

Environment

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E Commitment to the Environment



Toward 2050: Leveraging diverse values to create a positive impact over the next 30 years

Yuki Isaka

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In recent years, the effects of global warming-induced climate change have started to visibly impact our lives through increasingly frequent and serious natural disasters. Furthermore, overproduction and overconsumption are accelerating biodiversity loss and resource depletion, sounding the alarm on the sustainability of the relationship between humanity and the planet. As an industry that relies heavily on energy and natural capital and therefore has various impacts on the environment, the housing industry has an increasing role to play in all of this.

Before these visible effects, we announced our Environmental Future Plan in 1999. Since then, the Sekisui House Group has remained committed to mitigating its environmental impact from production to disposal, concentrating on three major themes—climate change, biodiversity and resource recycling. We are also spearheading innovative and effective

initiatives such as the commercialization and construction of ZEH detached houses; implementation of the *Gohon no Ki* Project, which involves planting primarily native species to create ecosystems in customers' gardens during home construction; recycling 100% of waste generated from construction sites for newly built houses, remodeling jobs and factories; and the development of a foundation for the utilization of housing stock. Through our pioneering efforts in the industry, we have set the standard for environmental technologies in Japan.

To advance decarbonization efforts, we are expanding ZEH to our rental and condominium businesses, offering sustainable living choices to a wider range of customers. We are taking similarly minded actions through the utilization of renewable energy from Sekisui House Owner Denki; the electrification of Company vehicles, factory equipment and facilities; and

appealing to major suppliers to adopt science-based targets (SBT). In addition, we participate in international initiatives such as SBT, RE100 and the Global Alliance for Buildings and Construction (GlobalABC). We actively work to disclose information in line with the TCFD/TNFD framework and we aim to lead the way in implementing the global commitment to reducing negative impacts on the environment in Japan.

The Group has consistently advanced high-impact initiatives in the housing industry that have produced an array of positive outcomes. Nevertheless, addressing increasingly severe social issues such as climate change requires a wider perspective and stronger driving force. Looking forward to our milestone year of 2050, set forth in our Sustainability Vision, we will work alongside diverse stakeholders to define the future of our housing business, drive even greater innovation, and create meaningful impacts.

Sustainability Vision 2050

Environmental Initiatives

Decarbonization

- Disclosure in Line with Task Force on Climate-related Financial Disclosures (TCFD) Recommendations
- Promoting ZEH through Green First ZERO detached houses
- Spread of ZEH-M rental housing with the entire building meeting ZEH standards
- Promotion of ZEB for non-residential construction
- Sekisui House Owner Denki
- Supply chain decarbonization

Biodiversity Conservation

- Wood procurement
- The *Gohon no Ki* Project
- Disclosure in Line with the Taskforce on Nature-related Financial Disclosures (TNFD) Draft Recommended Disclosure

Resource recycling

- Sekisui House Zero Emissions system
- Initiatives to Realize a Circular Economy

Commitment to the Environment

Environmental Strategy

The Sekisui House Group's environmental strategy kicked off in 1982 with the strategic launch of a passive solar house. Then, in 1999, we announced the Environmental Future Plan as the cornerstone of our environmental strategy that lays out our goals and fundamental policy for environmental initiatives. Ever since, we have been conducting various initiatives to effectively reduce the impact of our business activities on the global environment. In particular, we have prioritized the promotion of energy-saving housing as a core measure to help prevent global warming. This effort began

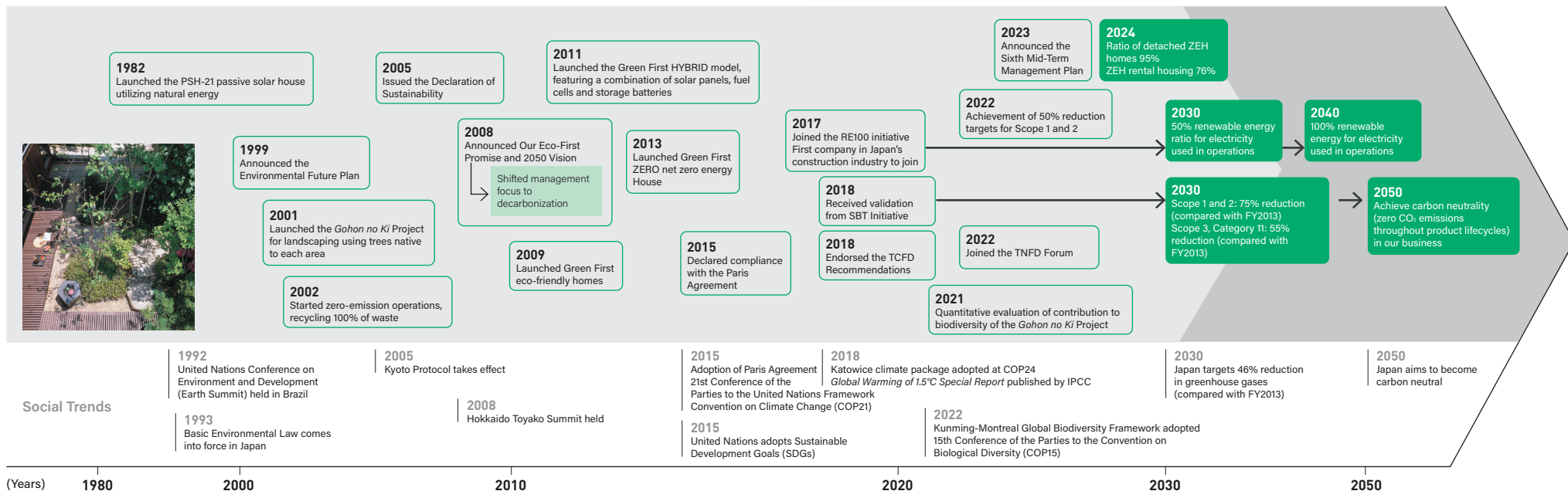
by making double-glazed windows a standard feature, progressed to the standard adoption of high-efficiency thermal insulation and water heaters, and included the launch of sales of Green First houses with solar cells and fuel cells. Then, in 2013, we were among the first in the industry to begin sales of net zero energy houses (ZEH).

In our business activities across the broader value chain, we were the first in the Japanese construction industry to join RE100 in 2017; then we announced our participation in the SBT Initiative in 2018. We still work continuously to achieve the targets set under these initiatives. We have also endorsed the TCFD recommendations and conduct disclosure in accordance with them. To advance biodiversity conservation,

since 2001 we have been conducting the *Gohon no Ki* Project to promote the use of native species in landscaping and greening. Other efforts not directly related to climate change include proactive initiatives to promote biodiversity and resource recycling. In 2023, we disclosed information in line with the TNFD framework recommendations and have since been investigating our dependence and impact on natural capital, focusing on wood procurement, a key resource in housing.

Since 1999, the Sekisui House Group has remained fully committed to advancing our environmental strategy by integrating the resolution of environmental issues into our business activities.

The Evolution of the Sekisui House Group's Environmental Strategy



E Environmental Management

1. Governance

Processes, controls and procedures for addressing environmental issues, and commitment to reducing environmental impact

The Sekisui House Group has established the ESG Promotion Committee as a consultative body to the Board of Directors to determine and implement action policies while confirming that all ESG management initiatives are reasonable and in line with societal expectations. The committee meets once every three months. Addressing environmental issues—including contributing to decarbonization, biodiversity conservation, realizing a circular economy and water security—is one of the key issues discussed by the committee. The committee evaluates the appropriateness of action policies and progress, and reports important matters to the Board of Directors.

The Company-wide, cross-departmental Environmental Subcommittee reports to the ESG Promotion Committee. Mainly composed of head office department heads involved in environmental management and individuals in charge of environmental management in business divisions Group-wide, this subcommittee meets as needed to conduct more specific and detailed discussions. In addition, the Environmental Subcommittee broadly disseminates the decisions of the ESG Promotion Committee for adoption throughout the Group.

The ESG Promotion Committee ensures effective, timely management oversight by providing the director of the Board responsible for each business and other managers with routine reports and instructions on the implementation of ESG initiatives.

In addition, the committee sets goals for reducing environmental impact in response to new issues and works to achieve them.

Acquiring ISO 14001 certification

As part of their production process management, five domestic factories that manufacture and ship industrialized housing materials have acquired ISO 14001 certification: the Tohoku, Kanto, Shizuoka, Hyogo and Yamaguchi Factories.

One overseas factory, the Ingleburn Manufacturing and Quality Control Centre in Australia, has acquired the certification as well. ISO 14001 is the international standard for environmental management systems. We are continuing the operation of these systems, and 100% of our production facilities are certified.

2. Strategy

Working to realize its global vision to make home the happiest place in the world, the Sekisui House Group aims to be a leader in ESG management that solves social issues and builds a sustainable society by promoting environmental strategies that are both advanced and have significant knock-on effects. To this end, under Sustainability Vision 2050, our long-term vision for 2050, we have set out the goals of Leading the Way to Decarbonization, Leading the Way to a Society in Which Humans and Nature Coexist, Leading the Way to a Resource-Recycling Society, Leading the Way to an Advanced, Healthy, and Long-lived Society, and Leading the Way to a Diverse Society. Under each of these, we have established targets and are advancing concrete initiatives toward their achievement. The Sekisui House Group's environmental strategy is characterized by its integration with the Group's business. Since the announcement of its Environmental Future Plan in 1999, Sekisui House has made the position of environmental measures within its business activities clear. We have advanced a variety of environmental initiatives, driving such efforts within the housing industry while gaining the support of all stakeholders, including customers and the supply chain, as we expand the range and scale of our business. In this way, we seek to exert a substantial positive effect on a variety of environmental issues—such as global warming prevention, biodiversity conservation and realizing a circular economy—while achieving business growth.

Sustainability Vision 2050

Sekisui House established the Sustainability Vision 2050 in 2016 and updated it in 2017, laying out a unified vision that encompasses the NEXT SEKISUI HOUSE 30-year Vision, which is our management policy, and initiatives to address the five material issues, which comprise our ESG management policy.

Sustainability Vision 2050 comprises five specific visions: Leading the Way to Decarbonization, Leading the Way to a Society in Which Humans and Nature Coexist, Leading the Way to a Resource-Recycling Society, Leading the Way to an Advanced, Healthy and Long-lived Society, and Leading the Way to a Diverse Society. For each of these, we have set targets as challenges for 2050 as well as targets for 2030, showing how they align with the Sustainable Development Goals (SDGs).

[Sustainability Vision 2050](#)

Eco-First Promise

Sekisui House was certified as an Eco-First Company by the Japanese Minister of the Environment in June 2008 for making three promises (the Eco-First Promise) related to global warming prevention, ecosystem preservation and resource recycling. We have been conducting environmental activities with a view to fulfilling these promises. In FY2012 and FY2016, we updated our Eco-First Promise within the broad frameworks of the three promises while incorporating changes in the social environment and the progress of our initiatives. In 2020, we further updated our commitments, and we continue to expand our efforts.

[Eco-First Promise](#)

Urban Development Charter

In 2005, we established the Urban Development Charter to fulfill our responsibility to the future as a housing manufacturer. This charter summarizes the range of expertise we have cultivated as part of our urban development initiatives through the lens of sustainability. Based on our four types of value (environmental value, economic value, social value and homeowner value), we have adopted four perspectives: environmental management, economic management, town management and lifestyle management. We promote urban development by applying these perspectives while considering our Basic Urban Development Policy and 24 specific guidelines.

[Urban Development Charter](#)

Environmental Management

3. Risk Management

Environment-related risks are discussed as needed by the ESG Promotion Committee and Risk Management Committee before being reported to the Board of Directors, which considers and makes decisions regarding risk mitigation, transfer, acceptance and control. Any violations of environmental laws and regulations (including potential soil, groundwater or air pollution) are reported to the head office. Furthermore, annual inspections of one domestic factory and one construction site, selected based on risk analyses, are carried out by independent experts.

4. Metrics and Targets

Sekisui House has set the following key performance indicators (KPIs) for environmental initiatives: Ratio of detached house ZEH, number and ratio of ZEH units for rent, number and ratio of ZEH condominiums for sale, number of insulation upgrades, rate of CO₂ emissions reduction from new housing and similar operations, rate of CO₂ emissions reduction from business operations, RE100 achievement rate, supplier science-based target-setting rate, sustainable wood procurement rate, biodiversity-friendly tree planting, waste rate (new construction), waste recycling rate (maintenance and remodeling), rate of electrified Company vehicles and rate of zero-deforestation timber procurement. Details about initiatives related to these KPIs are provided in the relevant sections of this report.

- P126 Promoting ZEH through Green First ZERO detached houses
- P128 Promoting ZEH in Sha Maison rental housing
- P128 Promoting ZEH in GRANDE MAISON condominiums
- P129 Energy efficient remodeling of existing houses
- P129 Promoting RE100 through Sekisui House Owner Denki
- P130 Initiatives aimed at 100% electrification of Company vehicles

- P131 Reduction of CO₂ emissions at procurement stages for components and raw materials
- P132 Commitment to biodiversity and zero deforestation
- P132 The *Gohon no Ki* Project, an eco-friendly landscaping and greening project
- P134 Wood procurement risk survey
- P141 Zero emissions in production and construction divisions

Compliance with environmental laws and regulations

As shown below, there were no significant violations environmental laws and regulations, including those related to soil, groundwater or air pollution, in FY2023.

	(FY)			
	2020	2021	2022	2023
No reports of significant violations (subject to punishments, administrative penalties or administrative guidance) of greenhouse gas laws and regulations or of serious leaks of fluorocarbons.		Same	Same	Same

5. Activities and Other Related Information

Environmental Charter

In 1999, Sekisui House announced its Environmental Future Plan, which includes the environmental charter, basic environmental guidelines and environmental action guidelines.

Environmental Charter

To continue to protect our one and only global environment;
To pass down a healthier, more sustainable world to our children;
And by doing so, to contribute to continued health and prosperity—
This is our wish.

Through the creation of environmentally friendly communities and living environments that can be comfortably passed down to future residents,
Sekisui House is working as a responsible member of society to create a future in which individuals, communities and the planet exist in harmony.

What can we do for the future?

E Contributing to a Decarbonized Society

Achieving Comfortable Living Alongside Decarbonization While Strengthening Disaster Resilience

Promoting ZEH¹ through Green First ZERO detached houses

Sekisui House's Green First ZERO (ZEH) detached houses contribute to the reduction of CO₂ emissions and decarbonization through excellent energy-saving and energy-generating performance without sacrificing living comfort.

The foundation of this comfort is excellent thermal insulation that clears ZEH standards. A home designed with a living room atrium or large windows offers a bright, open space, but these features can be disadvantageous in terms of energy efficiency. By using windows with excellent thermal insulation, we achieve both an open indoor environment and energy efficiency. Since 2022, the standard specifications for Green First ZERO houses meet the newly established upper grades of thermal insulation—grade 5—and primary energy consumption—grade 6—under Japan's housing performance indication system.

In terms of exterior appearance, to harmonize with the townscape, creating a beautiful home while also achieving ZEH standards is crucial. Photovoltaic panels, including tile-shaped photovoltaic panels that blend in beautifully with ordinary roof tiles, are an essential part of ZEH and are a standard feature on our sloped-roof buildings. In addition to their appearance, these tile-shaped panels make it possible to install a large area of panels even on complexly shaped roofs.

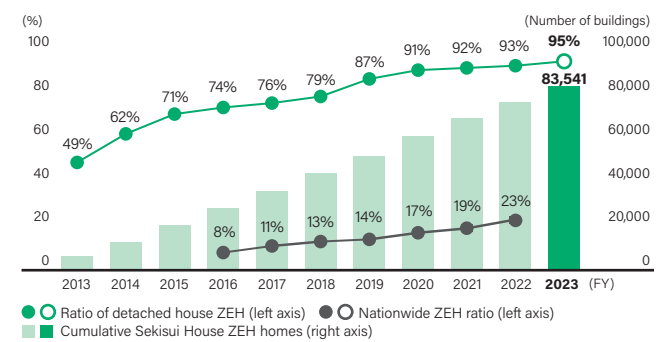
ZEH also helps promote everyday comfort and economy. Comfortable living requires energy for use in air conditioning and electronics. The spread of telecommuting is leading to an increase in time spent at home and, in turn, home energy consumption. Combined with recent rises in electricity and gas prices, this could cause an even greater burden on households. The energy saving and generation of ZEH help significantly reduce these utility costs so that residents do not have to worry about major cost increases due to spending more time at home. The combined effect of this with the Family Suite bright and spacious interior designs we recommend, this makes it possible to live comfortably and free of new stresses arising from new modes of living that incorporate telecommuting.

Thanks to these advantages, Sekisui House's Green First ZERO (ZEH) detached houses have been embraced by customers, and in FY2023, 95%² of Sekisui House's new detached houses were ZEH buildings, far exceeding the

rate for Japan as a whole of 23%.³ In addition, the cumulative number of ZEH houses we have constructed since the launch of this product reached 83,541 as of March 31, 2024. The Japanese government's 6th Strategic Energy Plan, announced in 2021, sets the goals of having all new houses built from 2030 meet the ZEH standard for energy efficiency and installing photovoltaic power generation equipment in 60% of new detached houses by 2030. Sekisui House already meets both of these targets.

The largest portion of the Sekisui House Group's CO₂ emissions, at 75% of the total, is from the use of supplied housing (Scope 3, Category 11). Promoting the adoption of ZEH is therefore indispensable to reducing CO₂ emissions.

Growth in the number of Detached House ZEH



Note: The ZEH ratio includes contracted and built-for-sale housing. Nationwide figures are rounded to the nearest whole number, from figures published in the Net-Zero Energy House Demonstration Project Survey Presentation 2023 (sponsored by the Agency for Natural Resources and Energy and the Ministry of Economy, Trade and Industry).

1 Net zero energy house, a house that aims for an annual primary energy balance of zero through energy efficiency and energy generation while providing a comfortable indoor environment. Green First ZERO is the brand name of our detached house ZEH with standard adoption of a solar power generation system.
 2 The ratio of ZEH, Nearly ZEH, and ZEH Oriented (in areas with snow accumulation of 100 cm or more) dwellings constructed between April 2023 and March 2024 in all areas excluding Hokkaido. The ratio for Hokkaido was 92%.
 3 Source: Net-Zero Energy House Demonstration Project Survey Results (2023 Edition); Ministry of Economy, Trade and Industry, Agency for Natural Resources and Energy; Sustainable open Innovation Initiative. Figure for FY2022.



The Family Suite, a spacious living area with large windows overlooking the garden of the *Gohon no Ki* Project



Sekisui House proprietary tile-shaped photovoltaic panels

KPI	Unit	2021	2022	2023	2024 Target
Ratio of detached ZEH homes ⁴	%	92	93	95	90

4 ZEH ratio of contracted and for-sale housing in areas other than Hokkaido.

Rate of CO₂ Emissions Reduction from New Housing and Similar Operations

KPI	Boundary	Unit	2021	2022	2023	2030 target
Rate of CO ₂ emissions reduction from new housing and similar operations ⁵	Sekisui House (non-consolidated, excluding development), Konoike Construction, Sekisui House noie, Sekisui House Construction, Sekisui House Real Estate	%	50.0 ⁶	55.3 ⁶	—	55% reduction by FY2030
	Sekisui House (non-consolidated), Konoike Construction, Sekisui House noie, Sekisui House Construction, Sekisui House Real Estate, SEKISUI HOUSE US HOLDINGS, LLC and subsidiary housing sales companies, SEKISUI HOUSE AUSTRALIA HOLDINGS PTY LIMITED		—	32.6 ⁷	38.0 ⁷	

5 Scope 3, Category 11 emissions reduction relative to FY2013 levels
 6 Calculated based on the current SBT-verified target boundary
 7 Calculated to reflect the broadened boundary and revised aggregation criteria (modified to include homes where the only energy consumed comes from photovoltaic cells installed on the house, and changed the service life of low-rise rental housing and non-housing buildings to 60 years, among other factors). Calculations for emissions in the base year of FY2013 were retroactively adjusted to align with the modified boundary and aggregation criteria.
 → P166 Environmental Data

Contributing to a Decarbonized Society

Expansion to Group companies

In order to expand its business domain in housing construction, the Sekisui House Group is engaged in initiatives for conventional wooden housing in addition to its mainstay pre-engineered housing. While Group companies Sekisui House noie and Sekisui House Construction are developing the noie brand and the *ki no ie* brand, respectively, the commitment to realizing a decarbonized society through ZEH is common to all Group companies. In FY2023, 177 of the 453 houses sold under the noie brand, and 24 of the 93 houses sold under the *ki no ie* brand were ZEH. We are working to promote ZEH in ways that align with each of these brands, which propose simple and just-right home building, though such means as using third-party ownership schemes for photovoltaic power generation.

Disaster resilience of Green First ZERO Houses

Comfortable living is only possible if residents feel secure about their homes when disaster strikes. To prepare for earthquakes, typhoons and other natural disasters, in addition to the robustness of houses themselves, it is crucial to secure living spaces, food, water and energy for use in the aftermath of a disaster. In 2004, the Sekisui House Group became the first house builder in Japan to launch an energy-saving, disaster-resistant house with facilities for storing supplies of food and water as well as household power storage cells and photovoltaic power generation equipment. Then in 2011, we launched Green First HYBRID houses, which enable both optimized energy use every day and power use during power outages through the coordinated control of these systems with fuel cells. As climate change has caused more frequent and severe natural disasters, we have enhanced the disaster resilience of our housing so

that residents can live their lives with peace of mind.

Today, we propose disaster-resilient zero energy houses that combine three features: securing living spaces after major earthquakes with high seismic resistance; space and facilities to store a three-day supply of food, drinking water and water for hygiene; and energy self-sufficiency. Such houses offer photovoltaic power generation systems to generate electricity when the sun is shining, fuel cells that can generate electricity in cloudy weather or at night as long as they have gas and water supply, storage cells that store excess power generated by photovoltaic and fuel cell systems, a strong structure, and excellent thermal insulation and energy-saving performance. Through this combination, these houses allow residents to live in a way that is closer to normal after disasters, making home an effective disaster shelter.

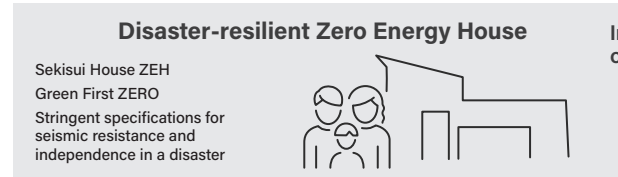
Since April 2022, we have been further enhancing our resilience offerings with new emergency power supply boards for use in power outages and reinforced measures to prevent water from entering underfloor spaces during sudden heavy rains or flooding. In a home that has only photovoltaic panels and fuel cells, during a power outage, power is only available from specific emergency outlets. With an emergency power supply board, however, appliances that need to stay powered, such as refrigerators, can stay plugged into their normal plugs (Figure 1). In addition, to address increasingly common flooding damage, we raised the installation height of equipment, added water stops that can be set up at front doors during flooding emergencies, adopted reinforced concrete foundation slabs, added sewerage pipe air pressure release valves, and raised the height of building foundations. Through the combination of these five measures, we have reinforced measures to prevent underfloor flooding (Figure 2).

In addition to prevention, recovery measures after a disaster are also

important. Sekisui House leverages its Company-wide organizational strength to quickly assess the safety of the residents and the state of damage, make its nationwide factories available as bases to support regional restoration, and work with partner construction companies nationwide to provide the construction capabilities necessary for recovery. Through this recovery support framework, we aim to help customers get back to their normal lives as quickly as possible.

In this way, we are continuously working to better protect the lives of our customers by balancing comfortable living with the realization of a decarbonized society in normal times and providing a recovery support system that leverages the resilience of buildings themselves and the organizational strength of our nationwide operations in times of disaster. These efforts encompass both the mitigation and adaptation approaches necessary to form policies that address climate change.

Based on its global vision to make home the happiest place in the world, Sekisui House will continue to evolve Green First ZERO while developing and spreading the value of ZEH, which contributes to the happiness of residents and society at large. By doing so, we will lead the way in the decarbonization of the housing industry.



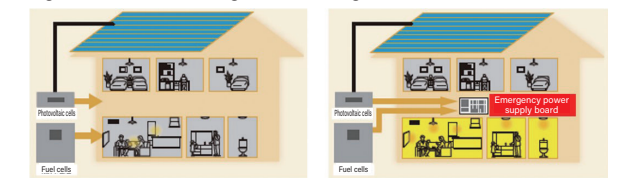
The house itself protects the residents.

In the event of a disaster



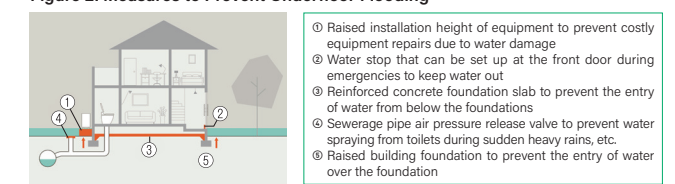
Factories, employees and partner companies protect the area under their care.

