population increases and rapid industrialization and urbanization, require construction of new, highly efficient, highly durable infrastructures. For the former, SEKISUI offers trenchless construction products such as “SPR Method”. For the latter, we collaborate with local companies to outfit infrastructure in developing countries as early as possible.

There is much uncertainty involved with climate change. Under the governance systems described above, SEKISUI CHEMICAL Group has analyzed the risks and opportunities associated with climate change, and with a better understanding of the degree of impacts involved has formulated strategies for the future. These strategies are divided into four scenarios, based on two climate change scenarios and a range of possible changes in society. The strategies, disclosed in FY2019, are effective in ensuring that SEKISUI remains a sustainable company capable of contributing to the environment and society, regardless of which future comes to pass.

As part of efforts to achieve the goals of our **Vision 2030** company-wide vision starting from FY2020, to

realize “Innovation for the Earth Policy” (“In order to realize sustainable society, we support the basis of LIFE and will continue to create ‘peace of mind for the future’”), we are implementing our **Drive 2022** medium-term management plan. This plan was formulated based on strategies for improving sustainable management which considered long-term issues such as issues on climate change.

By responding to environmental changes, including climate change, and continuing to explore risks and opportunities and revise strategy while contributing, as always, to a more sustainable Earth, SEKISUI CHEMICAL Group aims to be a highly sustainable company that will achieve continuous growth.