Figure 1. Power Use during a Power Outage



Power supply via emergency outlets Supply through an emergency power supply board

Figure 2. Measures to Prevent Underfloor Flooding



- ① Raised installation height of equipment to prevent costly equipment repairs due to water damage
- ② Water stop that can be set up at the front door during emergencies to keep water out
- ③ Reinforced concrete foundation slab to prevent the entry of water from below the foundations
- ④ Sewerage pipe air pressure release valve to prevent water spraying from toilets during sudden heavy rains, etc.
- ⑤ Raised building foundation to prevent the entry of water over the foundation

Contributing to a Decarbonized Society

Promoting ZEH in Sha Maison rental housing

Approximately 30% of the CO₂ emissions attributable to the residential sector in Japan come from multi-unit housing complexes. Of this, rental housing accounts for a large fraction, approximately two thirds. Therefore, the conversion of rental housing to ZEH is essential for decarbonization. We have designated ZEH under the Sekisui House rental housing brand Sha Maison as Sha Maison ZEH, and have been promoting its full-scale popularization since FY2020.

Two types of ZEH standards, each with different targets, are used for multi-unit housing complexes. The first is known simply as ZEH and applies the net zero energy standard to individual housing units in much the same way it applies to detached houses.¹ The second is known as ZEH-M and applies the net zero energy standard to entire residential buildings, including common areas. In ZEH-M, the building as a whole is judged against the ZEH standard, and it may clear the standard even if individual units within it do not. For this reason, from a resident-first perspective, we offer systems in which photovoltaic panels are connected to each unit so that residents can sell their own electricity individually, thus promoting unit-level ZEH that allows residents to enjoy the benefits of ZEH, including comfort and reduced utility costs. By making as many units ZEH as possible within each building, we are working to popularize rental housing that also meets the ZEH-M standard as a result.

In order to promote ZEH in rental housing businesses, which entails higher costs, it is also crucial to create business benefits for owners. We believe that as society as a whole progresses toward decarbonization, demand for ZEH will eventually increase in rental housing, as well. As the merits of residential units with unit-level ZEH are immediately clear before move-in, unit-level ZEH can be expected to help prevent occupancy rates and rents from declining, leading to long-term stable management. A survey we conducted in FY2021 of young people, who are the main users of rental housing, found that respondents were familiar with the effects of climate change, and we were able to discern an ethical-mindedness among them in terms of choosing to live in an environmentally friendly manner in order to combat such effects. Because this type of thinking is expected to increase in the near future, the conversion of rental housing to ZEH can be considered a good investment.

Furthermore, a FY2022 survey of Sha Maison ZEH residents found that 88% of respondents were satisfied and, of these, 78% said that they would

choose ZEH for their next home after moving out. Rental housing residents often move out after a few years, meaning that over time, Sha Maison ZEH is helping increase the total number of people who prefer ZEH. In this way, Sha Maison ZEH, with its clear benefits to residents, is expected to have knock-on effects in popularizing ZEH throughout society.

The Sha Maison ZEH approach has been well received by numerous owners and residents, and the proportion of ZEH residential units across all of our rental housing is increasing every year. The proportion of ZEH units for rent in FY2023 increased to 76% (15,191 units) from the previous year's 65%.

¹ For a multi-unit housing complex, four types of ZEH standards are defined, depending on the difference in energy efficiency. "ZEH" is capable of reducing net primary energy consumption by 100% or more; "Nearly ZEH" represents a reduction of more than 75%; "ZEH Ready" represents a reduction of more than 50%, and "ZEH Oriented" represents a reduction of more than 20%. In addition, ZEH-M and ZEH differ in their definitions of evaluation targets, which are "residential building" for the former and "residential units" for the latter.

² News release: Conducted a Survey on Residential Awareness of Global Warming Prevention Among People in their 20s and 30s (Japanese only)

KPI	Unit	2021	2022	2023	2024 target
Ratio of ZEH units for rent ²	%	—	65	76	73
	Housing units	8,501	15,064	15,191	—

² Ratio of orders for ZEH Ready or higher-grade units (includes only units in which individual residents can sell electricity to the grid; number of units was used as a KPI in FY2021)

Promoting ZEH in GRANDE MAISON condominiums

As with rental housing, we are promoting the transition to ZEH at the unit level in condominiums for sale.

In February 2019, Sekisui House built GRANDE MAISON Kakuouzan Kikuzakacho (Nagoya City, Aichi Prefecture), the first condominium building in Japan with all ZEH units connected to photovoltaic power generation systems. In FY2023, all GRANDE MAISON locations were ZEH, adding 16 buildings and 873 units of ZEH condominiums for a cumulative total of 27 buildings and 1,458 units.³

In its condominiums, Sekisui House designs ZEH with an emphasis on livability, which is a benefit for the tenants. For example, sweeping vistas are part of the appeal of high-rise condominiums. The large windows typically used to maximize this appeal are disadvantageous in terms of energy conservation, but we have achieved both ZEH and comfort through innovations such as the use

of vacuum double-glazed windows with extremely high thermal insulation performance.

In FY2023, 100% of GRANDE MAISON condominiums sold were ZEH. We plan to continue this through FY2024 onward.

³ Residential units that meet the ZEH Oriented standard or higher grade

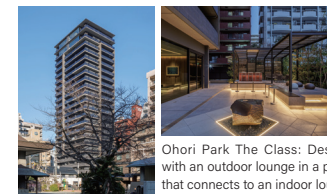
⁴ News release: All GRANDE MAISON Condominiums to Adopt ZEH-Specifications by FY2023 (Japanese only)

KPI	Unit	2021	2022	2023	2024 target
Ratio of ZEH condominiums for sale ⁴	%	39.4	88.8	100	100

⁴ Ratio of ZEH Oriented or higher-grade units among all units sold in the fiscal year.



Ohori Park The Tower: Design features a lounge and training gym in the center stories and fully capitalizes on its south-facing view of the park.



Ohori Park The Class: Designed with an outdoor lounge in a pergola that connects to an indoor lounge



Mejirozaka Terrace: Low-rise housing created in harmony with the tranquil residential area



Shirokane Takanawa Parkfront: Features a shared-use lounge where residents can relax as though it were a living room while gazing at natural light and abundant greenery

Contributing to a Decarbonized Society

Sales of sustainability-related products (ZEH)

Sales¹ of our sustainability-related products (ZEH) in FY2023 amounted to ¥861,032 million, 27% of the total sales of the entire Group.

¹ Approximate amount of sales of ZEH from built-to-order business (detached houses, Sha Maison) and development business (condominiums)

Promotion of ZEB for non-residential construction

In addition to detached houses and multi-unit residential buildings, we are also promoting ZEB² in non-residential construction. To this end, we unveiled a style of proposal for office buildings called Green First Office. These proposals meet ZEB standards based on excellent thermal insulation performance that leverages ZEH design expertise and technologies developed in the housing business. These office buildings include proposals for spaces that improve worker productivity and help reinforce BCPs³ with highly seismically resistant structures, thereby undergirding the sustained growth of companies. Reflecting customer needs related to reducing utility costs, promoting carbon neutrality and increasing employee satisfaction, orders are up year on year. Outside of office buildings, we are also rolling out proposals suited to other building uses, such as clinics and nursing care facilities.

In FY2023, we completed 130 ZEB buildings, bringing our cumulative total to 303. Under the ZEB planner registration system, our target is for a majority of orders received in FY2025 to be for ZEB. We are reinforcing efforts to reach this target.

Furthermore, to reduce CO₂ emissions from our business activities (Scope 1, 2), since FY2021 we have ensured that all new offices and facilities built for the Group's use are ZEB. Our Shimonoseki office in Yamaguchi Prefecture adopted elements of the technology for Green First Offices and meets the Nearly ZEB standard. This means that including buildings designed,

built and occupied by the Sekisui House Group, we now have a total of 18 ZEB buildings.

² Net zero energy building, a building that aims for an annual primary energy balance of zero through energy efficiency and energy generation while providing a comfortable indoor environment.

³ Business continuity plan, an emergency plan for corporate survival or for business continuity that makes strategic preparations to avoid an interruption of critical operations in the event that a disaster or other risk transpires.



Shimonoseki Office

Energy efficient remodeling of existing houses

We make energy efficient remodeling proposals for our existing houses through Group company Sekisui House Remodeling, Ltd. Energy efficient remodeling is general term for remodeling that entails the installation of photovoltaic panels or storage cells to increase energy self-sufficiency, improving thermal insulation performance, or replacing existing air conditioning and water heating equipment with high-efficiency models. In particular, we focus on housing that is more than 20 years old, which is typically much less thermally insulated than ZEH. In this area, we propose *Idocoro Dan-netsu* insulation remodeling, which emphasizes the living room, dining room and kitchen area, where people spend most of their time, and promote replacement of equipment with highly energy efficient models. For owners of homes equipped with solar power generation systems that have reached the post-FIT period (past the end of the feed-in tariff system's purchase period), we emphasize the merits of adding storage cells to their systems. Specifically, in addition to increasing the rate of self-consumption of surplus power, thereby helping reduce utility costs, we highlight the enhanced resilience that such an addition provides by enabling the use of electricity during power outages caused by natural disasters, which are increasing due to climate change. In FY2023, we were able to reduce CO₂ emissions by approximately 8,000 tons through solar installations done as part of our energy efficient modeling reforms.

As part of our efforts to decarbonize existing housing, we are also focusing an initiative to promote the proper recognition of the value of existing houses and create an active market for them. We believe that the proper assessment of the value of existing housing can help create more opportunities for investment in energy-saving remodeling and thus contribute to the decarbonization of housing stock.

The Japanese government's goal of reducing greenhouse gas emissions attributable to the residential sector 66% compared with the FY2013 baseline by 2030 depends on decarbonizing existing housing. As such, initiatives in this area are expected to receive a range of policy support going forward. Sekisui House has supplied more than 2.6 million housing units to date and will continue to make remodeling proposals and promote market circulation based on proper valuation while taking advantage of various forms of support from the government to further the decarbonization of existing housing.

→ P. 168 Environmental Data
→ P. 196 SumStock Quality Housing Stock System

Decarbonization of Business Activities and Response to Climate Change

Promoting RE100 through Sekisui House Owner Denki

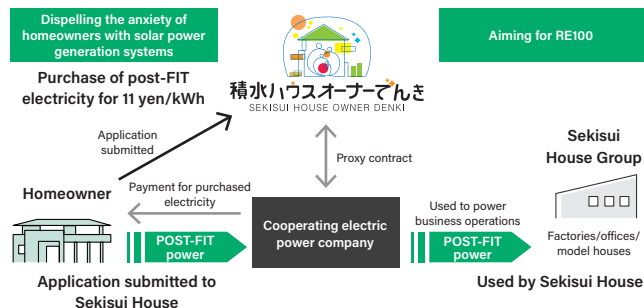
In an effort to decarbonize its business activities, in 2017, the Sekisui House Group became the second Japanese company and the first company in the housing industry to join the international initiative RE100. The Group is working to switch to power derived from renewable energy sources for use in its business operations. Most companies procure renewable energy through the purchase of green power certificates and the installation of photovoltaic power generation systems. In contrast, we procure surplus solar power from our customers under the post-FIT mechanism through Sekisui House Owner Denki.

Because we were an early adopter of solar power generation systems in our houses, the annual amount of power generated by all of the solar power generation systems we had installed was estimated to be over 700 GWh when we joined RE100, more than five times the 120 GWh annual power consumption of the entire Group at that time. Based on this, we estimated that we would be able to achieve RE100 by around 2040 if we could procure surplus power from 20%–30% of our customers under the post-FIT mechanism, and established this as a target. In actuality, we have been able to procure such power from roughly 50% of our customers, and expect to achieve RE100 earlier than originally anticipated. The amount of renewable energy purchased in FY2023 through Sekisui House Owner Denki was approximately 89 GWh, accounting for roughly 86% of the Group's total power consumption.

In addition, Sekisui House Owner Denki also creates benefits for cooperating electric power companies by making large contracts for the Group's business use power. This makes it possible to set the unit price for purchasing surplus power higher than the market price, leading to higher customer satisfaction. In addition, we expect to be able to achieve RE100 while controlling the cost of adopting renewable energy.

Contributing to a Decarbonized Society

Overview of Sekisui House Owner Denki



KPI	Unit	2021	2022	2023
RE100 achievement rate ¹	%	33.5	55.1	86.2
Rate of CO ₂ emissions reduction from business operations ²	%	46.6	50.9	56.3

1 Ratio of the post-FIT photovoltaic power purchased by Sekisui House Owner Denki and other renewable power to the total electricity consumed in business operations

2 Scope 1 and 2 emissions reduction rate relative to FY2013. Konoike Construction Co., Ltd. became a wholly owned subsidiary in FY2019. To enable time series comparability for emissions, we have retroactively added Konoike's annual CO₂ emissions to those of the Sekisui House Group for FY2013 (the baseline year for the Group's planned CO₂ emissions target).

Initiatives aimed at 100% electrification of Company vehicles

Company vehicles account for roughly 30% of the Sekisui House Group's CO₂ emissions. We thus regard reducing these emissions as an important aspect of realizing decarbonization.

We are promoting the switch to and adoption of electric vehicles, such as hybrid electric vehicles (HEVs) and battery electric vehicles (BEVs), and have set a target of 100% electrification of Company vehicles by 2030 and begun initiatives to achieve this goal. In 2023, we started work on creating charging

infrastructure that could be used with cloud systems to understand decentralized charging and charging amounts in order to optimize for increasing power demand at our locations. Starting with the Toyohashi Branch, usage of EVs as Company vehicles has begun at four locations, and we started a service that allows customers to charge their EVs when they visit these locations for consultations.

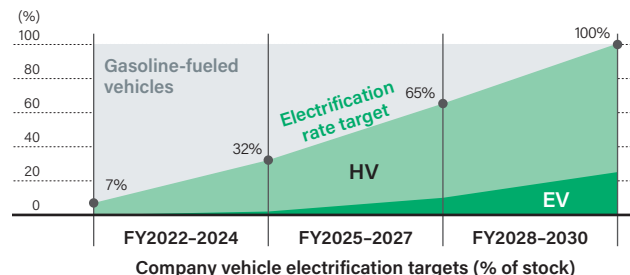
In addition to the speedy adoption of HEVs, the adoption of EV Company vehicles allows us to utilize electricity derived from renewable energy through Sekisui House Owner Denki as we aim to significantly reduce CO₂ emissions from Company vehicles (23,385 t-CO₂ in FY2023) and contribute to the realization of decarbonization.

Percentage of Company Vehicles that are Electric, Aiming for 100% (FY)

KPI	Unit	2021	2022	2023
Ratio of electric vehicles ³	%	—	9.3	15.5

3 Hybrid electric vehicles (HEVs) and electric vehicles (EVs)

Roadmap for Electrification of Company Vehicles



Other Initiatives

Public policy collaboration on climate change in Japan

Through the Japan Federation of Housing Organizations, which supervises the housing industry, and the Japan Prefabricated Construction Suppliers and Manufacturers Association, we endorse practical policies such as tax incentives and the expansion of various subsidy programs to promote climate change mitigation in all aspects of buildings, including housing, formulated by the government, particularly the Ministry of Land, Infrastructure, Transport and Tourism; the Ministry of Economy, Trade and Industry; and the Ministry of the Environment. We actively cooperate with and make recommendations to these entities.

Collaboration with international public organizations

In 2008, Sekisui House declared that it would aim to be carbon-free in its operations and value chain by 2050. Since then, we have been focused on promoting the adoption of net-zero energy houses. The United Nations Framework Convention on Climate Change (UNFCCC) has proposed that urgent action is needed to reduce carbon emissions from the building and construction sector, which accounts for about one-third of global energy consumption. An urgent need exists to achieve this objective with innovative buildings and construction methods. We will continue to work with experts from around the world to decarbonize the building and construction sector.

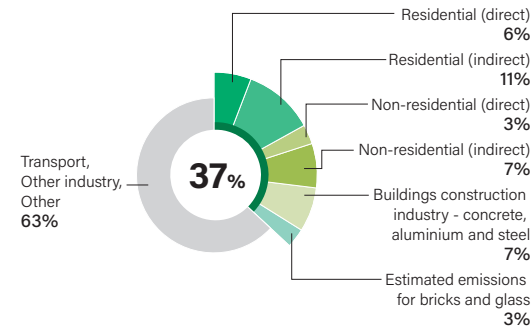
Main activities:

- Joined the Global Alliance for Buildings and Construction (GlobalABC), which was established at the UN's COP21 conference in Paris, France
- Participated in and submitted reports to the UN's COP22 conference in Marrakech, Morocco
- Made a presentation at COP23 in Bonn, Germany advocating the development of sustainable cities at SDG 11 Day, a ministerial meeting on SDG 11, highlighting the rationale and background for the mass adoption of ZEH
- Participated in the Building Materials Working Group since FY2022

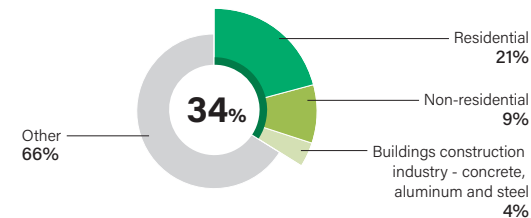
Contributing to a Decarbonized Society

- Participated in the international Race to Zero campaign for decarbonization organized by the UNFCCC through our membership in the Business Ambition for 1.5°C campaign organized by Science Based Targets (SBT) in conjunction with COP26
- Invited to and participated in the round table meeting at COP28 in Dubai, UAE entitled “Delivering the Buildings Breakthrough: Pioneering leadership for a low-carbon and resilient world”

Global share of buildings and construction operational and process CO₂ emissions, 2022



Final share of total energy consumption of buildings and construction (2022)



From the UNEP_2023 GLOBAL STATUS REPORT FOR BUILDINGS AND CONSTRUCTION

Reduction of CO₂ emissions at procurement stages for components and raw materials

To reduce lifecycle CO₂ emissions from homes, Sekisui House has been promoting the uptake of ZEH and other energy-efficient housing with the aim of reducing CO₂ emissions at the residential stage (Scope 3, Category 11). These efforts have led to significant reductions. However, emissions from the procurement of components and raw materials in the supply chain (Scope 3, Category 1) account for 20% of the Group's total emissions (FY2023 figure). We cannot address this significant portion of emissions alone, so we have begun collaborative efforts with suppliers. First, in October 2020, we surveyed our suppliers to determine the state of their initiatives to reduce CO₂ emissions. Based on the results, we held a seminar in February 2021, which 135 suppliers attended. We positioned this event as the kickoff of initiatives to reduce CO₂ emissions in our supply chain, subsequently holding additional seminars with 61 participating companies in April 2021; 242 in October 2021; 260 in September 2022; 157 in February 2023, and 279 in October 2023. We use these events to promote awareness of the need to acquire SBT validation¹ and to provide training for procurement staff. The seminars also feature keynote speeches by speakers from the SBT organization and progress reports for our policies, and major suppliers as well as small- and medium-sized suppliers who present on how they acquired SBT validation. Sharing positive examples of how even small companies can obtain SBT validation helps more suppliers get validated. We have also set up a consultation service within the Company for small- and medium-sized suppliers to provide specific advice and answers to individual questions.

We have set the medium-term target of raising the SBT-setting rate of our major suppliers to 80% by 2030 and are steadily raising the current rate. Around 20% of the Sekisui House Group's Scope 3, Category 1 CO₂ emissions attributable to procurement come from small- and medium-sized suppliers and, in 2023, a total of 65 such companies acquired SBT validation. In addition, as our suppliers set decarbonization targets and begin initiatives, these efforts contribute to the decarbonization of the construction industry as a whole. By promoting effective CO₂ reduction across the supply chain in cooperation with our suppliers, we will contribute to the realization of a carbon-free future.

¹ Validation by the Science Based Targets Initiative (SBTI) of corporate greenhouse gas reduction targets as being aligned with the requirements of the Paris Agreement

KPI	Unit	2021	2022	2023
Supplier SBT-setting rate ²	%	22.2	31.9	39.5

² Percentage of our major suppliers (by portion of CO₂ emissions) who have adopted science-based targets

Environmental certifications acquired by suppliers

We confirmed our suppliers' acquisition status of environmental certifications, including ISO 14001 (environmental management).

	Unit	2021	2022	2023
Status of acquisition ³	%	70	79	81

³ Percentage based on annual CO₂ emissions

E Biodiversity Conservation

1. Governance

Participating in initiatives

We have been an early participant in the global movement for biodiversity conservation. At the 9th Conference of the Parties to the Convention on Biological Diversity (COP9) in 2008, we were one of the nine major Japanese companies to sign the Leadership Declaration of the Business and Biodiversity Initiative.¹

As a founding member of this initiative, we agreed to the three objectives of the Convention on Biological Diversity (conservation of biodiversity, sustainable use of biodiversity components, and fair and equitable distribution of the benefits of genetic resources), and we continue to promote biodiversity conservation² under this policy in our business operations. We have also endorsed the goals of the Taskforce on Nature-related Financial Disclosures (TNFD), which was launched in June 2021. We then joined the TNFD Forum in February 2022 and in January 2024 were recognized as a TNFD Early Adopter. In addition, we are part of the 30by30 Alliance, which was launched with the aim of achieving the global 30by30 target³ adopted at the 15th Conference of the Parties to the Convention on Biological Diversity (COP15), and we are proactively cooperating with certified Nationally Certified Sustainably Managed Natural Sites⁵ with the aim of achieving OECM⁴ registration.

These initiatives are led and promoted by the Environmental Subcommittee, in cooperation with each department as well as domestic and overseas Group companies, based on the ESG management promotion system.⁶ We also ensure that all employees understand and are familiar with these initiatives through progress reports, feedback on issues and proposals for improvement.

¹ [Business and Biodiversity Initiative: Leadership Declaration](#)

² [P132 Biodiversity Conservation 2. Strategy](#)

³ 30by30 is an international initiative to effectively conserve at least 30% of the Earth's land and ocean area as sound ecosystems by 2030 with the nature-positive goal of halting and reversing biodiversity loss by 2030.

⁴ Other effective area-based conservation measures, an approach to designating areas that contribute to biodiversity conservation outside of protected areas

⁵ [Ministry of the Environment's "Nationally Certified Sustainably Managed Natural Sites"](#)

⁶ [P93 ESG Management Promotion Structure](#)

Commitment to biodiversity and zero deforestation

In our Sustainability Vision 2050⁷ plan, we have set the goal, as a challenge for 2050, of maximizing ecosystem networks through business operations. We aim not only to achieve no net loss (to maintain the value of ecosystems) but also become nature positive (to enhance the value of ecosystems through our business operations). Based on this commitment, we remain focused on the *Gohon no Ki* Project⁸, a landscaping and greening project that fully considers the ecosystem, as well as FairWood sustainable wood procurement.

In particular, the issue of wood procurement is recognized as a pressing global issue; the goal of zero deforestation by 2030 was adopted in the 2014 New York Declaration on Forests. At COP26 in 2021, 140 nations, including Japan, agreed to this goal. The Sekisui House Group supports zero deforestation, which aligns with its FairWood procurement approach, and has declared the goal of zero deforestation Group-wide in Sustainability Vision 2050. In the future, we also aim to achieve zero deforestation throughout our primary and secondary suppliers.

⁷ [Sustainability Vision 2050](#)

2. Strategy

The *Gohon no Ki* Project, an eco-friendly landscaping and greening project⁸

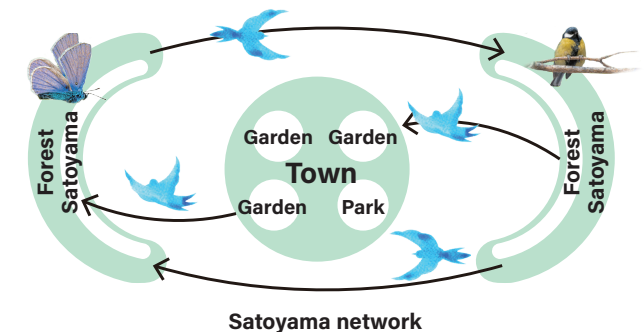
Sekisui House is Japan's largest landscaping company, planting one million trees nationwide annually. To fulfill our responsibility as a large-scale house builder, since 2001 we have been implementing the *Gohon no Ki* ("five trees") Project, an ecosystem-conscious landscaping and greening project, to conserve biodiversity through our housing business.

The *Gohon no Ki* Project is based on the approach that "three trees are for birds, two trees are for butterflies, and all are local native tree species." The project proposes the use of native tree species that are beneficial to birds and butterflies in gardens. In addition to biodiversity conservation, we are making

proposals that encompass the benefits to residents of garden visits by fauna and the other effects of garden trees. We seek to maintain and revive the ecosystem network (nature positive) by increasing the amount of richly green space in urban areas and by leveraging residential gardens, created under the *Gohon no Ki* Project, to support the habitat and activities of the fauna. Ecosystem networks enrich biodiversity at the regional and national levels, creating places where both wildlife and residents can simultaneously enjoy the richness of nature.

Thanks to the cooperation of the many customers who have endorsed the philosophy of the *Gohon no Ki* Project, there were 837,000 plantings (includes those outside of the *Gohon no Ki* Project) in FY2023, with the cumulative number of plantings since the 2001 start of the project rising to 19.84 million.

⁸ [Gohon no Ki Project \(Japanese only\)](#)



Biodiversity Conservation

FairWood procurement and Wood Procurement Guidelines

FairWood is defined as wood that is not only legal, but also contributes to sustainability and local development. We have declared FairWood procurement as a priority in our Wood Procurement Guidelines, and we are working to improve our level of procurement while engaging with FoE Japan and other international environmental NGOs and industry organizations. For example, we are constantly working with environmental NGOs to obtain the latest information on high-risk areas and update our risk assessment methods.

One objective of FairWood procurement is to secure a stable supply of sustainable and renewable resources for the Company. Another objective is to achieve a positive impact through sustainable forestry management that goes beyond avoiding illegal logging by continually working on our supply chain as one of Japan's leading wood consumers. This also aligns with our biodiversity conservation challenge goal of "maximizing ecosystem networks through our business."

Commitment to biodiversity in wood procurement

Since establishing the ahead-of-the-curve Wood Procurement Guidelines in 2007, Sekisui House has promoted the procurement of FairWood, a sustainable source of wood. To better clarify our stance, we announced updates to our Wood Procurement Guidelines and creation of the Wood Procurement Policy on October 1, 2023.

Our newly established Wood Procurement Policy not only advances FairWood procurement as previously stated but also reaffirms our stance on working to achieve zero deforestation by 2030 and tolerating absolutely no human rights violations. In line with this, the ten Wood Procurement Guidelines have been revised to use more specific terminology such as "zero deforestation," "zero land conversion" and "respect for the free, prior and informed consent (FPIC) of indigenous peoples."

The three fundamental policies of the Wood Procurement Policy (established October 1, 2023)

- ① We strive to practice environmentally friendly, socially fair procurement of FairWood.
- ② We will achieve wood product procurement with zero deforestation of natural forests by 2030.
- ③ We do not tolerate conflicts or human rights abuses anywhere in our supply chain.

The ten Wood Procurement Guidelines (as revised October 1, 2023)

- ① Source wood products with guaranteed legality and a supply chain that can be traced back to the logging site for due diligence processes, etc.
- ② Source wood products produced without damaging high conservation values (HCVs).
- ③ Do not source wood products from areas where the logging of natural forests causes biodiversity loss or deforestation.
- ④ Do not use endangered species for wood products.
- ⑤ Minimize CO₂ emissions when producing, processing, and transporting wood products.
- ⑥ Respect the free, prior and informed consent (FPIC) of indigenous peoples and source wood products from supply chains that do not involve conflicts or human rights abuses.
- ⑦ Source wood products from areas of controlled logging, so as not to exceed the rate of forest regeneration.
- ⑧ Source wood products from domestic forests where well-planned forest management is in place to conserve ecosystems.
- ⑨ Source wood products from forests that are managed so as not to damage high carbon stock (HCS) forests or lead to forest conversion.
- ⑩ Source wood building materials that contribute to resource recycling and cascading use.

3. Risk Management

Practicing due diligence in procurement

To us, due diligence¹ is the process of securing sustainable timber that supports the future of our business, and we implement sustainable wood procurement through strict due diligence practices.

Many companies conduct due diligence only for low-risk timber from primary suppliers. In contrast, we also target suppliers at the secondary level and further upstream and visit logging areas to investigate and confirm the status of operations when risks that cannot be simply eliminated are identified.

This is because we believe it is important to share the tracking process with suppliers and strive for ongoing improvement in order meet growing international calls for zero deforestation.

¹ Due diligence is the duty of care and effort that companies and others must apply as a matter of course. In Japan, the Act on Promotion of Use and Distribution of Legally-harvested Wood and Wood Products (commonly known as the Clean Wood Act) refers to due diligence, and was enacted in response to the tightening of regulations on the handling of illegally harvested timber in Western countries. This is represented by a process of identifying risks of illegality by 1. collecting information, 2. assessing risk, and 3. practicing risk mitigation. A growing number of companies are currently practicing due diligence in wood procurement while also addressing ESG-related risks.

Biodiversity Conservation

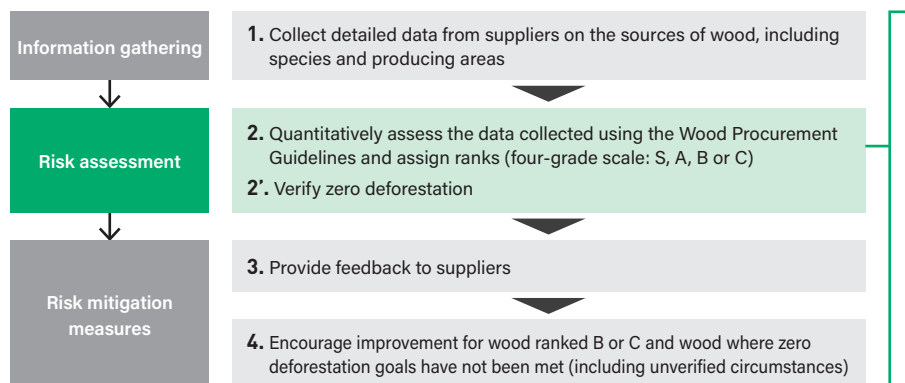
Wood procurement risk survey

Sekisui House implements a wood procurement survey of its major wood suppliers (roughly 60 companies) according to the following process.

Since FY2023, we have explicitly stated in our Wood Procurement Policy and Wood Procurement Guidelines our goal of zero deforestation and have added a new KPI regarding the rate of accomplishment of this goal at our logging areas.

The ratio of Rank S and Rank A wood has been gradually increasing from 47% before the guidelines were implemented in FY2006, reaching 97.2% in FY2023. The rate of zero-deforestation (ZD) wood procurement has reached 89.8%.

Annual Due Diligence Wood Procurement Risk Survey Process



i Initial risk assessment

Tree species at risk	<ul style="list-style-type: none"> Washington Convention IUCN Red List, etc.
Logging country/region risk	<ul style="list-style-type: none"> Extent of illegal logging Corruption index, etc.

ii Detailed risk assessment

If the probability of risk in the initial evaluation is high, we contact upstream suppliers and collect information on local forest management, biodiversity, and human rights risks and make a comprehensive determination.

- NGO information, document confirmation, site visits, etc.

Risk assessment of environmental issues

For existing suppliers whose evaluation results according to the Wood Procurement Policy reveal environmental risks, we conduct thorough due diligence by continuous monitoring of evaluation standards and the achievement of those standards.

In the event that a serious risk is discovered in the due diligence process, we work with the related divisions to determine the proper remedial action and take measures that could include cutting back on transactions with the supplier, depending on the score in the supplier assessment. No suppliers were deemed high-risk in FY2023.

Conducting onsite due diligence overseas

Conducting onsite due diligence in high-risk areas is both effective in achieving zero deforestation and zero human rights violations in our Wood Procurement Policy and for strengthening engagement between various stakeholders such as suppliers and environmental NGOs.

In FY2023, we were able to conduct due diligence of raw materials for interior components in Vietnam thanks to the easing of COVID-19 related travel restrictions. During this visit to logging sites and manufacturing plants for raw materials, we confirmed that we are not contributing to deforestation. We additionally held interviews regarding human rights violations in the supply chain and confirmed that no such violations were taking place.

4. Metrics and Targets

Volume of Wood Procured

(FY)

	2021	2022	2023	2024 Targets
Volume of wood procured	285,722 m ³	247,895 m ³	237,061 m ³	—
KPI: % that is ranked S or A	97.2%	97.1%	97.2%	97.5%
KPI: % that is zero-deforestation wood procurement	88.1%	88.0%	89.8%	92.0%
Total score (maximum 43 points)		Wood product procurement ranking ¹		
34 and above		S		
26 or more		A		
17 or more		B		
Below 17		C		

¹ Wood product procurement ranking

Depending on their total score, purchased wood products are classified into four levels, from high to low: S, A, B, and C. Minimal acceptable score thresholds are set for Wood Procurement Guidelines 1. and 4., which are especially high priority (see page 133). We aggregate and disclose these scores as part of efforts to achieve net positive impact and no net loss.

Biodiversity Conservation

Percentage of Wood Products by Region

(FY)

	2021	2022	2023
Domestic wood	24.72%	25.52%	26.12%
East Asia ¹	5.08%	8.79%	7.54%
Europe	37.48%	31.95%	33.55%
South Pacific ²	11.78%	11.81%	12.75%
North America	10.41%	12.94%	9.59%
Recycled wood ³	7.52%	7.84%	10.18%
Other ⁴	3.01%	1.15%	0.27%

1 Excluding Japan

2 Indonesia, Malaysia, etc.

3 Particle board and other building materials recycled from construction waste, etc.

4 Africa, etc.

Biodiversity Conservation

(FY)

KPI	Unit	2021	2022	2023	2024 Targets
Biodiversity-friendly tree planting ⁵	Thousand trees	18,116	19,003	19,840	21,000

5 Cumulative number of trees planted under the *Gohon no Ki* Project

5. Initiatives and Other Related Information

Evaluating effectiveness quantitatively using big data⁶ on biodiversity

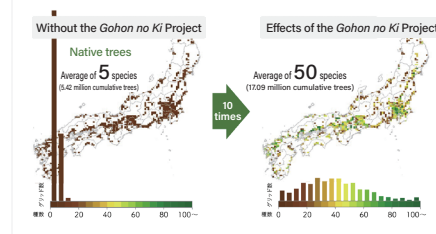
In 2019, to comprehensively evaluate small green spaces scattered across Japan that could not previously be assessed, we worked with the Kubota Laboratory in the Faculty of Science of the University of the Ryukyus to start a joint verification analyzing the effectiveness of quantitative assessments of biodiversity conservation from a macro perspective. Using the big data on biodiversity from the University of the Ryukyus in addition to cumulative data on the number, species and location of trees planted by the Company, in 2021, this analysis made it possible to quantitatively express the effect of the *Gohon no Ki* Project on biodiversity in terms of the number of bird and butterfly species

being attracted to residential areas. We also quantitatively evaluated the effectiveness of restoring biodiversity in Japan's three largest metropolitan areas (Tokyo, Osaka and Nagoya) using an integrated diversity index and conducted simulations to assess the effect of continuing the *Gohon no Ki* Project through 2070.⁷ The results showed that the *Gohon no Ki* Project contributes to the restoration of biodiversity, and that the potential benefits can be amplified by expanding the project in the future. We will widely disclose not only the results of these assessments, but also the expertise we have accumulated through our activities over the past 20 years, and will continue to work with many companies and individuals to promote nature positive initiatives.

In July of 2023, to further accelerate the Company's efforts in biodiversity conservation, we have entered into a collaborative agreement⁸ with Think Nature Inc. to promote biodiversity net gain and the standardization of its calculation methods. For example, we have developed a tool for proposing the combination of tree species to plant in order to maximize biodiversity net gain in future housing construction sites. We will accelerate our efforts aimed at our 2030 nature positive initiative while improving the quality of our ecosystem-friendly *Gohon no Ki* Project.

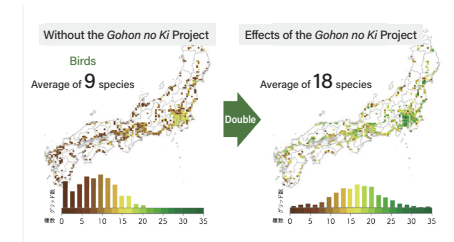
Effects of the *Gohon no Ki* Project

Project has achieved a **tenfold increase in tree species that are the foundation of biodiversity**



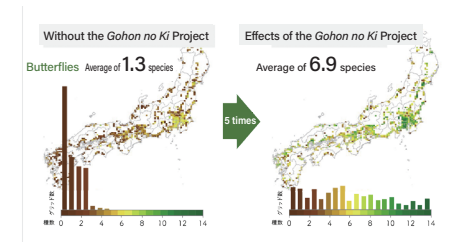
Results of big data analysis: Effect on birds

Gohon no Ki has the effect of attracting about **Twice as many bird species** to residential areas



Results of big data analysis: Effect on butterflies

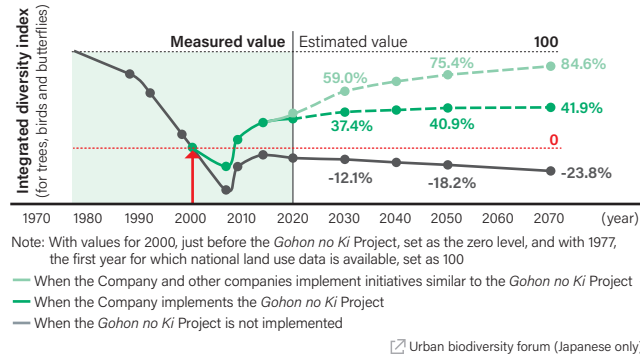
Gohon no Ki has the effect of attracting nearly **Five times as many butterfly species** to residential areas



Biodiversity Conservation

Quantitative evaluation of nature positive effects

Simulation of changes through 2070 in three metropolitan areas (Tokyo, Nagoya and Osaka) where green space degradation is significant



Urban greening

Big data on biodiversity has revealed that urban areas with densely packed houses and a large number of people are just as important to biodiversity conservation as forests and satoyamas (the traditional Japanese rural landscape consisting of cultivated fields, forests and human settlements that are interconnected and coexist harmoniously). It is important to create high quality green spaces in urban areas where the available area is scarce. The Company has created high-quality green spaces that significantly impact biodiversity conservation efforts through its Gohon no Ki Project, a project focused on planting native tree species. We will propose better quality green spaces by quantitatively assessing biodiversity using big data and by demonstrating precisely how cohesive green spaces in urban areas impact biodiversity conservation

Corporate green space that can contribute to biodiversity and obtaining Nationally Certified Sustainably Managed Natural Sites certification

On the north side of the Umeda Sky Building in Kita-ku, Osaka, where the Company is headquartered, we created the Shin-Satoyama Garden covering 8,000 m². This garden was renovated in 2006 with more than 500, mainly medium to large native trees, based on the principles of the Gohon no Ki Project. We planted native Japanese tree species and more than 200 species of shrubs and flowers to create green spaces. In the belief that a variety of types of spaces supports the richness of an ecosystem, we provided terraced rice paddies and fields to reproduce a satoyama in the city center.



Westward view of Shin-Satoyama and the Wall of Hope

The growth of a wide variety of plants has increased the amount of greenery, and many creatures—including more than 40 species of wild birds and more than 50 species of butterflies—visit, live and grow in the garden. The arrival of birds of prey, which are rarely seen in the city, has also been confirmed. Instead of employing the conventional consumption-oriented management approach of removing weeds and fallen leaves immediately, natural low-load circulatory management has been adopted for the satoyama to enrich the soil organisms and broaden the food chain. In this way, we have created a green space where many creatures can now thrive.

In October 2023, Shin-Satoyama was certified as a Nationally Certified Sustainably Managed Natural Site. This certification will help Shin-Satoyama contribute to achieving Japan's 30by30 target through preserving the value of biodiversity and increasing its quality. We also expect it to have a positive ripple effect on biodiversity conservation and contribute to enhancing corporate value.

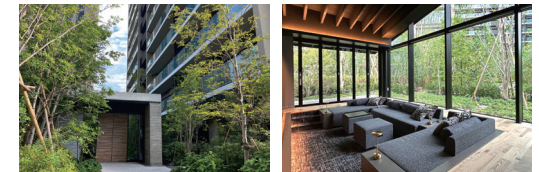
¹ Nationally Certified Sustainably Managed Natural Sites: The Kunming-Montreal Global Biodiversity Framework, a new set of global goals to be achieved by 2030, was adopted at the 15th Conference of the Parties to the Convention on Biological Diversity (CBD-COP15) in December 2022. Among them was the 30by30 target, setting the goal to effectively preserve 30% or more of all land and sea as healthy ecosystems. The initiative in Japan to achieve this goal is referred to as a Nationally Certified Sustainably Managed Natural Site (areas where biodiversity is being pursued through private-sector efforts and certified by the Ministry of the Environment).

Additionally, in 2013, we completed the "Wall of Hope," a huge greening monument on the east side of Shin-Satoyama measuring 9 meters high and 78 meters long that was installed at the initiative of the renowned architect Tadao Ando. In order to function as a model for the kind of vertical spatial greening that is expanding in cities, we covered the green wall with more than 20,000 plants of about 100 diverse species, focusing mainly on the tree species selected for the Gohon no Ki Project. The strategic arrangement of plants that flower or change colors at different times allows visitors to enjoy the varied appearance of the garden as it changes with the seasons. The Shin Satoyama project has become familiar to nearby residents and office workers as a place where one can experience the true value of the ecosystem.

Promoting greening and environmental conservation in condominiums for sale and urban development projects

In the condominium for sale segment, we are utilizing the principles of the Gohon no Ki Project for property exteriors. In our GRANDE MAISON[®] condominium brand, we maintain a constant awareness of greening, with a target green coverage ratio (the percentage of the property's site area that is planted) of around 20% or more. The average green coverage of the 13 condominiums completed in FY2023 was 20.7%, representing green coverage of 5,308 m². The outdoor areas surrounding multi-unit buildings such as condominiums also function as a place for re-establishing community among residents, which has increasingly been lost as condominium security has tightened in recent years. The abundance of greenery soothes the spirits of residents and enhances the value of the condominium.

² GRANDE MAISON (Japanese only)



Biodiversity Conservation

Urban development under the concept of *keinen bika*—creating a landscape that grows more beautiful over time

Since 1977, we have been working on community developments under the names “Common Life” and “Common City.” Designed with an awareness of the connections between neighbors and communities, the shared spaces boast lushly green plazas and streets as symbols offering a richer life, with a townscape that will grow more attractive over the years under the concept of *keinen bika*. This approach leads to beautification and is highly appreciated by the local residents.

Since launching the *Gohon no Ki* Project in 2001, we have been promoting urban development that emphasizes the quality of greenery, keeping in mind the planting of native species in consideration of a healthy ecosystem. In 2005, we established the Urban Development Charter¹ which outlines our diverse expertise cultivated through urban development, such as that acquired through the *Gohon no Ki* Project, with adherence to the concept of sustainability.

¹ Urban Development Charter

Skyrail Town Midorizaka (Hiroshima City)



Photo from 1997



Photo from 2009

Domestic wood initiatives at Sekisui House

Looking at the forest industry in Japan, while many forests are entering a period of full-scale use, they are not being replanted for the next generation for a number of reasons, and are not being fully utilized.

To revitalize the domestic forest industry, we believe it is necessary to achieve the seemingly contradictory goals of increasing demand to promote the renewal of forests for the next generation and advancing branding to create added value. Therefore, we are shifting to the use of domestic timber, mainly for the structural materials in our SHAWOOD wooden-frame houses.

We do not simply use domestic timber, but also develop it as regional brands. By adopting materials from the regions where our customers live, we are contributing to local production for local consumption and the revitalization of regional economies.

Currently, we are developing cedar, cypress and larch products under 18 brands in 17 regions nationwide. Over 7,500 buildings have now been built with these materials. These products have grown to the point where they are an essential element of SHAWOOD.

In response to the “wood shock” that hit the world in 2021, we took full advantage of the domestic timber supply network that we have cultivated to mass produce laminated beams made of cypress. The results of these efforts include using multiple procurement routes for key materials to fulfill our supply responsibilities and to put a system in place that prevents delays when executing our business operations. As an added benefit, by viewing the wood shock not only as a supply problem for the Company, but as an opportunity to create demand for domestic timber, we were able to demonstrate our approach to providing solutions to social problems.



SHAWOOD posts bearing the brand of the producing area

Supply chain engagement

It is necessary for internal and external stakeholders to understand the policies and work together with us to achieve our goals set out in the newly established and revised Wood Procurement Policy as well as the recently revised Wood Procurement Guidelines. As a result, we held a hybrid briefing session in December 2023.

We invited a lecturer from the international environmental NGO Friends of the Earth Japan (FoE Japan) to give a keynote speech sharing the latest information on wood procurement. Two of our suppliers shared examples and all parties involved gained a deeper knowledge of the Company’s policies and guidelines.

There were over 140 participants from 54 different companies, including suppliers of wood-based materials, internal wood procurement personnel and those in charge of development. We were able to share information with a large number of people as participation was open to secondary suppliers and beyond.



Biodiversity Conservation

Acquiring forest certifications (CoC certification)

The Company uses forest certification systems as one method to advance FairWood procurement and the Production and Procurement Division has acquired FSC^{®1}, PEFC² and SGEC³ CoC certifications.

Details of certification (FSC certification, FSC[®]-C195799)



Certified organizations	Production and Procurement Headquarters Tohoku Factory, Kanto Factory, Shizuoka Factory, Yamaguchi Factory
Certification code	SGSHK-COC-350922
Date of certification	January 19, 2024
Certification Body	SGS Hong Kong

¹ FSC (Forest Stewardship Council[®]): an international nonprofit organization with the goal of increasing the global responsibility of proper forest management.

Details of certification (PEFC certification)



Certified organizations	Production and Procurement Headquarters Tohoku Factory, Kanto Factory, Shizuoka Factory, Yamaguchi Factory
Certification code	FAM-PEFC-COC-039
Date of certification	May 15, 2022
Certification Body	Forest Audit of Mori

² PEFC: Programme for the Endorsement of Forest Certification Schemes, an international certifying agency that engages in global certification systems and mutual recognition based on governmental standards set in place for sustainable forest management.

Details of certification (SGEC certification)



Certified organizations	Production and Procurement Headquarters Tohoku Factory, Kanto Factory, Shizuoka Factory, Yamaguchi Factory
Certification code	FAM-SGEC-COC-039
Date of certification	May 15, 2022
Certification Body	Forest Audit of Mori

³ SGEC: Sustainable Green Ecosystem Council was established as Japan's unique forest certification system, providing mutual recognition with PEFC since 2016.

E Initiatives to Realize a Circular Economy

1. Governance

Under the ESG Promotion Committee, the Sekisui House Group has set up a Resource Recycling Task Force within the ESG Management Promotion Headquarters to build and administer a system for resource recycling for the entire Group. To maintain advanced resource recycling procedures, we created the Sekisui House Zero Emissions system based on the Wide Area Certification System. We also set up our own facilities, called Resource Recycling Centers, to consolidate waste generated at construction sites and ensure reliable recycling. To support this system, we created a waste sorting guide for resource recycling as well as guidelines that set out the criteria for selecting recycling companies. We are distributing information on these measures to our employees and partner building contractors, and we have developed and operate our own waste collection and waste measurement systems. In this way, we centrally manage all processes from waste generation to recycling.

In addition to using recycling methods, we also coordinate related resource recycling activities that help develop a circular economy, including through our product development and manufacturing departments.

2. Strategy

Resource recycling guidelines

Our basic guideline is to sustain an advanced resource recycling system based on the Sekisui House Zero Emissions system.

Basic policy for zero emissions

1. This system is designed to control waste generation throughout the entire supply of pre-engineered housing by analyzing the state and nature of waste generation and continually providing information useful for reducing waste during design, production and construction.

2. This system not only establishes standards for treatment consigned to others and ensures effective treatment contracting based on those standards, but must also be able to withstand future improvements in social standards.

Priority items

- Ensure effective recycling processes
- Ensure traceability
- Implement complete sorting of waste within the Company

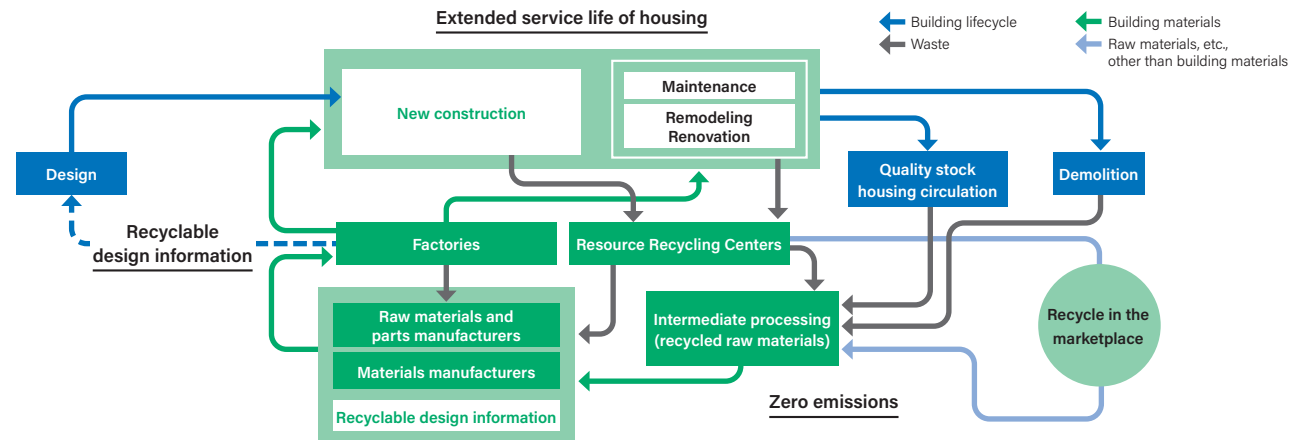
3. Operations follow the Wide Area Certification System, in principle, as a basis for fulfilling the above norms.

Measures and commitments to reduce resource use

The Sekisui House Group works to reduce resource use based on three approaches.

1. Through zero emission initiatives, we are working to recycle and make effective use of waste from construction sites, with a focus on material recycling.
2. We strive to improve durability and provide after-sales services and remodeling in step with the lifecycle stages of housing. These efforts help to extend the service life of housing and reduce resource use.
3. We aim to realize a circular economy through research and development of new building materials using recycled resources.

Resource Recycling



Initiatives to Realize a Circular Economy

Measures and commitments for resource use at factories

To effectively utilize byproducts resulting from the production of factory-manufactured components, we recycle such byproducts by processing and converting them into raw materials.

For example, we have adopted equipment for recycling scraps generated during exterior wall panel manufacturing and the cutting of holes for pipes to pass through, turning them back into raw materials for exterior walls.

Measures and commitments for handling waste

Controlling waste generation

We have focused efforts on the development of systems intended to control waste generation. We analyze the amount of resource inputs that go into product supply as well as the status and nature of waste generated during the manufacturing and construction processes. We also continuously improve systems for providing information useful in reducing waste in the processes of design, production and construction.

Utilizing waste

We establish recycling standards for the waste we generate and ensure proper recycling in accordance with these standards. Moreover, we will continue to pursue recycling technologies that are economically feasible while further contributing to the emergence of a society committed to resource recycling. We will pursue these goals in collaboration with our partner companies, including material manufacturers, factory production companies, partner building constructors, intermediate processing companies and demolition companies.

Product requirements of the Green Procurement Policy

We are committed to green procurement, seeking to fulfill our social responsibility under our basic purchasing policy of providing the best quality, robust delivery and reasonable prices while also incorporating ESG 3. Risk Management

considerations. Through such efforts as working with suppliers to develop and procure products that are easy to separate and sort for recycling, the Company prioritizes choosing environmentally friendly products and services in our procurement efforts that contribute to sustainability.

For example, to facilitate the sorting of hot water pipe scraps, we do not use adhesives to bond double-layered hot water pipes when the layers are made from different types of plastic.

Policy for proper disposal of hazardous waste

The hazardous waste this report refers to is waste generated during operations, which, according to the Wastes Disposal and Public Cleansing Act, the Group regulates as specially controlled industrial waste (including specific types of hazardous waste regulated in the Basel Convention, etc.). All types of hazardous waste are properly handled throughout storage, transport and disposal based on legal, governmental and industry guidelines.

Hazardous waste mainly originates from building materials used in construction and demolition (including restorations) and leftover chemical substances produced as byproducts in material manufacturing. For building materials used in the above-mentioned operations, this may include asbestos in heat-retaining, thermal insulation and fire-resistant coating materials, slag, sludge above base amounts and other hazardous waste connected to construction work that may be generated depending on site conditions.

As a rule, hazardous waste is disposed of in controlled landfills which have measures to prevent leakage into the natural environment. Leftover chemical substances produced as factory byproducts of material manufacturing are, with regard to their various characteristics and properties, recycled in their entirety through processes such as neutralization, reduction treatment and thermal recovery conducted through incineration.

Because hazardous waste generated by factories presents a large potential environmental impact, procedures have been established by these factories to prevent and mitigate pollution in emergencies such as accidents, earthquakes, and other disasters. Through repeatedly conducting appropriate tests, they are

working to ensure there are zero emissions to the natural environment even during emergencies.

Hazardous Waste Generated¹ (Sekisui House Group, including Konoike Construction) (FY)

	Unit	2021	2022	2023
Group Total		612	904	763
Konoike Construction civil engineering and demolitions	t	515	775	648
Sekisui House, etc. ² demolitions		62	57	66
Sekisui House manufacturing plants		35	72	49

¹ The Sekisui House Group defines hazardous waste as specially controlled industrial waste stipulated in the Wastes Disposal and Public Cleansing Act (flammable waste oil, scatterable asbestos, etc.), including waste regulated by the Basel Convention, such as waste PCBs.

² "Sekisui House, etc." includes Sekisui House, Sekisui House Construction and Sekisui House noie.

3. Risk Management

Addressing resource recycling risks

When formulating the Sekisui House Zero Emissions system, the Group focused on building a system that takes into account certain risks in resource recycling, such as fraudulently passing off non-recyclable waste as recyclables and illegal dumping. In addition to selecting recycling companies based on the guidelines from our selection criteria, we periodically inspect treatment centers, perform operational audits and, on an ongoing basis, manage consignment contracts and waste management manifests through a centralized in-house management system. Through these efforts, we work to minimize (avoid) potential risks. A dedicated department at the head office is ready to take immediate action in the unlikely event that a potential violation of laws and regulations is detected.

Initiatives to Realize a Circular Economy

4. Metrics and Targets

Zero emissions in production and construction divisions

Expanding measures under the Wide Area Certification System

Housing construction requires a significant input of resources. We are involved in the entire lifecycle of housing from producing materials in our factories to demolition work, and we succeeded in reaching zero emissions¹ in four of our divisions (material production, new construction sites, after-sales maintenance, and construction sites for remodeling our own properties) between 2002 and 2007. Since then, we have maintained this achievement as we continue to operate with consideration for the quality of our recycling efforts. One reason we were able to lead the industry by achieving zero emissions in so many areas of our business was our use of the Wide Area Certification System, which is a special feature of Japan's Wastes Disposal and Public Cleansing Act. In 2004, we were the first in the Japanese construction industry to gain this certification, and we have since managed to expand our zero emissions efforts through this system.

In 2019, a joint application including all 17 Sekiwa Construction companies at the time was approved. Through efforts like these, we intend to further expand and strengthen the resource recycling system of the entire Group.

As one part of zero emissions efforts centered on the lifecycles of our products, we are also working toward zero emissions in the real estate leasing business, with Sekisui House Real Estate Holdings, Ltd. playing a central role. Specifically, we are implementing initiatives aimed at achieving zero emissions of waste (interior materials such as wallpaper and cushion flooring) generated during repair work when residents vacate Sha Maison rental housing delivered by the Company and managed by Sekisui House Real Estate companies. Looking ahead, a large amount of aging photovoltaic panels are expected to be scrapped in coming years. We are considering installing recycling facilities for these panels within our in-house waste processing system run primarily through the Resource Recycling Centers.

¹ Zero simple incineration of industrial waste and zero landfill disposal

Resource Recycling Centers: The heart of our zero emissions initiative at new construction sites

One unique characteristic of the Sekisui House Zero Emissions System's waste collection system, under the Wide Area Certification System, is our use of in-house Resource Recycling Centers. These facilities, which have been in operation at our production facilities across Japan since 2003, serve as the heart of our zero emissions efforts at new construction sites. The centers manage processes from allocating waste collection vehicles to supervising out-sourced recycling companies.

All our waste generated during new construction is first sorted into 27 categories on site, then re-sorted into 60 to 80 categories at our 23 Resource Recycling Centers nationwide. All this waste is eventually recycled under the Group's management. By disassembling items into components of a single material and reducing their volume through compression and heating, we prepare these materials to enter recycling streams handled partly by external contractors.

Plastic, which has become a particular problem in recent years, has been collected and recycled at a 100% rate since the introduction of zero emissions at our new construction sites in 2005. In addition to sorting plastics by type, we subdivide sorting categories, such as the degree of soiling, according to the requirements of recycling facilities in an effort to maintain a high standard of recycling.

Sekisui House New Construction Waste Recycling Rate (FY)

2021	2022	2023
100%	100%	100%

Our waste measurement system

Securing traceability in the proper disposal of construction waste is of the utmost importance not only to ensure proper treatment and recycling of waste, but also for promoting recycling business models such as streamlined construction. We have been proactive in introducing information and communications technology, starting with the trial of a waste measurement system using IC tags in 2007.

In 2017, we updated our proprietary Electronic Processing System for waste collection into a cloud-based system in order to respond flexibly to requests for

enhancement of electronic system functions for waste management. We now operate a waste measurement system that utilizes 2D barcodes. This innovative system accurately monitors conditions at the time of disposal, aggregates and analyzes data from each building, and monitors the total disposal amount and the disposal amount by type of waste in real time. The detailed data analyzed in this way is then fed back to inform product development, material design, production processes and construction processes, enabling the more effective use of resources.

Waste Measurement System Utilization Rate at Sekisui House Business Sites (FY)

2021	2022	2023
100%	100%	100%

Raw Material Use Avoidance and Reduction Targets (FY)

KPI	Unit	2021	2022	2023	2024 Goals
Waste rate (new construction) ²	%	5.4	5.6	5.9	5.0
Raw material and resource input	Thousand tons	942	887	820	—
Waste from new construction (factory production/construction)	Thousand tons	49.8	50.0	48.4	—
Waste recycling rate (new construction) ³	%	100	100	100	100
Waste recycling rate (maintenance and remodeling) ⁴	%	95.6	94.6	94.8	—

² Ratio of waste (from factories and construction) to raw material production and resource inputs for new construction of pre-engineered housing

³ Waste recycling rate for new pre-engineered housing

⁴ Waste recycling rate for maintenance and remodeling work

Basic program for increasing the resource usage rate

We are working to maintain resource efficiency-conscious product design that minimizes the generation of unused materials (waste), regardless of changes in material inputs required to enhance housing functionality (such as improving durability, thermal insulation and the flexibility of living spaces).

Initiatives to Realize a Circular Economy

Notable initiatives

■ Recycling packaging and paper at construction sites

Sekisui House has launched a project to replace its plastic bags, and instead start providing recyclable paper bags. We considered a variety of materials for the new bags, ultimately selecting sanitary packaging paper used to package sanitary equipment, such as hot water heaters. This paper can be mixed with general recycled paper, without the use of virgin pulp, to be recycled into environmentally friendly paper bags.

We expect this project to help alleviate environmental burden, reducing plastic use by 10,723 kg per year through the phasing out of plastic bags, and reducing virgin pulp use by 13,232 kg per year through the use of waste materials and recycled paper.



Materials samples

Sample bag

■ Dyne Concrete recycling

The Kanto Factory and Hyogo Factory recycle concrete waste that arises in the Dyne Concrete manufacturing process as raw materials. Scrap material bored out of exterior wall panels and concrete residue that adheres to equipment were previously disposed of as waste. Some of this material is now recycled by pulverizing it to specific grain sizes for reuse as raw materials, reducing overall resource consumption.

■ Bellburn recycling

Bellburn scraps are pulverized and used as filler in Sekisui House's Shellshut Slab sound- and vibration-absorbent floor system. By replacing the inorganic sands previously used for this filler with Bellburn pulverized to specific grain sizes, we are able to reduce material input.

Reducing the volume of waste and improving the quality of recycling

We continue working to reduce the amount of waste generated at our production and construction sites. In FY2023, we reduced the total amount of waste generated from factory production by 5.3% from the previous fiscal year.

Although the amount of waste generated per newly built house has decreased by nearly 60% compared with FY1999 levels as a result of our zero emissions initiative, in recent years this figure has been increasing slightly amid the growing proportion of houses with high environmental performance and houses requiring large amounts of material input.

However, with the recent global emphasis on achieving a circular economy, greater importance is being placed not only on reducing the amounts of waste generated, but also on improving the quality of recycling through the redesign of entire businesses. In light of this trend, we have been improving our construction methods by revising our structural building and construction techniques, utilizing the strengths of our in-house production and direct construction, handled exclusively by Group companies and partner building constructors.

Moreover, by thoroughly sorting, categorizing and processing waste to meet the exact needs of recyclers, we are contributing to a higher quality of recycling.

At the same time, while maintaining zero emissions during the production, construction and maintenance phases, we are conducting research aimed at increasing our material recycling rate, which stood at 80.6% in FY2023, to 90%.

Recycling initiatives

We reuse waste generated in-house as a raw material in buildings we construct. For example, we manufacture house construction materials from plastics recovered from packaging materials and an acoustic insulation material for floors from crushed scrap roof tiles.

■ Reusing solid waste

At manufacturing and processing facilities located at two of our Resource Recycling Centers, scrap plasterboard collected from new housing construction sites and eggshells from third-party food processing factories are mixed together and crushed. This produces Platama Powder, an athletic field marking chalk, which we have manufactured and sold since 2010. This initiative has enabled us to establish a new commercial distribution channel and a system for continual recycling by regularly purchasing egg shells, which were previously thrown away as food waste.

We also reuse sorted solid waste by selling it in such forms as resin materials, woodchips, power line materials and Styrofoam materials (ingots).



Platama Powder, an athletic field marking chalk with a low risk of irritation to the human body.

Eco Mark

(FY)

	Unit	2019	2021	2022	2023	2025
Platama Powder production	t	1,795	1,979	1,668	3,735	Up 5% from 2019

Initiatives to Realize a Circular Economy

Efforts to use environmentally-friendly paper

We proactively engage in green procurement, which prioritizes the purchase of environment-friendly products, and we purchase stationery and other office products used by our business offices across Japan in accordance with our Green Procurement Guidelines.

By gathering, compiling and visualizing data on the amount of paper used in offices, we are raising awareness of the need to reduce the amount of paper we consume. In collaboration with Sekisui House Umeda Operation Co., Ltd., we supply domestically produced, bright white 100% recycled paper that is high quality and environmentally friendly (the standard under the Green Purchasing Law is 70% recycled paper content). This recycled paper, produced by the Group, is supplied to offices, including Group companies, throughout Japan.

Paper usage¹ (FY)

	Unit	2021	2022	2023
Ratio of environmentally-friendly copy paper used	%	99.9	99.9	99.9
Annual copy paper consumption	t	668	617	581
Annual copy paper consumption per employee	kg	44.5	41.3	37.9

¹ Sekisui House (non-consolidated)

Initiatives to reduce hazardous waste

We are constantly considering how to use the best economically feasible technologies. One example of reducing hazardous waste is electrodeposition coating materials used for antirust treatment on steel frames. In the past, these contained a very small amount of lead, which could become hazardous waste, but since January 2003, we have switched to lead-free coatings.

5. Activities and Other Related Information

Materials Used in Production (FY)

	Unit	2021	2022	2023
Metal	Thousand tons	264	261	241
Concrete		235	230	210
Glass and ceramics		215	202	183
Lumber		135	121	117
Other		76	73	69
Total		924	887	820

Waste Generated (Sekisui House Group, Including Konoike Construction) (FY)

	Unit	2021	2022	2023
Waste generated ²	Thousand tons	1,021	1,070	1,144 ✓
Recyclable waste ³		997	1,048	1,128
Non-recyclable waste ⁴		24	21	16
Direct to landfill		21	18	13 ✓
Other		4	3	2

² Total waste from offices, factories and construction/demolition sites

³ Waste generated that is recycled (material recycling or thermal recycling)

⁴ Waste generated that is disposed of in landfills, etc. and not recycled

Indicators marked with ✓ have been assured by KPMG AZSA Sustainability Co., Ltd.

E Measures Against Environmental Pollution Caused by Chemical Substances, etc.

1. Governance

With regard to chemical substances used by each department and subject to pollution prevention measures, the Environmental Subcommittee confirms their usefulness and risks and when necessary, instructs improvements, thereby ensuring proper monitoring and supervision of their use.

2. Strategy

Preventing pollution from chemical substances

Throughout the lifecycle of our homes, we strive to minimize risks of chemical substance use through proper EVABAT (Economically Viable Application of Best Available Technology) procedures to prevent and stop pollution in excess of legal regulations. To ensure our own proper handling of chemical substances, we uphold legal regulations, as well as national, municipal and industry guidelines, and in 2007 we created our own Chemical Substance Guidelines from

the standpoint of risk management. We combine legal regulations with new knowledge of chemical substances to reevaluate these target substances and revise related guidelines.

 Chemical Substance Guidelines (Revised Second Edition)

3. Risk Management

Addressing risks of contamination by hazardous chemicals

In addressing risks of contamination by hazardous chemicals, it is essential to always strive to balance corporate activities with preventive measures by such means as setting management levels according to the risks of using the chemical substances in products. We set a variety of standards and procedures for handling our products at each phase in their lifecycles.

Addressing risks related to soil and groundwater pollution

We work to minimize risks, including the prevention of secondary pollution, by conducting surveys and implementing countermeasures not only for the land of Company facilities, but also for land for which we are engaged in transactions.

Prior to engaging in land purchase or sales contracts, we identify risks related to soil and groundwater contamination by means of a pre-screening system using our own soil contamination checklist (including a survey on history of land use; surveys of topography, geology and groundwater; a data survey on surrounding environmental measurements by local governments; a site inspection survey; and legal compliance check).

In the case of land that may contain contaminated soil, such as former factory sites, sellers are increasingly conducting their own voluntary surveys. When purchasing land, a specialized department of the Company scrutinizes all such survey reports. If a problem is identified regarding the completeness of the information, we ask the seller to conduct additional surveys.

Properties that are determined to be at risk of contamination are analyzed by designated research institutions to evaluate the appropriateness of the transaction. Where soil contamination has been discovered as a result of the

Responsible Divisions, Preventive Procedures and Risks Addressed at Each Lifecycle Phase

Lifecycle phase	Division	Preventive procedures	Design and Development Divisions	Production Divisions	Construction Divisions	Design and Development Divisions	
			Environmental design	ISO-based standards/ procedures for environmental management, etc.	Construction management standards/ procedures	Environmental design that has minimal impact on residents	Providing information on the use of hazardous substances in products
1	Product design and development	Impact across product lifecycles	○				
2	Production at suppliers	Risk of supplier employees being exposed to substances during production Risk of environmental contamination during production	○				
3	Production at Company factories	Risk of supplier employees being exposed to substances during production Risk of environmental contamination during production ¹	○	○			
4	Construction	Risk of employees being exposed to substances when handling components Risk of environmental contamination due to improper disposal of construction waste	○		○		
5	Residence	Risks to residents from insufficient environmental design	○			○	
6	Product disposal	Risk of employees being exposed to substances during demolition Risk of environmental contamination due to improper disposal of waste	○				○

¹ Risk of environmental contamination during production

To address the risk of contamination by hazardous waste, during normal operations we thoroughly enforce proper disposal as part of factory zero emissions schemes. We also strive to ensure appropriate response in the event of an emergency, such as an accident or earthquake, by determining emergency contamination prevention and mitigation procedures ahead of time and testing such procedures on an ongoing basis.

Measures Against Environmental Pollution Caused by Chemical Substances, etc.

investigation, land with minor concentrations and distributions of contamination (land contaminated mainly with heavy metals where complete remediation can be guaranteed) undergoes remediation by soil replacement before the sale. In such cases, we explain the measures that have been taken as a material matter. Land with more serious contamination is not purchased.

At domestic factories on our own sites where contamination could be a risk if no action is taken, we have set up measures and procedures for investigation, prevention, ongoing management and emergency response (prevention and mitigation of contamination), and are implementing contamination risk management.

Initiatives for proper processing of hazardous waste

Approximately 95% of the hazardous waste that we handle is asbestos (Levels 1 and 2) from existing structures, which is strictly treated as specially controlled industrial waste. The remainder is mainly residual substances left over from the use of chemical raw materials handled in domestic production facilities.

For specially controlled industrial waste generated at domestic factories, we comply with the Wastes Disposal and Public Cleansing Act, as well as all related laws and regulations (such as the Ordinance on Prevention of Hazards due to Specified Chemical Substances) and industry guidelines. Procedures are also in place to identify potential accidents and emergencies that could lead to significant environmental impact, to prevent any adverse environmental impact, and to conduct mitigation to minimize the escalation of impact. At the same time, the effectiveness of emergency preparedness and response procedures is maintained through annual testing and internal audits.

4. Metrics and Targets

Atmospheric and other external emissions of chemical substances from factory production

Substances Subject to the PRTR Law¹ Targets (FY)

Targets	2021	2022	2023
<ul style="list-style-type: none"> Continue appropriate protective measures Maintain zero accidents caused by chemical substances 	No accidents caused by chemicals used in factory production occurred.	Same	Same

¹ Pollutant Release and Transfer Register Law: Law requiring the monitoring of environmental emissions of specified chemical substances and promotion of improved management. Businesses meeting certain conditions specified by Cabinet Order are required to report the amount of specified chemical substances released and disposed of annually.

Emissions and Transfer of PRTR-Listed Substances (FY)

	Unit	2020	2021	2022 ²
Emissions and transfer	t	55	64	48

² Because they are taken from a government report, the figures here are for the period from April 2022 to March 2023, which differs from the period covered by this report.

Atmospheric Emissions of Volatile Organic Compounds (VOCs)³ (FY)

Targets	2020	2021	2022 ²
60% decrease from FY2010 levels	71% decrease	78% decrease	87% decrease

Emissions of Volatile Organic Compounds (VOCs)³ (FY)

	Unit	2020	2021	2022 ²
VOCs subject to PRTR	t	24.4	68.5	20.0
VOCs not subject to PRTR		82.2	39.5	42.9

³ The Sekisui House Group confirms and monitors emissions of the 80 VOCs for which atmospheric emissions require monitoring designated under the Japan Prefabricated Construction Suppliers and Manufacturers Association's Eco Action 2020 management survey.

SOx and NOx emissions (factories in Japan) (FY)

	Unit	2021	2022	2023
Sulfur oxides (SOx)	t	0.057	0.052	0.047
Nitrogen oxides (NOx)		5.67	3.37	3.17

Initiatives for processing hazardous waste and preventing contamination by chemical substances

During Factory Production (FY)

Targets	2021	2022	2023
Maintain zero release of hazardous waste into the natural environment	No improper processing or scattering accidents.	Same	Same

During Construction (FY)

Targets	2021	2022	2023
<ul style="list-style-type: none"> Continue appropriate protective measures Maintain zero accidents caused by chemical substances 	No accidents caused by use of chemical substances occurred	Same	Same

Natural Environment (Soil) (FY)

Targets	2021	2022	2023
Maintain zero serious risk when purchasing land ⁴	No purchases (sales) occurred involving contaminated land exceeding legal standards or unremediated land.	Same	Same

⁴ Serious risk includes redevelopment of brownfield sites (land that is idle due to real or potential contamination caused by industrial activities, etc.).

During residential use

Adoption Rate of Next-generation Indoor Environment Control System SMART-ECS⁵ (FY)

Targets	Unit	2021	2022	2023
Minimum 70% adoption rate	%	79	80	81

⁵ SMART-ECS (Japanese only)

Measures Against Environmental Pollution Caused by Chemical Substances, etc.

Construction waste

In 2004, we acquired the first Wide Area Certification in the construction industry. We have achieved and maintained zero emissions by collecting 27 categories of waste sorted at our construction sites, re-sorting them into up to 80 categories at our Recycling Centers, and recycling 100% of waste.

(FY)

Targets	2021	2022	2023
Maintain zero release of hazardous waste into the environment during new construction	No release accidents occurred.	Same	Same

During Demolition and Disposal

(FY)

Targets	2021	2022	2023
Maintain zero emissions of hazardous waste into the environment during demolition work	No environmental release accidents occurred.	Same	Same

Pollution, waste and resource use costs (including shadow costs) and investment in R&D on reducing or avoiding their impacts

The Resource Recycling Centers at our factories handle waste from construction sites, sorting plastic products for recycling and collecting metals and other valuables. In FY2023, the operating expenses associated with the facilities, from the operation of collection points to disposal (costs imposed by waste issues), totaled ¥524 million. In addition, Group company Konoike Construction invested ¥1 million for experimental research aimed at developing technologies for processing soil containing radioactive substances.

Emissions and Transfer of PRTR-Listed Substances (FY2022)

(kg)

Factory	PRTR legislative decree number	CAS No.	Substance	Emissions				Transfer		Amount handled
				Discharged into the atmosphere	Discharged into bodies of water	Discharged into the soil	Landfill disposal at the business site	Transfer to the sewer system	Transfer outside of the relevant business site (waste disposal)	
Tohoku Factory	349	108-95-2	Phenol	0	0	0	0	0	0	4,541
	405	—	Boron and its compounds	0	6,683	0	0	0	8,039	16,380
	411	50-00-0	Formaldehyde	0	0	0	0	0	0	1,135
	412	—	Manganese and its compounds	15	0	0	0	0	130	1,219
			(Total amount of substances not subject to administrative reporting)	38	648	0	0	0	36	721
		Subtotal	53	7,331	0	0	0	8,205	23,996	
Kanto Factory	1	—	Water-soluble zinc compounds	0	0	0	0	0	121	1,071
	232	68-12-2	N,N-dimethylformamide	0	0	0	0	0	0	3,632
	240	100-42-5	Styrene	0	0	0	0	0	0	2,075
	300	108-88-3	Toluene	4,084	0	0	0	0	0	4,084
	412	—	Manganese and its compounds	71	0	0	0	0	476	2,165
		(Total amount of substances not subject to administrative reporting)	3,351	0	0	0	0	0	3,355	
		Subtotal	7,505	0	0	0	0	597	16,381	
Shizuoka Factory	1	—	Water-soluble zinc compounds	0	0	0	0	0	68	1,789
	300	108-88-3	Toluene	6,413	0	0	0	0	460	6,895
	349	108-95-2	Phenol	0	0	0	0	0	0	5,097
	405	—	Boron and its compounds	0	1,656	0	0	0	2,720	17,495
	412	—	Manganese and its compounds	161	0	0	0	0	1,199	6,214
		(Total amount of substances not subject to administrative reporting)	118	80	0	0	0	69	1,417	
		Subtotal	6,692	1,736	0	0	0	4,515	38,907	
Hyogo Factory			(Total amount of substances not subject to administrative reporting)	635	0	0	0	0	0	635
			Subtotal	635	0	0	0	0	0	635
Yamaguchi Factory	1	—	Water-soluble zinc compounds	0	31	0	0	0	404	1,285
	53	100-41-4	Ethylbenzene	1,482	0	0	0	0	0	1,482
	80	1330-20-7	Xylene	4,137	0	0	0	0	0	4,137
	296	95-63-6	1,2,4-Trimethylbenzene	2,673	0	0	0	0	0	2,673
	300	108-88-3	Toluene	1,550	0	0	0	0	0	1,550
	412	—	Manganese and its compounds	74	59	0	0	0	561	2,389
		(Total amount of substances not subject to administrative reporting)	149	0	0	0	0	0	1,394	
		Subtotal	10,065	90	0	0	0	965	14,910	
		Total	24,950	9,157	0	0	0	14,282	94,829	

Note: Because they are taken from a government report, the figures here are for the period from April 2022 to March 2023, which differs from the period covered by this report.

E Water Security

1. Governance

Sekisui House implements initiatives to address issues related to climate change, including water-issues, through the ESG Promotion Committee. Furthermore, at our factories, we have established a management system under ISO 14001, the international standard for environmental management systems, through which we are promoting water-related initiatives.

2. Strategy

Sekisui House's business activities, in such areas as housing, construction and remodeling, use only small amounts of water. However, as the impacts of climate change on human society and ecosystems intensify year by year, water resources are becoming a significant global concern. In particular, over the long term, water shortages are seen as a global water risk, and the conservation of water resources, using water stress as a metric, is a challenge going forward. To secure the sustainability of water resources, we not only avoid water risk in our own businesses, but work to promote efficient water use and prevent water pollution based on the understanding that these issues have a tremendous impact on our supply chains. To this end, we assess water risks, set water use reduction targets, and implement measures to promote the effective use of water resources and manage wastewater quality.

3. Risk Management

Initiatives at factories in Japan

Our five domestic production factories (the Tohoku Factory, Kanto Factory, Shizuoka Factory, Hyogo Factory and Yamaguchi Factory) use groundwater in addition to the municipal water supply and industrial-use water in the coating of steel frame members and the manufacturing and painting of exterior walls used in residential construction. All five factories have formulated water management plans. We are making ongoing efforts to ensure appropriate wastewater quality

management and the efficient use of water resources in these processes. Specifically, we implement wastewater quality analyses at least once a month and work to reduce water consumption through such efforts as reusing treated water for cleaning. Wastewater from all five factories in Japan is discharged into public sewers and rivers after being purified in the factory's effluent treatment plant. We manage wastewater quality according to voluntary standards set as annual targets that are stricter than the Water Pollution Control Law and local ordinances applicable to factories. In 2023, the measured water quality of discharge was better than these voluntary standards. In this way, we strive to prevent water pollution and protect the water quality environment in the areas surrounding our factories. We share the results of wastewater quality assessments at all five factories in Japan. In the unlikely event that our voluntary standards are exceeded, we share the information on the actualized water pollution risk at a managers' meeting to prevent recurrences.

Evaluating water stress levels at production sites

We have confirmed that none of the Company's production sites are located in regions designated as having high or extremely high (>40%) water stress levels as identified using the WRI Aqueduct tools developed by the World Resources Institute (WRI).

However, the Shizuoka Factory is located in a region predicted to have an extremely high (>80%) level of water stress in 2030.¹ Taking a medium- to long-term perspective, the Company considers the Shizuoka Factory as equivalent to a production site in a water-stressed region. Accordingly, we have confirmed the need to strive for the efficient use of water resources and usage reduction and are promoting better use.

¹ The Ingleburn Manufacturing and Quality Control Centre in Australia is located in a region predicted to have an extremely high (>80%) level of water stress in 2030, but the facility is not included as it does not carry out manufacturing processes that use water.

Cooperation with diverse stakeholders

■ Cooperation with customers

In our newly built houses, we have installed the latest water-saving fixtures

(faucets, showers, flush toilets, etc.) supplied by housing device equipment manufacturers as standard equipment in the majority of houses since before 2020. In this way, we are helping to reduce water consumption in houses. Furthermore, for existing homes, we are promoting the use of water-saving fixtures, including by replacing existing fixtures, through the remodeling business.


■ Cooperation at business sites in water-stressed areas

The Shizuoka Factory uses municipal water drawn from the Oi River system. Based on requests from the Toen Industrial Water Business Association, the Shizuoka Factory proactively uses industrial-use water, helping to reduce municipal water consumption.

■ Cooperation with public entities

Sekisui House participates in the Ministry of the Environment's Water Project. This project carries out activities related to offering initiatives, products, technologies and services that promote the effective use of water resources and water-saving sewerage in business activities in Japan.

Group company Konoike Construction is actively involved in renewable energy projects aimed at contributing to decarbonization and is therefore working with municipalities to develop small-scale local energy distribution. In addition to the ongoing project in Higashinada Ward in Kobe City, Konoike construction is working on two micro hydroelectric power generation projects in Okinoshima, Shimane Prefecture and one in Kami, Hyogo Prefecture. From these projects, Konoike construction has reached a comprehensive cooperative agreement regarding the promotion of renewable energy in Okinoshima, where they have made plans to start operations at the Minamidani Power Station in FY2024 to contribute to the region's revitalization.

 Ministry of the Environment's Water Project (Japanese only)

■ Cooperation with other regional companies

When shipping and transporting products to construction sites—whether from our own factories or those of our partner manufacturers—we use the Company's transport cases. After use, these cases are collected from construction sites, returned to factories, washed and reused. The water used in this washing is recirculated within the cleaning facilities, helping reduce water consumption. In addition, the employee cafeterias at some factories are operated by external food service contractors. As one part of water conservation efforts in these operations, we proactively use no-wash rice, which can be cooked without additional washing.

Water Security

■ Cooperation with investors

The management of office buildings owned by the Company and its overall real estate portfolio is entrusted to Sekisui House Asset Management, Ltd., which implements appropriate water management, including monitoring and setting numerical targets for the volume of water use.

Initiatives in overseas businesses

Located in Brisbane Australia, the mixed-use development project West Village has received high external praise for its environmentally friendly and socially sustainable initiatives. In 2017, it received the highest 6 Star Green Star Communities Certification from the Green Building Council of Australia (GBCA)¹ and in 2023 was honored with the Marketing Excellence Award for exemplary projects by the Urban Development Institute of Australia (UDIA)².

West Village comprises eight condominium buildings and nearly one hectare of green, open space, including four leafy laneways and two parks. In particular, Morrison Park, which lies within the village, incorporates nature conservation activities and historical property management initiatives. Wastewater in two of the neighboring residential buildings is treated onsite and stored in a 250 kL tank. This, together with a 50 kL rainwater tank is used to water the gardens in the park and contributes to promoting environmentally-friendly initiatives.

¹ [Green Building Council of Australia \(GBCA\)](#): Evaluates the sustainability of buildings, facilities and communities through what is known as the Green Star, the largest national voluntary and comprehensive evaluation system.

² [Urban Development Institute of Australia \(UDIA\)](#): Australia's largest real estate industry association



4. Metrics and Targets

The Sekisui House Group's Water Use (FY)

		Unit	2021	2022	2023
Municipal water ¹	At production facilities	1,000 m ³	812	812	894
			134	134	138
Industrial-use water	At production facilities		22	21	17
			22	21	17
Ground water	At production facilities		457	471	459
			457	471	459
Total		1,291	1,304	1,370	
	At production facilities	613	626	613	

Wastewater Volume by Discharge Destination (FY)

		Unit	2021	2022	2023
Sewers ¹	At production facilities	1,000 m ³	686	687	766
			8	9	9
Rivers	At production facilities		302	345	322
			302	345	322
Total			988	1,032	1,088
	At production facilities		310	354	331

¹ The boundary of calculation has been expanded from FY2021 results to improve accuracy

Water Use Per Unit of Net Sales (FY)

Unit	2021	2022	2023
(m ³ /million yen)	0.416	0.361	0.441

Company facilities in water-stressed regions

Shizuoka Factory: 1 location

Number and Proportion of Assets, Production, and Revenue in Water-stressed Regions

	Shizuoka Factory	All factories	Percent of total
Maximum production capacity	800 houses/month	2,800 houses/month	29%

Water Withdrawal/Consumption in Water-stressed Regions

Shizuoka Factory (FY)

	Unit	2021	2022	2023
Water withdrawal	1,000 m ³	57.5	55.4	58.7
Water consumption		7.8	4.4	6.4

Targets for reducing water consumption and withdrawal in water-stressed areas

Looking ahead at future water stress risk, the Shizuoka Factory is actively working to utilize industrial-use water in processes that previously used municipal water to demonstrate its proactive stance on conserving the water environment. Furthermore, the factory has set the target of reducing the consumption of industrial-use water by 80% in its internal wastewater treatment facilities from FY2021 levels by 2030. As part of these reduction efforts, we will promote the internal circulation of water by reusing some effluent and by expanding the use of rainwater. We view water consumption at the Shizuoka Factory as one of our most important indicators for water conservation, and are working to reduce water withdrawal and consumption.

Industrial-use Water Reduction Rate at Wastewater Treatment Facilities in the Shizuoka Plant (FY)

Unit	2021	2022	2023	2030 target
%	0 (baseline year)	25.0	93.5 ²	80

² Due to inadequacies in some of the reused water, the reduction rate for next fiscal year is expected to decrease.

Water Security

Targets and progress toward reducing the use of water as a raw material

The Company does not use water as a raw material.

Water pollutant discharge

Biochemical Oxygen Demand (BOD)

(FY)

	Unit	2021	2022	2023
Tohoku Factory	t	0.061	0.051	0.037
Kanto Factory		0.771	0.734	0.663
Shizuoka Factory		0.094	0.106	0.323
Hyogo Factory		0.056	0.054	0.027
Yamaguchi Factory		0.279	0.378	0.305
Total		1.261	1.323	1.354

Chemical Oxygen Demand (COD), Phosphorus, Nitrogen

Sites covered: Yamaguchi Factory

(FY)

	Unit	2021	2022	2023
COD	t	0.835	1.079	0.890 ✓
Phosphorus		0.071	0.097	0.086 ✓
Nitrogen		0.378	0.482	0.309 ✓

Calculation standards

Wastewater measurements taken throughout the fiscal year are used to calculate average COD and average concentrations of phosphorous and nitrogen. Average daily COD and concentrations of phosphorous and nitrogen are multiplied by average daily wastewater volume (m³/day). Monthly discharges are calculated by multiplying the average discharges by the monthly number of operating days of the factory, which is then multiplied by the number of days the factory operated to calculate annual discharges volume.

Note: Data is disclosed for sites subject to Japan's Water Quality Standards.

Indicators marked with ✓ have been assured by KPMG AZSA Sustainability Co., Ltd.

Number of Violations of Permits, Standards and Regulations Related to Water Quality and Quantity

(FY)

	2021	2022	2023
	0	0	0
There were no violations of permits, standards or regulations related to water quality or quantity		Same	Same

The Sekisui House Group's Costs Associated with Water-related Risks

(FY)

	Unit	2021	2022	2023
Municipal water and sewerage costs	Million yen	108	114	111
Other operating costs		109	125	121
Total		217	239	232

Investment in R&D to mitigate water-related risks

Group company Konoike Construction boasts a long track record and advanced technologies in the cleanup of soil contaminated by a variety of pollutants and, in addition to soil, is working in a wide range of areas including water pollution countermeasures and disaster-related waste disposal. In FY2023, the company implemented research and development as follows.

Topic	Unit	Cost
Development of water purification technology	Million yen	13
Development of technology to dispose of persistent substances		37
Enhancing existing environmental technologies (solidification and insolubilization, bio-treatment, etc.)		17

Water Security

Domestic Factory Water Quality Analysis Results (FY2023)

Emissions	Unit	Tohoku Factory				Kanto Factory: Factory				Kanto Factory: DYNE Panel Factory				
		Regulatory value under Water Pollution Control Law	Regulatory value under ordinances and agreements	Voluntary standard value	Measured value	Regulatory value under Water Pollution Control Law	Regulatory value under ordinances and agreements	Voluntary standard value	Measured value	Regulatory value under Water Pollution Control Law	Regulatory value under ordinances and agreements	Voluntary standard value	Measured value	
Hydrogen ion concentration (hydrogen index; pH)	—	5.8 or higher 8.6 or lower	5.8 or higher 8.6 or lower	5.9 or higher 8.5 or lower	7.2	5.8 or higher 8.6 or lower	5.8 or higher 8.6 or lower	6.0 or higher 8.4 or lower	8.1	5.8 or higher 8.6 or lower	5.8 or higher 8.6 or lower	6.0 or higher 8.4 or lower	7.7	
Chromium	mg/L	2	—	1	Below 0.1	2	1	0.5	0.1	2	1	0.5	0.01	
Copper		3	—	1.5	Below 0.1	3	—	1.5	0.1	3	—	1.5	0.01	
Phenol		5	—	2.5	Below 0.1	5	1	0.5	0.1	5	1	0.5	0.1	
Normal-hexane extracts (mineral oil)		5	5	3	Below 0.5	5	—	2.5	0.5	5	—	2.5	1.0	
Soluble manganese		10	—	5	Below 0.1	10	1	—	0.1	10	1	—	0.1	
Soluble iron		10	—	5	Below 0.1	10	—	5	0.6	10	—	5	0.2	
Phosphorus		—	—	—	—	—	—	8	2.8	—	—	8	0.3	
Nitrogen		—	—	—	—	—	—	90	8.7	—	—	90	1.3	
Chemical oxygen demand (COD)		—	—	—	—	—	25	—	6.1	—	25	—	6.5	
Biochemical oxygen demand (BOD)		160	20	—	2.1	160	25	15	3.1	160	25	15	3.5	
Suspended solids (SS)		200	150	60	4.9	200	40	20	2.6	200	40	20	2.6	
Coliform bacteria count		Bacteria/ cm ³	3,000 (daily average)	3,000 (daily average)	1,500	145.6	3,000 (daily average)	—	1,000	16.6	3,000 (daily average)	—	1,000	7.7
Zinc		mg/L	2	-	1	0.3	2	—	1.5	0.4	2	—	—	0.01
Emissions		Unit	Shizuoka Factory				Hyogo Factory				Yamaguchi Factory			
	Regulatory value under Water Pollution Control Law		Regulatory value under ordinances and agreements	Voluntary standard value	Measured value	Regulatory value under Water Pollution Control Law	Regulatory value under ordinances and agreements	Voluntary standard value	Measured value	Regulatory value under Water Pollution Control Law	Regulatory value under ordinances and agreements	Voluntary standard value	Measured value	
Hydrogen ion concentration (hydrogen index; pH)	—	5.8 or higher 8.6 or lower	5.8 or higher 8.6 or lower	6.0 or higher 8.0 or lower	7.5	—	—	6.2 or higher 8.2 or lower	7.4	5.8 or higher 8.6 or lower	—	6.0 or higher 8.0 or lower	6.7-7.6	
Chromium	mg/L	2	2	—	0.1	—	—	—	—	2	—	0 ¹	0	
Copper		3	1	—	0.05	—	—	—	—	3	—	0.1	0.03	
Phenol		5	5	—	0.05	—	—	—	—	5	—	2.5	0	
Normal-hexane extracts (mineral oil)		5	3	2	0.5	—	—	2	1 or lower	5	—	2.5	0	
Soluble manganese		10	10	—	0.1	—	—	—	—	10	—	5	1.6	
Soluble iron		10	10	3	0.1	—	—	—	—	10	—	5	0	
Phosphorus		—	—	—	—	—	—	—	—	1.56 (kg/day)	—	1.50 (kg/day)	0.35	
Nitrogen		—	—	—	—	—	—	—	—	11.88	—	6 (kg/day)	1.29	
Chemical oxygen demand (COD)		—	—	—	—	—	—	70	11.15	10.4 (kg/day)	—	10 (kg/day)	3.7	
Biochemical oxygen demand (BOD)		160	20	10	6.6	—	—	70	5.5	160	—	60	7.3	
Suspended solids (SS)		200	30	10	3.5	—	—	25	4.2	200	—	75	3.1	
Coliform bacteria count		Bacteria/ cm ³	3,000 (daily average)	3,000 (daily average)	100	3.9	—	—	1,500	2	3,000 (daily average)	—	1,500	1.8
Zinc		mg/L	2	1	0.5	0.2	—	—	2	0.04	2	—	1.8	1.03

¹ Not detected (below the detection limit)

Disclosure in Line with Task Force on Climate-related Financial Disclosures (TCFD) Recommendations

1. Governance

The Group has established the ESG Promotion Committee as a consultative body to the Board of Directors to determine and implement action policies while confirming that all ESG management initiatives are reasonable and in line with societal expectations.

The committee meets once every three months. Climate change response is positioned as one of the important agenda items of this committee, which evaluates the appropriateness of action policies and progress, and reports important matters to the Board of Directors. The Company-wide, cross-departmental Environmental Subcommittee reports to the ESG Promotion Committee. Mainly composed of head office department heads involved in environmental management and individuals in charge of environmental management in each business division, this subcommittee meets as needed to conduct more specific and detailed discussions. In addition, the Environmental Subcommittee broadly disseminates the decisions of the ESG Promotion Committee for adoption throughout the Group, including affiliated companies.

The ESG Promotion Committee ensures effective, timely management oversight by providing the director of the Board responsible for each business and other managers with routine reports and instructions on the implementation of ESG initiatives.

→ P.21 Corporate Governance System

2. Strategy

The Group aims for steady progress toward the overall decarbonization of its businesses. Accordingly, to clarify the appropriateness of the Group's strategy and issues, we anticipate various situations that may occur in the future, then conduct a scenario analysis while taking into consideration the specific circumstances of business activities and resources, as well as physical risks, including assumed business activities, duration and the useful life of assets. We also evaluate transition risks based on potential scenarios for legislation, technology development and market conditions, and identify and address climate-related risks (physical and transition risks) and opportunities for our business activities.

We have already completed risk assessments and adaptation plans for most of our businesses. However, since we have expanded our business into

new areas, including M&A over the past few years, we are planning to create transition plans for all existing businesses based on their specific circumstances by roughly 2025 in order to adapt to physical risks. In addition, we intend to establish a system for early risk assessment and response for 100% of our new businesses in the future, and disclose the necessary related information.

The scenario we refer to is the 1.5°C scenario shown in Table 1. However, even if regulations are strengthened to achieve the 1.5°C scenario, it is possible that individual countries will not be aligned in their actions, resulting in Table 1. Scenario Analysis Assumptions Item a world as projected in the 4°C scenario, where climate change is even greater. For this reason, we must prepare for both scenarios simultaneously. In FY2021, Japan set a new greenhouse gas emission reduction target of 46%, compared to the 2013 levels, by 2030 with a

view to achieving carbon neutrality. Based on this target, various medium- to long-term policies related to the housing industry were also set. For this reason, we have conducted a large-scale scenario analysis for all of our businesses and are reviewing our strategies. The potential financial impact of the major risks and opportunities identified through the scenario analysis, as well as our responses, are shown on the next page.

The financial impact and assumed time period are defined as follows.

Financial impact—Large: ¥20 billion yen or more; medium: ¥10 billion or more; small: less than ¥10 billion yen

Assumed time period—Short term: up to 3 years from the present; medium term: up to 2030; long term: up to 2050

Table 1. Scenario Analysis Assumptions

Item	Assumptions
Reference scenarios	<p>Scenarios published by various international organizations, including IPCC SSP¹ 1-1.9 (countries adopt ambitious climate policies to achieve 1.5°C or lower and net zero CO₂ emissions by 2050), IPCC SSP 3-7.0 (CO₂ emissions will not begin to decline even in 2050, resulting in high temperatures, heavy rainfall, storms and other impacts), IEA SDS (the Paris Agreement and other targets will be achieved through the development of energy policies and investments; many countries and companies will achieve 2050 net zero), IEA NZE 2050 (aimed at achieving net zero globally by 2050), and NGFS (Delayed Transition: due to the slow introduction of new climate policies and different levels of action in each country, emissions will not begin to decline until 2030, and then move toward net zero), as well as announcements by the Japanese government (NDC) and related councils, etc., such as "Reduce Japan's greenhouse gas emissions by 46% from the 2013 levels by 2030, with net zero emissions by 2050," "Reduce greenhouse gas emissions in the residential sector by 66% from the 2013 levels by 2030," "Ensure energy efficiency at the level of the ZEH standard for new houses built in FY2030 and beyond," and "By 2050, popularize houses throughout the entire housing stock that can contribute to carbon neutrality."</p> <p>Our model for transition risk assumes that the IPCC SSP 1-1.9, IEA SDS and IEA NZE 2050 scenarios of a 50% reduction in global CO₂ emissions by 2030 and a reduction to zero by around 2050 will require government policies including a high carbon tax and a market transition to decarbonization.</p> <p>In addition, as stated in the NGFS Delayed Transition scenario, continuing public and corporate initiatives to reduce CO₂ emissions under existing governmental measures until 2030 is inconsistent with the 1.5°C scenario. Moreover, the best temperature increase estimate, stated in the IPCC SSP 3-7.0, is 2.1°C rise over the medium term (from 2041 to 2060). Along with other parameters, these figures have been used as assumptions for physical risk.</p>
Subject companies and businesses	All existing businesses of the Sekisui House Group companies* (including the entire upstream and downstream value chain).
Quantitative/qualitative	Mainly a qualitative analysis of all existing businesses of the Sekisui House Group. Quantitative estimates of financial impact amounts for particularly important opportunities and risks.
Impact of Japanese market size	The Sekisui House Group generates most of its sales in the Japanese market (about 83% of sales from February 1, 2023 to January 31, 2024). The Japanese housing market is expected to contract gradually due to the shrinking population, declining birthrate and aging population. While this trend is by no means insignificant, it has not been considered in this analysis, as the focus is climate change-related impacts.

¹ IPCC: Intergovernmental Panel on Climate Change; SSP: Shared Socioeconomic Pathways

² Sekisui House and 342 consolidated subsidiaries (as of January 31, 2024)

Disclosure in Line with Task Force on Climate-related Financial Disclosures (TCFD) Recommendations

Table 2. Major Risks, Potential Financial Impacts, and Responses

Transition risk: Introduction of carbon pricing			
Impact	Carbon pricing has been widely adopted around the world. In Japan, the government is considering the introduction of a carbon tax, and it may be introduced relatively soon.	Financial impact	Assumed time
		High	Medium-term
Response	The Group as a whole and its suppliers have a long way to go in order to decarbonize their business activities in the medium term, and if a carbon tax or emissions trading unit price of around 10,000 yen/t-CO ₂ is imposed, the impact will be significant. We have already started a variety of initiatives throughout the value chain, including promotion of RE100, energy conservation in offices and production facilities, and reduction of CO ₂ emissions in the building materials manufacturing stage through collaborative efforts such as questionnaires and seminars with suppliers, and we intend to reduce this impact as quickly as possible.		
Transition risk: Rising housing prices and a shrinking market			
Impact	In the long term, the new construction market itself may shrink as housing prices soar due to the need to comply with stricter regulations required for carbon neutrality, and as the number of houses with poor energy efficiency and seismic resistance decreases, and more high-quality housing stock is being circulated in the market.	Financial impact	Assumed time
		High	Long-term
Response	Because our efforts are ahead of the curve, the impact on regulatory tightening in the short to medium term is expected to be small. However, in response to further regulatory tightening in the long term, we will need to work systematically on the development of cost-competitive decarbonized housing. In addition, we intend to strengthen our supplied housing business, in preparation for the contraction of the new construction market.		
Transition risk: Decline in rental business revenues due to market changes			
Impact	Managed properties that do not have sufficient decarbonization performance will lose competitiveness, leading to lower occupancy rates and rents.	Financial impact	Assumed time
		High	Long-term
Response	We will strive to increase the ratio of ZEH units in managed properties and promote decarbonization remodeling of non-ZEH units in order to maintain and increase the value of rental housing that appeals to renters.		
Transition risk: Decline in rental business revenues from managed properties with higher disaster risk			
Impact	Managed properties in disaster-prone areas will have lower occupancy rates and rents due to the increase in climate change-related disasters (floods due to rivers overflowing, landslides, etc.).	Financial impact	Assumed time
		High	Long-term
Response	We recognize this as an issue, and are continuing to study this issue by checking government hazard maps and understanding the hazards in areas where construction is planned.		
Transition risk: Costs required to decarbonize business activities			
Impact	In order to decarbonize our business activities, various costs will be incurred, such as converting business locations to ZEB, electrifying Company vehicles, and making production facilities energy-efficient.	Financial impact	Assumed time
		Low	Medium-term
Response	The Company is systematically promoting decarbonization in all of its business activities, and the risk of incurring major costs that would affect its business is low at this point.		

Damage to Company-owned assets due to weather-related disasters

The Sekisui House Group conducts risk management based on the following assumptions about rain or wind storms of a severity it has never yet experienced.

Physical risk: Damage to Company-owned assets due to weather-related disasters			
Impact	Nationwide weather disasters could damage assets owned by the Group (factories, office buildings and other business locations, production facilities, vehicles, etc.), making it impossible to continue operations and incurring significant repair or replacement costs.	Financial impact	Assumed time
		High	Medium-term
Response	The Sekisui House Group operates throughout Japan, with the exception of Okinawa Prefecture, and has already established a system that allows its business to continue through support from undamaged areas in the event of a disaster in some areas, including the head office functions. Such business continuity planning (BCP) measures are properly managed by the Risk Management Committee and updated as necessary. The amount of damage to the five factories in Japan was calculated based on the assumed inundation depths using river flooding hazard maps or internal flooding simulations, and it was found that for the four of these factories other than the Hyogo Factory, there is the potential to suffer inundation damage. A more detailed analysis based on the IPCC RCP 8.5 scenario was conducted for the Kanto Factory, which is expected to suffer the most damage, and the expected damage has been confirmed to be within the coverage of the insurance policy that is already in place. Assuming, however, an increase in the severity of natural disasters in the future and the simultaneous occurrence of large-scale disasters throughout Japan, our business is expected to suffer extensive damage, and we will continue to examine ways to strengthen our disaster resilience.		
Physical risk: Extension of construction periods due to climate change			
Impact	The frequency of supply chain damage and difficulties in obtaining construction materials will increase due to the intensification of disasters associated with climate change, as well as the increase in extremely hot days and heavy snowfalls. In addition, construction sites may be affected for the same reasons, and administrative costs may increase due to longer construction periods.	Financial impact	Assumed time
		Not calculated	Medium-term
Response	Although the Company already has measures in place to decentralize the supply chain in anticipation of damage to suppliers' factories and transportation routes, and to prevent heat stroke at construction sites, continued consideration is needed in anticipation of an increase in the scale and frequency of natural disasters.		

Other risks

Before purchasing land for resale, we require the use of hazard maps to conduct an analysis of possible risks. When constructing large buildings, such as condominiums, we also refer to hazard maps during planning to minimize the risk of damage. However, the impact of climate change is growing year by year, and the scale and frequency of natural disasters may increase, so the Sekisui House Group will continue to study how to deal with related risks.

Disclosure in Line with Task Force on Climate-related Financial Disclosures (TCFD) Recommendations

Table 3. Major Opportunities, Potential Financial Impacts, and Responses

Major opportunity: Increase in ZEH/ZEB orders			
		Financial impact	Assumed time
Impact	The Japanese government has set goals that include reducing greenhouse gas emissions in the residential sector by 66% compared with the FY2013 baseline by 2030, positioning ZEH and ZEB as key measures. In addition, demand for ZEH and ZEB is expected to increase in the future, as consumers become more ethically conscious and businesses further decarbonize. Moreover, we anticipate increasing demand for ZEH specification products overseas.	High	Medium-term
Response	The ratio of our detached house ZEH exceeds 90%, and ZEH is already a standard specification. Currently, we are also beginning to actively promote ZEH in rental housing and condominiums. We will expand ZEH and ZEB orders for the entire Group by leveraging our track record of receiving the largest number of ZEH orders in Japan.		
Major opportunity: Increase in rental business revenues by converting managed rental properties to ZEH			
		Financial impact	Assumed time
Impact	The Japanese government intends to require ZEH-level energy efficiency in all new buildings constructed in and after 2030. In addition, ZEH conversion of rental housing will eventually become more common, so the need for ZEH rental housing could increase dramatically as consumers become more ethically conscious.	High	Medium-term
Response	Since completing Japan's first rental housing that meets the ZEH standard for all units in 2018, we have been working to promote ZEH units that can appeal to residents. The Company has already received orders for more than 42,000 units and is preparing for a future expansion of demand for rental ZEH units, especially among ethically conscious consumers.		
Major opportunity: Increase in orders for decarbonization remodeling			
		Financial impact	Assumed time
Impact	The government's goal of reducing greenhouse gas emissions in the residential sector by 66% compared with 2013 by 2030 requires energy-saving renovations to housing stock. For this reason, various reform support policies are being implemented and orders for decarbonization remodeling are proceeding well.	High	Medium-term
Response	Orders for insulation retrofitting, power generation and storage cells are on the rise as a result of customer requests and remodeling proposals. In particular, <i>Idocoro Dan-netsu</i> , a partial insulation improvement concept centered on areas where residents spend the most time, has been well received because of the small burden of the cost and construction period for the customer. These remodeling proposals also highlight enhancing disaster resilience. We will continue to promote remodeling proposals that are realistically feasible for widespread use.		
Major opportunity: Reduction of RE100 promotion costs			
		Financial impact	Assumed time
Impact	Achievement of RE100 is essential to the realization of a decarbonized society. However, procuring renewable energy usually entails significant costs.	Low	Medium-term
Response	Through the Sekisui House Owner Denki initiative, renewable energy power is procured at almost no cost. Considering the possibility of the electrification of energy used in business in the future, such as a shift to EVs for Company vehicles, the cost of electricity may increase with conventional procurement methods. The cost reductions achieved through the Sekisui House Owner Denki initiative can be utilized to secure funding for other purposes, and can therefore be regarded as an opportunity.		

Major opportunity: Decarbonization of the production stage			
		Financial impact	Assumed time
Impact	In decarbonizing the entire value chain, efforts by suppliers to reduce emissions at the construction material manufacturing stage are fraught with difficulties.	Low	Medium-term
Response	Since a high percentage of our construction materials, such as exterior walls and frameworks, is produced in-house, it is easier to reduce greenhouse gas emissions from material production through planned technological development and capital investment than when relying more on external procurement, thus reducing the impact of carbon taxes. The cost reductions are considered as an opportunity, because they can be utilized to secure funding for other purposes.		
Major opportunity: Increase in infrastructure construction and waste disposal due to more frequent and severe weather-related disasters			
		Financial impact	Assumed time
Impact	As sudden heavy rains are expected to occur more frequently, demand for infrastructure-related construction related to stream and flood control, including the replacement and maintenance of aging existing infrastructure, will increase. In addition, demand for proper waste disposal following damage caused by greater than expected rainfall will increase.	Low	Long-term
Response	To meet increased demand for infrastructure development related to disaster countermeasures, we will build up expertise in extending service life through preventive and protective infrastructure renewal and allocate personnel as needed in preparation for receiving orders. We will invest in technological development and the introduction of new technologies to increase competitiveness and differentiation by such means as offering waste disposal with high recycling rates for buildings, household goods and other waste materials arising from wind and water damage.		

Confirmation of the resilience of the Sekisui House Group's existing strategies

The review found that the Sekisui House Group's strategy has already begun to address decarbonization and extreme weather events in all of its business activities, and it has been determined that no fatal impacts are currently apparent, either in terms of transition risk to a decarbonized society or physical risk due to climate change.

3. Risk Management

As part of the Group-wide risk management process, the Group conducts assessments to determine climate change-related risks and opportunities based on the TCFD recommendations. Risks and opportunities are identified for the entire Group, led by the principal department of each business, and the results are aggregated by the Environmental Subcommittee, which conducts a financial impact assessment. Major risks and opportunities that are identified based on this process are reviewed by the ESG Promotion Committee, a consultative body to the Board of Directors, before being reported to the Board of Directors, which considers risk mitigation, transfer, acceptance and control, as required. Furthermore, the results are shared by the Risk Management Committee, and reviewed and managed within the Group's overall risk management system.

→ P.231 Our risk management system

Disclosure in Line with Task Force on Climate-related Financial Disclosures (TCFD) Recommendations

4. Metrics and Targets

In 2008, the Group declared its Vision 2050, which aims to achieve zero CO₂ emissions from housing by 2050. The Group has already begun various initiatives to achieve a zero CO₂ emission balance in all business activities, including the use of renewable energy.

As a milestone toward achieving this goal, by 2030, compared with FY2013 levels, we aim to reduce our own CO₂ emissions in Scope 1¹ (direct emissions: fuels consumed for factories, offices, vehicles, etc.) and Scope 2¹ (indirect emissions: energy consumed by the Company, such as electricity) by 75%, and those in Scope 3, Category 11¹ (use of sold products) by 55%. These targets have been approved by the Science Based Targets initiative as in line with a 1.5°C trajectory. We have revised the targets for Scope 1 and Scope 2 reductions upward to a more ambitious goal for FY2030 after meeting the 50% reduction target in FY2022.

In addition, as an RE100 member company, we will convert to renewable sources of electricity for our business operations, adopting targets of 50% by

2030 and 100% by 2040. Various concrete measures have been initiated to achieve these targets, and progress is currently on track, with the 2040 target expected to be achieved roughly 10 years ahead of schedule.

¹ Classification of CO₂ emissions according to the categories of the Greenhouse Gas Protocol.



Future issues for the Sekisui House Group

As indicated thus far, the Group has already taken measures to address the anticipated risks from climate change and does not expect any significant financial burden. However, in order to ensure that the Group continues to implement decarbonization management as it has in the past, we will continue to monitor the major risk factors with significant financial impact that have been identified in this analysis and strengthen the necessary initiatives while further quantifying risks and improving the accuracy of the analysis. As for challenges going forward, we believe that the mission of the Group is to contribute to the transition to a sustainable society by further quantifying and improving the accuracy of risks related to newly consolidated Group companies.

In addition, climate change involves many uncertainties, so we need to gather a broad range of intelligence from outside the Group. In order for the Group to demonstrate leadership in the international community, we will further focus on stakeholder engagement through participation in various domestic and international initiatives, including the United Nations Framework Convention on Climate Change (UNFCCC) and the Global Alliance for Buildings and Construction (GlobalABC), of which we are the only member in the Japanese private sector.

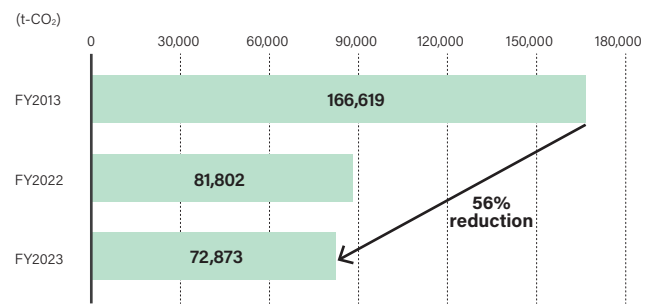
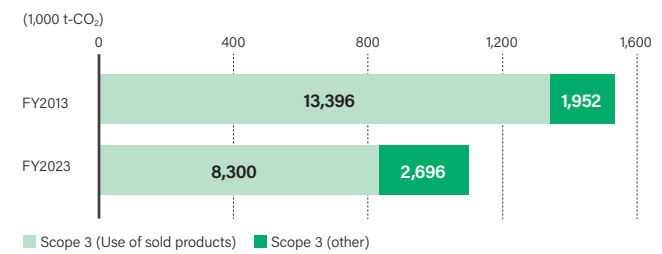


Figure 1. The Sekisui House Group's Scope 1 and 2 CO₂ Emissions Reduction



Note: Due to an expansion in the boundary of data, the figures presented here differ from those disclosed in Value Report 2023.

Figure 2. The Sekisui House Group's Scope 3 CO₂ Emissions Reduction

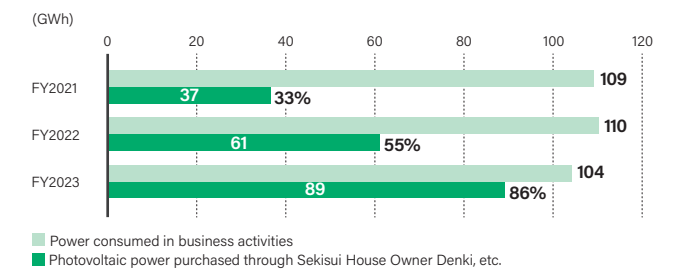


Figure 3. RE100 Achievement Rate

Disclosure in Line with the Taskforce on Nature-related Financial Disclosures (TNFD) Recommended Disclosures

1. Governance

The Group has established the ESG Promotion Committee as a consultative body to the Board of Directors to determine and implement action policies while confirming that all ESG management initiatives are reasonable and in line with societal expectations. The committee meets once every three months. Along with climate change, addressing biodiversity and natural capital is one of the key issues discussed by the committee. The committee evaluates the appropriateness of action policies and progress, and reports important matters to the Board of Directors. Additionally, the Sekisui House Group Human Rights Policy, the CSR Procurement Guidelines and the Wood Procurement Guidelines all establish policies and standards aimed at preventing human rights violations. By following these policies and guidelines, we strive to have zero biodiversity-related and natural resource-related human rights violations in our business activities and procurement. In particular, the Wood Procurement Guidelines stipulate that free, prior, and informed consent (FPIC) be followed along the entire supply chain for all indigenous peoples near procurement sites. Additionally, we have established wood procurement policies that ensure we do not procure wood from conflict areas.

2. Strategy

As with climate change, regarding biodiversity and natural capital, the Group works to clarify the appropriateness of its strategy and issues therein by anticipating various situations that may occur in order to make steady progress toward a world where people live in harmony with nature.

The Company considers risks and opportunities related to nature as well as assesses its impact and dependency based on the LEAP approach in the TNFD (Figure 1). First, risks and opportunities related to the environment in the housing business are identified. Then, the Company organizes initiatives and evaluates the priority level of responses to these risks and opportunities. We conducted an advanced analysis of wood procurement in the material procurement process, which is one of the four stages of housing operations (material procurement, manufacturing and processing, construction, and demolition) and has a high impact and dependency on nature, using big data on biodiversity possessed by Think Nature Inc.¹ The Company has identified the interface with nature that bear particular importance and evaluated impacts and dependencies.

¹ A dataset covering over 150 natural capital and ecosystem services, including the biodiversity importance based on distribution data of over 300,000 different terrestrial and marine species.

1-1 Locating and evaluating impacts and dependencies of the housing business on the environment

In Value Report 2023, we located potential impacts and dependencies using ENCORE³ and other such methods on procurement data² for the housing business (detached houses and rental housing). The results (Figure2) of this were displayed in a heat map. Specifically, this analysis divided housing business processes into the four phases of material procurement, manufacturing and processing, construction, and demolition. For each phase, we located impacts on nature, including the conversion of land, freshwater and ocean areas as well as atmospheric, water, soil and waste pollution. We also analyzed dependencies on ecosystem services, such as water supply, natural resources, soil quality regulation,

flood mitigation and global climate regulation. From these analyses, we found that our material procurement process is potentially dependent on many ecosystem services. We also confirmed the potential impacts on nature from lumber harvested and mineral resource mining, including the conversion of land, fresh water and ocean areas as well as atmospheric, water, soil and waste pollution.

² For wood, primary producing countries are inferred from procurement data of secondary suppliers and beyond. For non-wood material, these countries are inferred from general statistical procurement data based on procurement amount and monetary value.

³ ENCORE Partners (Global Canopy, UNEP FI, and UNEP-WCMC). ENCORE: Exploring Natural Capital Opportunities, Risks and Exposure. [Online], [1/2023 of the version downloaded], Cambridge, UK: the ENCORE Partners. Available at: <https://encorenature.org>. DOI: <https://doi.org/10.34892/dz3x-y059>. ENCORE is an analytical tool on the TNFD Tools Catalogue. By helping users better visualize and understand the impact of environmental change on the economy, ENCORE can be used to understand how common business processes impact and depend on nature.

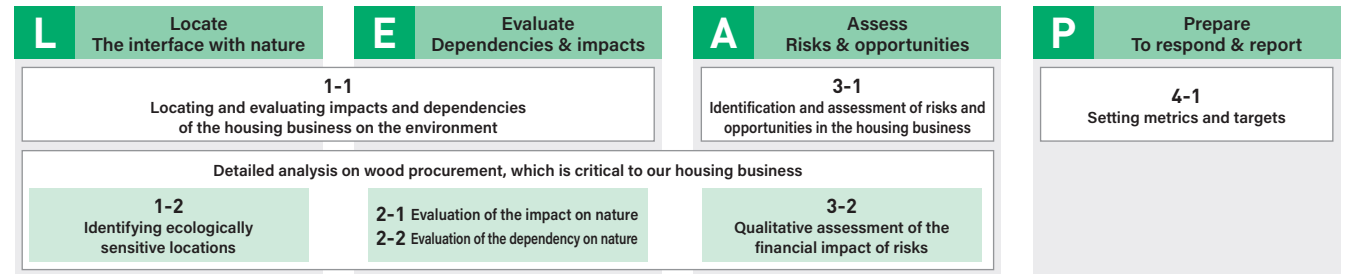


Figure 1. The Company's processes in line with the TNFD's LEAP approach

Business	Phase	Impacts											Dependencies							
		Land conversion			Direct use		Climate change	Pollution			Invasive alien species, other	Provisioning services		Regulation services						
		Land	Fresh water	Ocean	Water	Other resources	GHG	Air	Water	Soil	Solid waste	Other	Water supply	Other natural resources	Water flow regulation	Soil quality regulation	Pollination/ Pest control	Flood mitigation	Climate regulation	
Housing business	Material procurement																			
	Manufacturing and processing																			
	Construction																			
	Demolition																			

Figure 2. Measurement of potential impacts and dependencies on natural capital in the housing business

Note: Potential impacts and dependencies on natural capital in the housing business (prepared based on results of analyses using ENCORE and other tools; darker orange indicates a greater degree of potential impact/dependency). Since material procurement in each phase involves multiple raw materials and procurement processes, care was taken to avoid underestimating impact and dependency by adopting data pertaining to items with greater impact or dependency.

Disclosure in Line with the Taskforce on Nature-related Financial Disclosures (TNFD) Recommended Disclosures

1-2 Identifying ecologically sensitive locations (Locate)

To start, we evaluated the biodiversity importance² and the biodiversity integrity (hereafter referred to simply as “importance” and “integrity” respectively) of natural forests (Figures 3 and 4), focusing on the top 11 countries¹ that accounted for 90% of our wood procurement in FY2022. In artificial forests, we only evaluated the importance (Figure 5). The distribution of the evaluation results for the 11 countries is shown in Figures 6 and 7. Our findings revealed that, out of the 11 countries evaluated, the highest conservation priority areas for natural forests are Indonesia and Malaysia, and the highest conservation priority areas for artificial forests are Indonesia, Malaysia, Japan and Vietnam. Understanding the impact in these areas is therefore of the utmost importance.⁴

1 Approximately 90% of the Company's total procurement volume comes from these top 11 countries.
 2 An index showing the importance of biodiversity for each location calculated based on the abundance and rarity of vertebrate animals and tree species. In Figures 3 and 5, the colored areas represent natural and artificial forests in the top 11 countries we procure wood from, respectively.
 3 An index showing to what extent pristine natural conditions are being lost, calculated based on habitat and natural forest distribution data. In Figure 4, the colored areas represent the natural forests in the top 11 countries we procure wood from, respectively.
 4 Scores for natural and artificial forests were calculated using meshes (or grids), with natural forests shown in Figures 3 and 4, and artificial forests shown in Figure 5. Values representing numerical means for natural and artificial forests are displayed in Figure 6 and Figure 7, respectively. For natural forests, high conservation priority was assigned to the top 30% in biodiversity importance and those above average in integrity. For artificial forests, high conservation priority was assigned to the top 30% in importance.

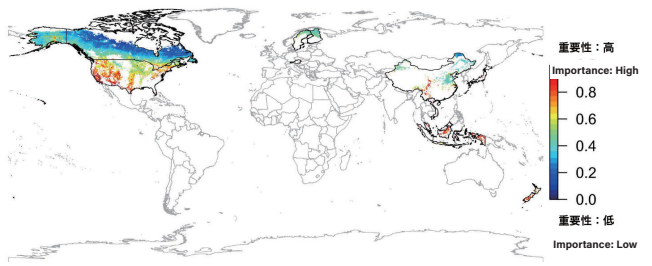


Figure 3. Biodiversity Importance – Natural Forests

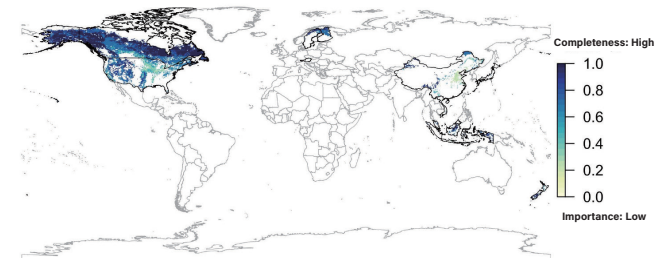


Figure 4. Biodiversity Integrity – Natural Forests

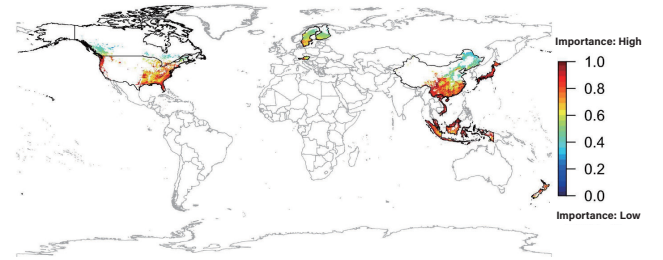


Figure 5. Biodiversity Importance – Artificial Forests

For natural forests, sites with high importance (red areas in the figure) and high integrity (dark indigo areas in the figure) are deemed as having high conservation priority. For artificial forests, sites with high importance (red areas in the figure) are considered a high conservation priority. The 11 countries we procure wood from are colored on both maps.

Note: The biodiversity importance score is a relative representation of the importance of each location from 0.0 to 1.0, with 1.0 being an area of land with utmost importance to the world's natural environment and 0.0 being an area of land that has lost all importance as a natural environment.

Note: The biodiversity integrity score is a relative representation of the completeness of each location from 0.0 to 1.0, with 1.0 being an area of land in a completely pristine condition and 0.0 being an area of land that has been completely destroyed.

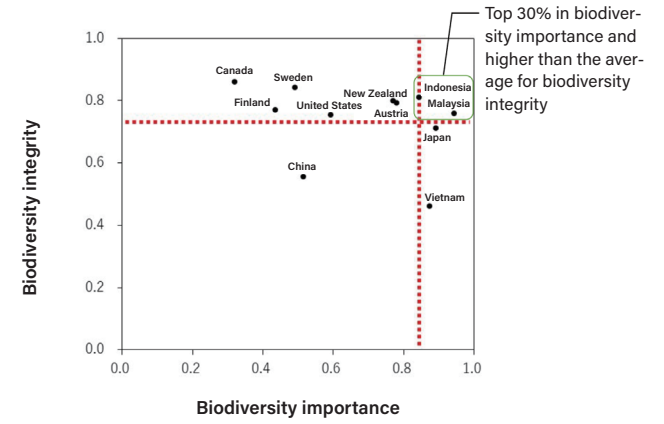


Figure 6. Importance and Integrity Evaluation Results of 11 Countries – Natural Forests

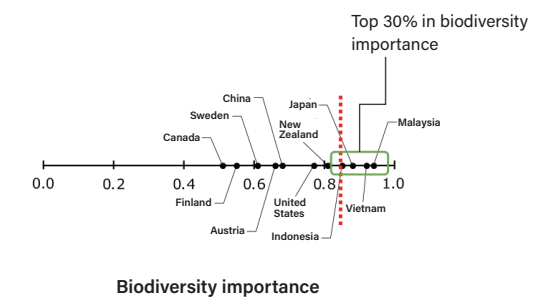


Figure 7. Importance Evaluation Result of 11 Countries – Artificial Forests

Disclosure in Line with the Taskforce on Nature-related Financial Disclosures (TNFD) Recommended Disclosures

2-1 Evaluation of the impact of wood procurement on nature (Evaluate)

We analyzed² the magnitude and impact distribution of the four forestry-related factors as evaluated by ENCORE—terrestrial ecosystem use; GHG emissions, water pollutants and soil pollutants—for the top 11 countries from which we procure wood. We identified terrestrial ecosystem use as having a very significant impact, affecting the countries identified as being sensitive from a biodiversity perspective in the previous section (Indonesia, Malaysia, Japan and Vietnam). In particular, when considering procurement volume distribution, we found relatively large impacts on artificial forests throughout Malaysia; natural forests in Kalimantan, Indonesia; artificial forests in central Java, Indonesia; and artificial forests in the Chugoku and Shikoku regions of Japan as well as on the Pacific side of Honshu south of the Kanto region. We recognize that wood production in these regions might be a threat to the regional terrestrial ecosystems.

1 Refers to land conversion of terrestrial ecosystems for purposes such as farming, forestry or urban development.
2 The magnitude of terrestrial ecosystem use was calculated by multiplying geographical data on the degree of threat to the terrestrial ecosystem with the volume of procurement distribution. The degree of threat to the terrestrial ecosystem was measured by scoring the degree of concentration of rare species threatened by land use and development. It should be noted that land use and development are done for reasons other than wood production. Therefore, there could be other factors at play apart from wood production in areas where the degree of threat to the terrestrial ecosystem is high.

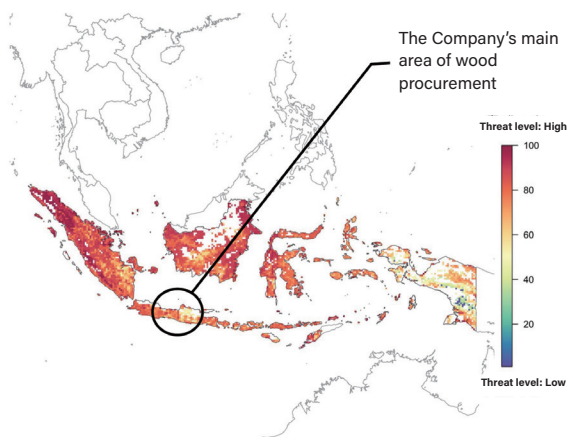


Figure 8. Example Analysis of Impacts on Terrestrial Ecosystems (Artificial Forest Areas in Indonesia)

Figure 8) Artificial forests in the central part of Java comprise the Company's main wood procurement area in Indonesia. The impact on the terrestrial ecosystem in this procurement area is relatively low compared with other areas in Indonesia. However, Indonesia's importance to biodiversity is high, having a large nationwide impact on the terrestrial ecosystems. Therefore, it is vital to properly select and manage sustainable procurement practices.

Note: The threat to terrestrial ecosystems score is a relative representation of threat levels of each location from 1 to 100, with 100 being an area with the highest level of global threat and 1 being an area with the lowest level of global threat.

2-2 Evaluation of the dependency of wood procurement on nature (Evaluate)

To identify areas lacking in ecosystem services and that are vulnerable to dependencies on nature, we analyzed and scored forestry-dependent ecosystem services, as identified by ENCORE, for each of the top 11 countries from which we procure wood. Additionally, the status of ecosystem services within each country was analyzed. We found areas in the following regions to be lacking in functions that wood procurement activities depend on. Ground stabilization and erosion control in the Chugoku and Shikoku regions of Japan, pest control functions in the central and southern parts of Sweden and in all natural forests in the United States as well as artificial forests in its northern and western regions, and flood protection functions in the northern parts of Austria.

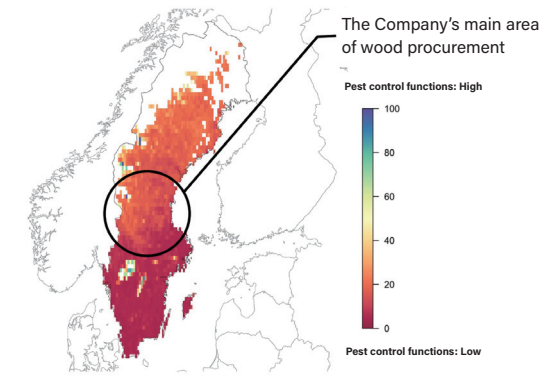


Figure 9. Example Analysis of Pest Control Functions (Artificial Forest Areas in Sweden)

Figure 9) In Sweden, the Company's main procurement sites are in the central region. Pest control functions in Sweden are especially weak in the southern areas, and serious damage caused by harmful insects has been done in those regions. However, due to factors such as climate change, it is entirely possible that damage caused by harmful insects will not be limited to the south but will extend to the central areas of the country.

Note: The pest control function score is a relative representation of pest control capabilities of each location from 1 to 100, with 100 being an area with the degree of pest invasion being the smallest and pest control functions being the highest globally and 1 being an area with the degree of pest invasion being the largest and pest control functions being the lowest globally.

Disclosure in Line with the Taskforce on Nature-related Financial Disclosures (TNFD) Recommended Disclosures

3-1 Identification and assessment of risks and opportunities in the housing business (Assess)

Firstly, we organized the nature-related risks to the Company, based on impacts and dependencies on nature throughout the value chain, into the categories of physical risks and transition risks. In terms of opportunities, we examined opportunities that contribute to risk avoidance and mitigation as well as opportunities based on future market information.¹

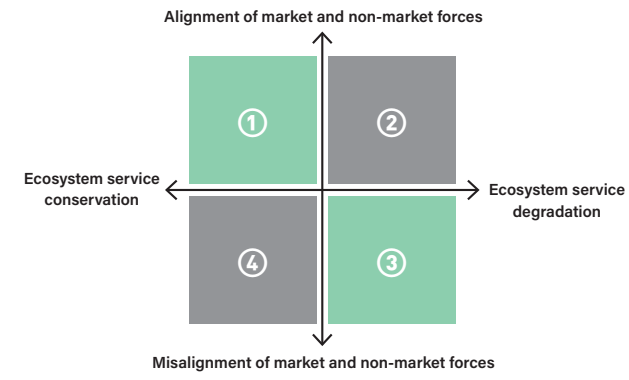
Moreover, we conducted nature-related scenario analyses and evaluated the priority of risks and opportunities based on such analyses. We constructed exploratory scenarios² for the year 2040 based on perspectives of the state of nature in terms of the condition of biodiversity and rise in temperatures (horizontal axis) as well as global trends in technology, society, regulations and politics (vertical axis). In the four-quadrant scenario consisting of two uncertainties as recommended by the TNFD, we titled Scenario 1 as "A World of Sustainable Systems" and Scenario 3 as "A World Headed for Ruin." Next, based on the scenarios we created, we held internal workshops for relevant employees and discussed the nature-related risks and opportunities the Company could face under each scenario.

The scenario analysis identified a wide range of opportunities and risks. For risks, these included physical risks such as the destabilization of wood procurement and transition risks such as loss of market share due to a change in consumer environmental preferences. Such opportunities as risk reduction through effective resource utilization as well as possible business expansion that has a positive impact on nature (including agricultural businesses and urban greening) were also identified.

Tables 1 and 2 show risks and opportunities that have a high likelihood of occurring and may have a significant impact on the Company. Moving forward, we plan to discuss those risks and opportunities internally to properly refine impacts and likelihoods and to consider responses accordingly.

1 Information on business areas highly relevant to the Group is collected in "The Future of Nature and Business" report issued by the World Economic Forum.

2 In constructing the scenarios, we used WWF's Living Planet Report 2022 and IPCC's Sixth Assessment Report (2021) as references to set fixed conditions regarding the state of nature in 2040. In Scenario 1, with the horizontal axis representing the state of nature, the ecosystem is gradually recovering and the global environment is projected to improve due to achievement of the 1.5°C scenario. The vertical axis represents market and non-market principles moving in the same direction. That is to say, it supposes a world where society, laws, regulations and the economy are all moving in a way that is beneficial for the environment. Scenario 3, on the other hand, envisions a world where ecosystems degrade and climate change-induced rises in temperature continue. The vertical axis shows market and non-market principles running counter to each other and society, laws, regulations and the economy moving in a way that is detrimental or has no impact on the global environment.



Note: Created based on the TNFD v1.0 "Guidance on scenario analysis"

Figure 10. Four-quadrant Scenario Consisting of Two Uncertainties as Recommended by the TNFD

Table 1. Nature-related Risks of the Company

Risk type	Risk	Scenario with possible occurrence	
		Scenario 1	Scenario 3
Physical risk	Destabilization of wood procurement	●	●
	Destabilization of mineral resource procurement	●	●
	Destabilization of water resource procurement	●	●
	Natural disaster-related business disruptions	●	●
Transition risk	Restrictions on mineral resource mining	●	●
	Increase in external demand for technology development and capital investment in new technologies aimed at reducing the environmental impact across the entire value chain	●	●
	Loss of market share due to change in consumer environmental preferences	●	●
	Loss of stakeholder trust due to delays in addressing environmental concerns in areas such as: product development, procurement, production processes, sales, etc.	●	

Table 2. Nature-related Opportunities of the Company

Opportunity type	Opportunity	Scenario with possible occurrence	
		Scenario 1	Scenario 3
Opportunities related to business and sustainability performance	Increase in demand for housing that is low-cost and has a small environmental impact as achieved through the effective use of resources	●	●
	Increase in demand for housing that is clean, eco-friendly and adheres to sustainable material procurement	●	
	Increase in demand for low-risk wood procurement	●	
	Increase in demand for resilient housing	●	●
	Increase in demand for highly energy efficient, eco-friendly houses	●	
	Increase in demand for urban and residential greening as well as agricultural businesses	●	●
	Increase in demand for circular economy businesses	●	

Note: Scenario 1: A World of Sustainable Systems; Scenario 3: A World Headed for Ruin

Disclosure in Line with the Taskforce on Nature-related Financial Disclosures (TNFD) Recommended Disclosures

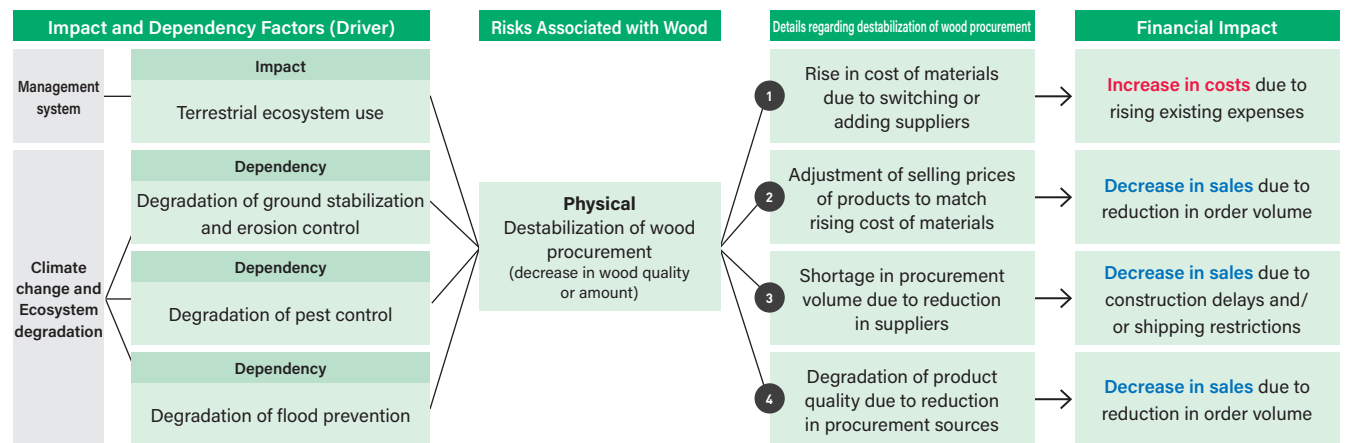


Figure 11. Qualitative Financial Impact Assessment on Physical Risks Associated with Wood Procurement

3-2 Qualitative assessment of the financial impact of wood procurement-related risks (Assess)

The qualitative financial impact of wood, an important material, was evaluated in terms of the physical risk "destabilization of wood procurement" and organized as shown in Figure 11. We plan to analyze the details regarding the evaluation of these risks and conduct a quantitative impact analysis.

3. Risk and Impact Management

As part of the Group-wide risk management process, the Group conducts assessments to determine nature-related risks and opportunities as well as impact and dependency evaluations based on the TNFD's LEAP approach. First, activities that have a potential nature-related impact or dependency throughout the entire organized value chain are identified. Then, nature-related risks and opportunities are identified from the results of the scenario analysis.

Using detailed procurement information on wood, we identified geographic points of interface with ecologically sensitive locations. After identifying impacts and dependencies, we evaluated importance based on qualitative and quantitative analyses.

Furthermore, starting with suppliers, we will continue to strengthen engagement with important stakeholders of our business activities.

The Company is currently implementing initiatives aimed at reducing risks and creating opportunities, such as those listed below. We will continue to thoroughly consider and conduct new initiatives.

Risk mitigation: Sustainable wood procurement

Our FairWood procurement of wood and wood products gives due consideration to the forest environment and local communities in producing regions. Sekisui House established the 10 Wood Procurement Guidelines in 2007, which encompass not only legality, but also ecosystems in producing regions. In

October 2023, we established the Wood Procurement Policy as a fundamental policy to respond more effectively to recent social conditions and we have repositioned the 10 Wood Procurement Guidelines and revised them to better clarify the Company's stance on the material issue of Contributing to a Sustainable Society. We believe that sustainable procurement helps enhance the Company's resilience by promoting the efficient use of resources. Moving forward, we will carefully monitor information based on these guidelines, verify details individually, and work to reduce risks in procurement areas where we have identified impacts and dependencies.

Opportunity creation:

Measuring the biodiversity effects of the Gohon no Ki Project

In 2019, working with the Kubota Laboratory in the Faculty of Science of University of the Ryukyus and Think Nature Inc., we started joint research to analyze the effectiveness of quantitative assessments of biodiversity conservation from a macro perspective. The results showed that the Gohon no Ki Project can contribute to the restoration of biodiversity in urban environments facing severe ecosystem degradation, and that the effect can be further amplified by expanding the project in the future. Additionally, we conducted joint research on biodiversity and well-being with the Laboratory of Conservation Ecology in the Graduate School of Agriculture and Life Sciences / Faculty of Agriculture, The University of Tokyo. This research focused on examining the impact that a green garden rich in biodiversity has on people's health and happiness. The Gohon no Ki Project contributes to biodiversity, comfortable living, and creating brand value for the Company. In this way, we will actively explore new areas, such as examining the social effects of nature-related initiatives.



Disclosure in Line with the Taskforce on Nature-related Financial Disclosures (TNFD) Recommended Disclosures

4. Metrics and Targets

In its Sustainability Vision 2050¹ plan, the Group has set the goal, as a challenge for 2050, of maximizing ecosystem networks through business operations. We aim not only to achieve no net loss (to maintain the value of the ecosystem), but also to become nature positive (to enhance the value of the ecosystem through our business operations). With this commitment, we remain focused on the *Gohon no Ki* Project, a landscaping and greening project that considers the ecosystem, as well as FairWood sustainable wood procurement.

We are also promoting initiatives aimed at achieving a circular economy and decarbonizing all business activities, including those related to supply chains.

¹ Sustainability Vision 2050

4-1 Setting metrics and targets (Prepare)

The Group aims to properly evaluate and manage risks and opportunities that have large nature-related impacts and dependencies. To achieve this, we establish appropriate assessment metrics in line with recommendations from the TNFD and disclose actual results, mainly focused on the core disclosure metrics.

We will disclose all TNFD-established core disclosure metrics that are relevant and important to the Company. We have established assessment metrics from two perspectives: indicators that should be monitored to achieve our Sustainability Vision for 2050 and metrics that should be monitored to stabilize business foundations and ensure responsible business activities.

We have disclosed results for some of the core metrics that can be presently calculated (Table 3). Going forward, we will calculate results for core metrics that were not disclosed at this time as well as results for important assessment indicators, which we will include as additional disclosure metrics.

We also plan to establish and disclose target values for indicators using methodologies advocated for by the Science Based Targets (SBTs) for Nature and other like frameworks.

Indicators established by the Company in accordance with TNFD core indicators
Table 3. List of Company-established Indicators Corresponding to TNFD (v1.0)
Core Indicators for Impact and Dependency

Category	Overview of TNFD indicators	Company-established indicators	Company results (FY2023)	
Climate change	GHG emissions		Referencing Scope 1 to Scope 3	
Land/freshwater/ocean-use change	Total spatial footprint	Total area of manufacturing sites	965,740 m ²	
		Area of Nationally Certified Sustainability Managed Natural Sites	8,008 m ²	
Pollution/pollution removal	Pollutants released to soil split by type	Hazardous waste discharged into the environment (including soil) from direct operations	No incidence of discharge	
		Wastewater discharged	Wastewater volume and its concentration of pollutants Group-wide	1,088,000 m ³ Discharge location of wastewater → P.148. Pollutant concentration in wastewater from manufacturing and processing activities → P.150. There are no pollutants in wastewater from construction and demolition activities.
			Quantity of waste generated in manufacturing and processing, construction, demolition and office-related activities, with the amount in parentheses () representing hazardous waste generated	1,143,600 t (714 t)
Resource use/replenishment	Waste generation and disposal	Quantity and rate of recycling in manufacturing and processing, construction, demolition and office-related activities	1,127,700 t, 98.6%	
		Recycling rate in new construction	100%	
		Non-GHG air pollutants	Quantity of non-GHG air pollutants from manufacturing and processing activities NOx: 317 t VOC: 62.9 t SOx: 0.047 t	58,700 m ³ , 6,400 m ³
Invasive alien species and other	Placeholder indicator: measures against unintentional introduction of invasive alien species (IAS)	Quantity of high-risk natural commodities sourced from land/ocean/freshwater	237,061 m ³ (972% of total procurement amount) If a significant risk is discovered, we take appropriate actions in consultation with relevant departments and measures, such as reducing transactions based on supplier assessment results.	
		Quantity of wood procured from tree species other than those identified as endangered (S or A rank wood procurement amount)		
State of nature	Placeholder indicator: Ecosystem condition	Areas with large impacts and dependencies on wood production	See TNFD Disclosure "Strategy" section.	
		Increase in the diversity integration index for Japan's big three metropolitan areas (Tokyo, Nagoya and Osaka) as a result of the <i>Gohon no Ki</i> Project	See Evaluating effectiveness quantitatively using big data on biodiversity. → P.135	

Table 4. List of Company-established Indicators Corresponding to TNFD (v1.0)
Core Indicators for Risks and Opportunities as well as Response Policies

Category	TNFD indicators	Company-established indicators	Response policies
Risk	Assets/liabilities/revenue/expenses vulnerable to nature-related transition risks	Quantity and proportion of assets vulnerable to transition risks	Thorough evaluation of risks and opportunities and consideration regarding relevancy of disclosure.
		Quantity and proportion of assets vulnerable to physical risks	
Opportunity	Description and value of significant fines/penalties received/litigation action for the current fiscal year	Compliance with environmental laws and regulations	There were no significant violations of environmental laws and regulations, including those related to soil, groundwater or air pollution, in FY2023.
		Amount of capital expenditure, financing or investment deployed towards nature-related opportunities	
		Amount of opportunity-related investing	
	Increase and proportion of revenue from products and services producing demonstrable positive impacts on nature with a description of impacts	Increase in revenue from activities that have a positive impact on nature over a given period of time, and said positive impact	Thorough evaluation of risks and opportunities and consideration regarding relevancy of disclosure.

5. Looking Forward

We have conducted a multiple-perspective regional level analysis on wood, an important material for the Company, and have gained a deeper understanding of its impacts on nature and causes of dependencies.

Moving forward, we will continue to refine our analyses of nature-related impacts and dependencies in order to make better determinations regarding sustainable procurement. We will also conduct detailed analyses for the entire process of our housing business based on priority.

We will then closely examine risks and opportunities important to the Company and quantitatively analyze their impact, which will in turn lead to risk reduction and opportunity creation.

E Environmental Data

Commitment in the event of inconsistencies between trade association positions and company policy on climate change

As an industry leader, Sekisui House is positioned to play a leading role in decarbonization efforts. Industry trade associations have developed a good understanding of the Paris Agreement and the Japanese government's policy on climate change, and there is no inconsistency among industry activities in this area. In the event of inconsistencies between Sekisui House's policies and the climate change position of trade associations due to future changes in social conditions or other factors, or the event that the Company deems trade associations' stance on climate change insufficient, we will take the lead in engaging with industry actors to promote consistency with national policy.

Greenhouse Gas Emissions from Specific Activities

(FY)

Item	Unit	2021	2022	2023
Flaring emissions	t	0	0	0
Methane (CH ₄) emissions		0	0	0
Cement production GHG emissions		0	0	0

Carbon Intensity

Scope 1 and Scope 2 Emissions per Unit of Net Sales

(FY)

	Unit	2020	2021	2022
Yen	t/billion yen	55.17	33.98	27.93
USD	t/million USD	5.76	3.92	3.64

Power Generation by Energy Type

Sekisui House's factories and other facilities have installed photovoltaic and other alternative systems to generate power for use in-house.

(FY)

	Unit	2021	2022	2023
Photovoltaic power generation	MWh	30	79	194

Short term (up to 5 years) GHG emissions reduction targets

Sekisui House is working to decarbonize its businesses in line with the long-term target for 2030 of reducing the Scope 1 and 2 emissions from its business operations by 75% compared with the FY2013 levels. To achieve this target, we aim to reduce emissions by 4.4% each year, to this end advancing such initiatives as switching to renewable energy, moving to office buildings that meet ZEB specifications and replacing our fleet of Company vehicles with electric vehicles.

Harmony with the environment

Environmentally Symbiotic Housing is an initiative aimed at creating better housing through compliance with certification standards based on CASBEE for New Detached Houses, part of the Comprehensive Assessment System for Built Environment Efficiency (CASBEE) promoted by the Ministry of Land, Infrastructure, Transport and Tourism. Housing that combines global environmental conservation (low impact); affinity with the surrounding environment (high contact); and amenities and a healthy living environment can be certified as "in harmony with the environment" by the Institute for Built Environment and Carbon Neutral for SDGs.

In addition to adopting the concept of Environmentally Symbiotic Housing in product development, Sekisui House reflects this concept in its development of custom detached houses, condominiums and gardens, striving to provide good housing and attractive cityscapes through the "Common's" cityscape

evaluation system. In particular, we strive to reduce environmental impact through ZEH and promote harmony with the environment through the biodiversity-friendly *Gohon no ki* Project while creating comfortable living spaces. Through such tangible efforts to realize harmony with the environment, we aim to contribute to the emergence of a society committed to sustainability in housing and community development.

CASBEE has been adopted by numerous cities in Japan, particularly ordinance-designated large cities. Our CASBEE Accredited Professionals play a central role in promoting this initiative.

Office LED initiatives

The Sekisui House Group has been working to convert office lighting to LEDs since FY2018. In FY2023, at least 300 fluorescent lamps were replaced with LEDs, bringing the cumulative total to approximately 22,800.

As a result of this year's change, annual CO₂ emissions were reduced approximately 10 tonnes. The amount invested was ¥1.71 million, while costs were reduced by ¥690,000, for an expected recovery of costs in 2.5 years.

Use of lifecycle analysis during product and system design

For some time, we have calculated CO₂ emissions at every product lifecycle stage, from production to demolition, using the Life Cycle Assessment (LCA)¹ method. These calculations have shown that the residential stage is responsible for the largest portion of CO₂ emissions. For this reason, we have worked hard to promote eco-friendly homes that reduce emissions. To contribute to the realization of a decarbonized society, we recognize that the most important factor is reducing environmental impact at the residential stage and therefore continue striving to evolve our products.

In addition, Group companies specializing in remodeling existing products are working to reduce CO₂ emissions from the existing housing stock, making steady progress toward a decarbonized society by 2050.

¹ An approach for quantitatively determining the environmental impact of all processes from the extraction of raw materials required for a product or service through to use and disposal.

Environmental Data

Furthermore, by calculating CO₂ emissions for Scope 1, 2 and 3, we are monitoring CO₂ emissions not only during product manufacturing, but also upstream, including material procurement, and downstream, including during occupancy. We use this information to devise ways to reduce CO₂ emissions over the entire product lifecycle.

Data on GHG emissions, energy use and water use in the real estate portfolio

Sekisui House is working to decarbonize its real estate portfolio. The figures below are for the portion of real estate that the Company owns, or for which it owns the real estate trust beneficiary rights, that is office and commercial buildings in the leasing business for which energy use and other such data is available.

(FY)

	Unit	2021	2022	2023
Electricity consumption	MWh	28,698	36,491	28,322
Gas consumption	Thousand m ³	3,339	3,608	3,260
Water consumption	Thousand m ³	172	261	182
GHG emissions		13,840	19,599	14,367
Direct emissions	t-CO ₂	6,240	6,702	6,623
Indirect emissions		7,600	12,897	7,744
Floor area	m ²	231,402	293,133	235,650

Evidence and ratio of buildings with green certification in the real estate portfolio

Grand Front Osaka, in which Sekisui House owns a partial stake, has earned a five-star certification under the CASBEE¹ for Real Estate system. The green certification ratio of Sekisui House's real estate portfolio stands at 14.3% (based on number of properties).

¹ CASBEE is a tool developed by the Japan Sustainable Building Consortium to comprehensively assess the environmental performance of buildings, city blocks, and cities from various perspectives. Certification for CASBEE for Real Estate refers to buildings completed at least one year ago and is in accordance with CASBEE for Real Estate.

[☑ Evaluation of Grand Front Osaka under CASBEE for Real Estate \(Japanese only\)](#)

Green leases with tenants

Sekisui House has entered into green lease agreements with certain tenants of properties it owns, including those at Grand Front Osaka. From the perspectives of energy saving and environmental consideration, and sharing the principles of maintaining and improving property comfort and productivity, we and our tenants mutually cooperate in one another's environmental initiatives.

Building management systems that measure energy efficiency

Umeda Sky Building, which Sekisui House jointly owns, uses a building energy management system (BEMS). Managing the indoor temperature and humidity as well as the operation of heat source facilities, the system is used to, for example, optimize the operating hours of building equipment. The system is also able to measure electricity consumed by lighting separately from the rest of the building's power.

Evidence of urban brownfield redevelopment

Risk assessments of all properties based on a soil contamination checklist in accordance with Company standards are conducted when purchasing real estate. Should soil contamination risks be discovered, we consult with a specialized department, survey the soil and implement contamination counter-measures before selling the property to the customer. Sekisui House is developing *Miramachi*, a 27-hectare former factory site in Toyohashi City, Aichi Prefecture. This complex was developed with the aim of solving local issues and realizing a compact city.

In addition, for the redevelopment of former factory sites and similar sites, Group company Konoike Construction draws on its wealth of experience and technologies to plan and implement optimal measures, based on surveying results, for dealing with soil contamination, including that caused by leaks of hazardous substances, heavy metals and volatile organic compounds. For example, mercury is the main soil contaminant at cleaning facilities, where the equipment is, in principle, water washed. However, as removing mercury from minute soil particles is difficult with water washing alone, a solvent is used. In a single day, 150 m³ of contaminated soil can be treated, resulting in an average of 3,000 m² being treated a month.

Commitment regarding greenfield development

The Tama New Town Higashiyama subdivision (Hachioji, Tokyo) is an example of greenfield development. For this project, we are advancing environmental assessments with due consideration to the preservation and nurturing of the local ecosystem in line with the commitments of the Company's Urban Development Charter, which states that "We will preserve existing woodlands and transplant trees that cannot be kept in place" and "Even small saplings will be saved and planted in various locations around town."

Even when it comes to land within a greenfield, selections are made where residential land development is possible in line with Company standards, and we encourage urban development in accordance with the *Gohon no Ki* Project, taking the local ecosystem and environment into consideration.

Environmental Data

Urban renewal evidence

Built in 1956 as the head office of the Equitable Life Insurance Company, City Ridge, a project in Washington, D.C., is one of the masterpieces of Leon Chatelain, a former president of the American Institute of Architects. Since 1977, it has served as the headquarters of Fannie Mae (the Federal National Mortgage Association).

Since then, the Company has redeveloped the property while preserving this historic building, which is listed on the United States' National Register of Historic Places.

The project includes a 690-unit housing complex, a supermarket, a fitness club and a daycare center that serve local residents and provide a rich Streetscape in harmony with the historic community landscape. It is also the first property in Washington, D.C. to receive LEED¹ Gold certification, an environmental certification, for an entire community.

¹ LEED (Leadership in Energy and Environmental Design): An environmental certification system for buildings operated by the U.S. Green Building Council. Buildings are scored on multiple evaluation criteria, including energy efficiency, and ranked according to their score.

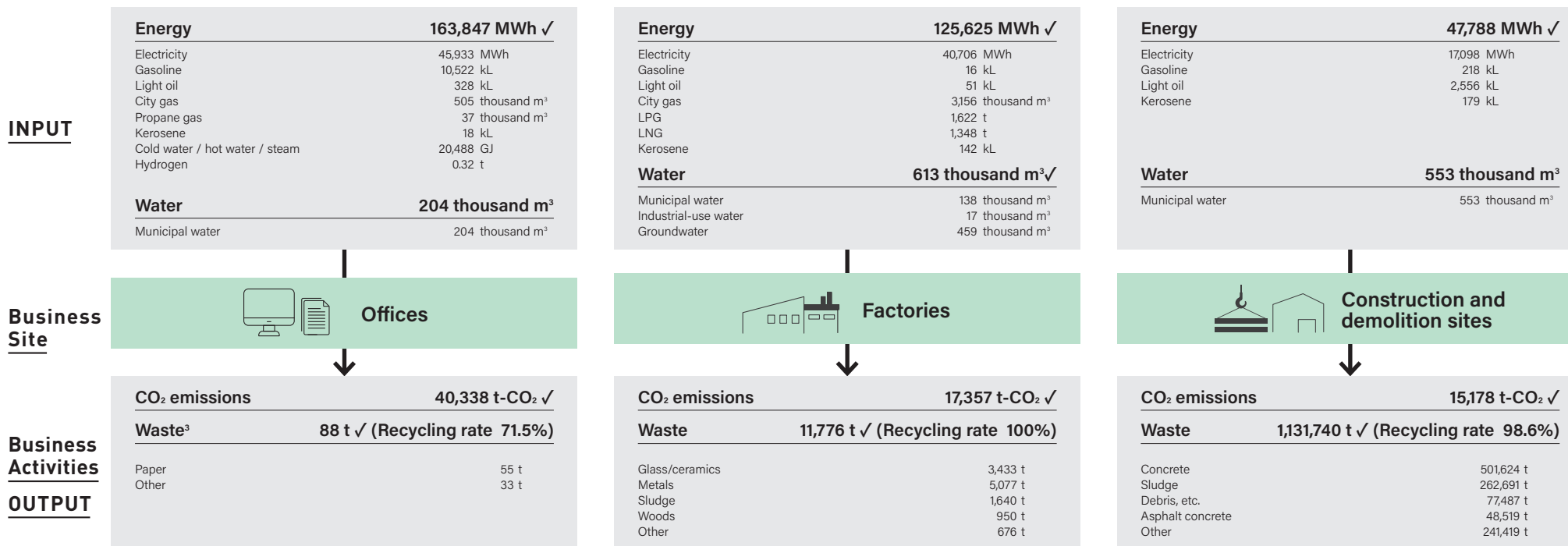


Preservation of historic buildings

Environmental Data

Material balance (monitoring of environmental impact of business sites in FY2023)¹

To make its environmental conservation activities as effective as possible, the Sekisui House Group monitors and reports on environmental impacts² at all business sites, including offices, factories, and construction and demolition sites both in Japan and overseas.



¹ Boundary: Sekisui House (non-consolidated) and its major consolidated subsidiaries in Japan and overseas (43 companies)
Period: FY2023 (February 2023 to January 2024), in principle. The figures include estimates in cases where final data was unavailable at the time of calculation.

² All figures for waste from business activities include valuables.

³ Emissions from the head office building

Indicators marked with ✓ have been assured by KPMG AZSA Sustainability Co., Ltd.

Environmental Data

Data Calculation Standards

Sites	Environmental metrics	Calculation method
Offices	Energy and CO ₂	<ul style="list-style-type: none"> Energy consumption and CO₂ emissions at Sekisui House (non-consolidated), 43 major domestic and overseas consolidated subsidiaries. Energy consumption (MWh) = [(Purchased electricity) + ∑ [(Fuel consumption) × (Calorific value per unit of fuel)] ÷ 3.6 (GJ/MWh)] + ∑ (Heat consumption ÷ 3.6 (GJ/MWh) (including the calculated performance of U.S. offices, which is partially estimated). Calorific values per unit of fuel refer to those specified in the Act on Promotion of Global Warming Countermeasures.¹ CO₂ emissions (t-CO₂) = [(Purchased electricity) × (CO₂ emission factor) + ∑ [(Fuel consumption) × (Fuel CO₂ emission factor)] + ∑ [(Heat consumption) × (Heat CO₂ emission factor)]]. Domestic CO₂ emission factors refer to those specified in the Act on Promotion of Global Warming Countermeasures¹ while overseas electricity CO₂ emission factors are based on the "Emissions Factors 2022" (IEA). Due to data input limitations, energy consumption and CO₂ emissions from light oil for construction vehicles used at construction and demolition sites by Sekisui House Construction are included in the "Offices" category.
	Water	<ul style="list-style-type: none"> Water withdrawal at Sekisui House Group offices.
	Waste	<ul style="list-style-type: none"> Amount of waste generated from the Sekisui House (non-consolidated) head office, including consolidated subsidiary offices in the same building.
Factories	Energy and CO ₂	<ul style="list-style-type: none"> Energy consumption and CO₂ emissions at Sekisui House's (non-consolidated) five domestic factories and the Ingleburn Manufacturing and Quality Control Centre (Australia). Energy consumption (MWh) = [(Purchased electricity) + ∑ [(Fuel consumption) × (Calorific value per unit of fuel)] ÷ 3.6 (GJ/MWh)]. Calorific values per unit of fuel refer to those specified in the Act on Promotion of Global Warming Countermeasures.¹ CO₂ emissions (t-CO₂) = [(Purchased electricity) × (CO₂ emission factor) + ∑ [(Fuel consumption) × (Fuel CO₂ emission factor)]]. CO₂ emission factors for electricity and fuel at sites in Japan refer to those specified in the Act on Promotion of Global Warming Countermeasures,¹ while electricity CO₂ emission factors at the Ingleburn Manufacturing and Quality Control Centre (Australia) refer to those specified in the "Emissions Factors 2022" (IEA).
	Water	<ul style="list-style-type: none"> Amount of water withdrawn from Sekisui House's (non-consolidated) five domestic factories.
	Waste	<ul style="list-style-type: none"> Amount of waste generated from Sekisui House's (non-consolidated) five domestic factories.
Construction and demolition sites	Energy and CO ₂	<ul style="list-style-type: none"> Electricity, fuel and other energy consumption and CO₂ emissions from the domestic construction and civil engineering work of Sekisui House (non-consolidated), Sekisui House Construction and Konoike Construction. Data for Konoike Construction includes demolition work associated with construction and civil engineering work and discrete demolition projects. Energy consumption (MWh) = [(Purchased electricity) + ∑ [(Fuel consumption) × (Calorific value per unit of fuel)] ÷ 3.6 (GJ/MWh)]. Calorific values per unit of fuel refer to those specified in the Act on Promotion of Global Warming Countermeasures.¹ Energy consumption and CO₂ emissions resulting from construction by Konoike Construction refer to those resulting from domestic construction and civil engineering work it supervises (excluding discrete demolition work) The fuel consumption by construction machinery is calculated from the number of operating days of construction machinery using the Japan Construction Machinery and Construction Association's loss table for construction machinery. Energy consumption and CO₂ emissions estimated for small-scale construction work at contracted amounts of less than ¥100 million are estimated. CO₂ emissions (t-CO₂) = [(Purchased electricity) × (CO₂ emission factor) + ∑ [(Fuel consumption) × (Fuel CO₂ emission factor)]]. CO₂ emission factors for electricity and fuel refer to those specified in the Act on Promotion of Global Warming Countermeasures.¹
	Water	<ul style="list-style-type: none"> Water withdrawal resulting from Sekisui House (non-consolidated), Sekisui House Construction's new construction and remodeling sites, and demolition sites of houses and other structures. Water withdrawal resulting from domestic construction and civil engineering work by Konoike Construction.
	Waste	<ul style="list-style-type: none"> Amount of waste generated from new construction, maintenance and remodeling sites as well as housing and building demolition sites by Sekisui House (non-consolidated), Sekisui House Construction and Sekisui House Remodeling. Amount of waste generated from Konoike Construction's domestic construction and civil engineering work. Data for Konoike Construction include demolition work associated with construction and civil engineering work and discrete demolition projects.

¹ Calorific value per unit of energy and CO₂ emission factors used are from the List of Emission Factors and Estimation Methods (for calculating emissions after FY2009 Results (revised in 2015) and based on the Act on Promotion of Global Warming Countermeasures. Electricity emission factors are based on the factors by electric utility in "Emission Factors by Electric Utility (for Calculation of Greenhouse Gas Emissions by Specific Emitters) FY2022 Results" (Ministry of the Environment and Ministry of Economy, Trade and Industry; December 22, 2023).

Environmental Data

Value chain greenhouse gas (GHG) emissions (FY2023)

Scope 1 and 2 GHG Emissions (t-CO₂e)

Scope	Description	CO ₂	HFC ¹	Other ²	Total emissions	Boundary
Scope 1	CO ₂ emissions associated with primary fuels	50,371 ✓	0.13 ✓	0	50,371	Sekisui House (non-consolidated) and major consolidated subsidiaries in Japan and overseas (43 companies)
Scope 2 ³	CO ₂ emissions associated with purchased electricity and heat	22,502 ✓	0	0	22,502	Sekisui House (non-consolidated) and major consolidated subsidiaries in Japan and overseas (43 companies)
Total of Scope 1, 2		72,873 ✓	0.13 ✓	0	72,873	

¹ Hydrofluorocarbon released by Sekisui House (non-consolidated)

² CH₄ (methane), N₂O (nitrous oxide), PFC (perfluorocarbon), SF₆ (sulfur hexafluoride), etc.

³ Market-based calculation

Scope 1 and 2 GHG emissions by country (t-CO₂e)

Japan	United States	Australia	China	Total
70,894	1,650	216	112	72,873

Scope 3 GHG emissions (t-CO₂)

Scope	Category	Emissions	Boundary
Upstream	Category 1	Purchased goods and services	2,264,020 ✓
	Category 2	Capital goods	98,442
	Category 3	Fuel- and energy-related activities not included in Scope 1 or Scope 2	19,139
	Category 4	Upstream transportation and distribution	26,430 ✓
	Category 5	Waste generated in operations	143,647 ✓
	Category 6	Business travel	9,633
	Category 7	Employee commuting	4,479
	Category 8	Upstream leased assets	—
Downstream	Category 9	Downstream transportation and distribution	—
	Category 10	Processing of sold products	—
	Category 11	Use of sold products ⁴	8,300,245 ⁵ ✓
	Category 12	End-of-life treatment of sold products	127,131 ✓
	Category 13	Downstream leased assets	16,245
	Category 14	Franchises	—
	Category 15	Investments	246

⁴ The boundary of calculation was changed from FY2023.

⁵ Since FY2023, Sekisui House's development business and Sekisui House Australia Holdings Pty Ltd, a housing sales subsidiary under Sekisui House US Holdings, LLC, were added to the boundary of Category 11, and the aggregation criteria were revised. For example, only self-consumption is considered for the amount of electricity generated by photovoltaic cells installed in residences, and the service life of low-rise rental housing and non-housing buildings was changed to 60 years. The emissions of Category 11 in FY2023 based on the previous boundary and calculation criteria were 4,019,327 t-CO₂. Indicators marked with ✓ have been assured by KPMG AZSA Sustainability Co., Ltd.

Environmental Data

Scope 3 greenhouse gas emissions calculation standards

Category		Calculation method
Category 1	Purchased goods and services	Boundary of calculation includes goods and services purchased by Sekisui House (non-consolidated) and Konoike Construction (electricity, fuel and other types of energy used at construction sites by partner companies that have no capital relationship with the Group). Raw materials used by Sekisui House's (non-consolidated) factories and major materials purchased by Konoike Construction = [(Purchase price by raw material type (million yen), or quantity purchased by raw material type for major materials purchased) × (CO ₂ emission factor by raw material type (t-CO ₂ /million yen)), or quantity-based emission intensity]. CO ₂ emission factor by raw material type refers to that specified in the Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain (Ver. 2.5, March 2023; Ministry of the Environment and Ministry of Economy, Trade and Industry) and the accompanying Emission Intensity Database for Corporate Value Chain Accounting of Greenhouse Gas Emissions (Ver. 3.3, March 2023). Electricity used at new construction sites, excluding those of Konoike Construction = [(Electricity consumption resulting from onsite temporary construction, estimated based on Sekisui House's past performance (kWh/day) × (Average construction period of a detached house (days/house) × (Number of houses built per year (shipment basis; houses)) - [(Electricity used by Sekisui House (non-consolidated) and Sekisui House Construction (9 companies) in domestic construction and civil engineering work excluding discrete demolition projects)]. Light oil consumption = [Heavy machinery light oil consumption (L/house) per detached house (based on Sekisui House's past performance)] × [Number of houses built per year (shipment basis; houses)]. Data for new construction by Konoike Construction are calculated based on the amount of electricity, fuel and other types of energy used by construction partner companies. CO ₂ emissions are calculated by multiplying the above energy consumption by the CO ₂ emission factor for each energy type. However, for calorific value per unit and CO ₂ emission factor for each energy type, the values of the Act on Promotion of Global Warming Countermeasures are adopted. ¹
Category 2	Capital goods	Calculated based on Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain (Ver. 2.5, March 2023) and the accompanying Emission Intensity Database for Corporate Value Chain Accounting of Greenhouse Gas Emissions (Ver. 3.3, March 2023); Ministry of the Environment and Ministry of Economy, Trade and Industry) for buildings and accompanying facilities, structures, mechanical equipment, tools, furniture and fixtures, vehicles and transport equipment and software.
Category 3	Fuel- and energy-related activities not included in Scope 1 or Scope 2	Calculated based on Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain (Ver. 2.5, March 2023), the accompanying Emission Intensity Database for Corporate Value Chain Accounting of Greenhouse Gas Emissions (Ver. 3.3, March 2023), and the IDEA LCI Database (Ver. 2.3) for Scope 1, 2 (excluding cold water, hot water and groundwater).
Category 4	Upstream transportation and distribution	Calculated according to the Act on the Rational Use of Energy and Shifting to Non-fossil Energy and the Act on Promotion of Global Warming Countermeasures for Sekisui House (non-consolidated). For other parts of the Group, calculated according to the Act on Promotion of Global Warming Countermeasures and according to the fuel economy method (with adoption of prescribed fuel economy when measured values are not available) based on the Act on the Rational Use of Energy, Calorific value per unit of fuel and fuel CO ₂ emission factors refer to those specified in the Act on the Rational Use of Energy and the GHG Emissions Accounting and Reporting Manual (Ver.4.9, April 2023; Ministry of the Environment and Ministry of Economy, Trade and Industry).
Category 5	Waste generated in operations	Calculated as [Waste (t) from offices, factories, and construction and demolition sites] × [Waste CO ₂ emission factor (t-CO ₂ /t) by waste type]. Waste CO ₂ emission factor (t-CO ₂ /t) by waste type refers to those specified in Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain (Ver. 2.5, March 2023; Ministry of the Environment and Ministry of Economy, Trade and Industry) and the accompanying Emission Intensity Database for Corporate Value Chain Accounting of Greenhouse Gas Emissions (Ver. 3.3, March 2023)
Category 6	Business travel	Calculated based on Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain (Ver. 2.5, March 2023) and the accompanying Emission Intensity Database for Corporate Value Chain Accounting of Greenhouse Gas Emissions (Ver. 3.3, March 2023; Ministry of the Environment and Ministry of Economy, Trade and Industry) for employee business trip expenses (travel expenses).
Category 7	Employee commuting	Calculated based on Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain (Ver. 2.5, March 2023) and the accompanying Emission Intensity Database for Corporate Value Chain Accounting of Greenhouse Gas Emissions (Ver. 3.3, March 2023; Ministry of the Environment and Ministry of Economy, Trade and Industry) for employee commuting expenses.
Category 8	Upstream leased assets	CO ₂ emissions from use of upstream leased resources (vehicles, heavy machinery, equipment, etc.) are included in Scope 1 and 2.
Category 11	Use of sold products	CO ₂ emissions are calculated based on energy consumed during the use of all housing and non-housing buildings supplied during the year. Service life is assumed to be 60 years. For housing (in Japan), primary energy consumption is calculated using an energy consumption performance calculation program used for ZEH ² calculations that complies with the Act on the Improvement of Energy Consumption Performance of Buildings, and then converted into CO ₂ emissions. CO ₂ emission factors refer to those specified in the Act on Promotion of Global Warming Countermeasures. ³ For non-housing buildings (in Japan), primary energy consumption is calculated by multiplying floor area by energy consumption per unit floor area for each building use, or by a process analogous to that for housing using the abovementioned program, and then converted to CO ₂ . Energy consumption per unit floor area by building type and energy type primary energy composition rate are based on the 2021 SDGs-compliant version of CASBEE for New Construction (Institute for Built Environment and Carbon Neutral for SDGs). For housing (U.S.), residential energy consumption simulation results published by the Department of Energy (DOE) are converted to CO ₂ emissions. The CO ₂ emission factor is the value published by the Environmental Protection Agency (EPA). For housing (Australia), data on residential energy consumption published by the energy regulator (AER ⁴) is converted into CO ₂ emissions. CO ₂ emission factor uses the values published by the Department of Climate Change, Energy, the Environment and Water (DCCEEW).
Category 12	End-of-life treatment of sold products	Waste originating from materials shipped from Sekisui House's factories (non-consolidated) (weight-based), materials procured on site (weight-based) and the demolition of domestic structures built by Konoike Construction is sorted by waste type. CO ₂ emissions are then calculated as [Waste by type of waste (weight-based)] × [CO ₂ emission factor by type of waste (t-CO ₂ /t)]. Waste CO ₂ emission factor (t-CO ₂ /t) by waste type refers to those specified in Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain (Ver. 2.5, March 2023; Ministry of the Environment and Ministry of Economy, Trade and Industry) and the accompanying Emission Intensity Database for Corporate Value Chain Accounting of Greenhouse Gas Emissions (Ver. 3.3, March 2023).
Category 13	Downstream leased assets	For tenants, etc., of buildings owned by Sekisui House (non-consolidated), including residential buildings, emissions are calculated by multiplying floor area by occupancy rate and either actual usage of electricity, etc., or by the figures specified in Basic Guidelines on Accounting for Greenhouse Gas Emissions throughout the Supply Chain (Ver. 2.5, March 2023; Ministry of the Environment and Ministry of Economy, Trade and Industry) and the accompanying [16] Buildings by use and emissions per unit of area (Secretariat) of the Emission Intensity Database for Corporate Value Chain Accounting of Greenhouse Gas Emissions (Ver. 3.3, March 2023).
Category 15	Investments	Calculated as [Greenhouse gas emissions for major Sekisui House Group equity-method affiliates (1 company) in the previous fiscal year] × [The ratio of voting rights in said affiliates held by Sekisui House (%)].

¹ Calorific value per unit of energy and CO₂ emission factors are based on the Act on Promotion of Global Warming Countermeasures. Electricity emission factors are based on the factors by electric utility in "Emission Factors by Electric Utility (for Calculation of Greenhouse Gas Emissions by Specific Emitters) FY2022 Results" (Ministry of the Environment and Ministry of Economy, Trade and Industry; December 22, 2023).

² Housing designed with the aim of achieving net zero annual primary energy consumption by significantly improving the insulation performance of the external skin and using high-efficiency systems to greatly reduce energy use while maintaining the quality of the indoor environment, as well as utilizing renewable energy, etc.

³ Electricity emission factors are based on the national averages of the factors by electric utility in "Emission Factors by Electric Utility (for Calculation of Greenhouse Gas Emissions by Specific Emitters) FY2022 Results" (Ministry of the Environment and Ministry of Economy, Trade and Industry; December 22, 2023). For city gas emission factors, use the List of Emission Factors and Estimation Methods (for calculating emissions after FY2009 Results).

⁴ Australian Energy Regulator

Environmental Data

Contributions to Reduction

(FY)

	Unit	Amount reduced	Boundary
Detached houses	Thousand tons-CO ₂	1,229	All new houses supplied by Sekisui House (non-consolidated) during the year
Rental housing		1,367	New houses supplied by Sekisui House (non-consolidated) during the year (excluding RC and other special construction projects)
Photovoltaic power installation		8	All work performed by Sekisui House Remodeling on existing houses during the year
Total		2,605 ✓	

Indicators marked with ✓ have been assured by KPMG AZSA Sustainability Co., Ltd.

Calculation method

1. Detached houses and rental housing

- Contributions to reduction = difference in CO₂ emissions during construction and demolition¹ (reference scenario - our properties) + difference in CO₂ emissions during occupancy (reference scenario - our properties)
- CO₂ emissions during construction and demolition are calculated using model plans. CO₂ emissions during occupancy are calculated for each property.
- Service life is assumed to be 60 years.

¹ "During construction and demolition" includes repair and renewal. (The same applies hereafter.)

Conditions for calculating CO₂ emissions during construction and demolition

- CO₂ emissions during the construction and demolition phases of the model plan² are calculated for each of the reference scenario and our properties using the LCCO₂ compliance assessment tool³. See the table below for the main input details.
- The structural framing (level of deterioration countermeasures) of the reference scenario and the structure types of our properties were each calculated based on the results of multiple patterns and considering their ratios.

² Published by the Japan Sustainable Building Consortium. Ver. 1.0 from 2019 is used for detached houses, and Ver. 1.2 from 2022 is used for rental housing.

³ Scale of the model plan: 2 stories, total area 138 m²

	Reference Scenario	Company's properties		Remarks
Structural framing (Deterioration countermeasure level) ⁴	Assumed equal distribution on levels 3, 4, and 5	Level 5		As the service life is assumed to be 60 years, Level 3 (30 years) assumes 2 cycles, Level 4 (60 years) assumes 1 cycle, Level 5 (90 years) assumes 2/3 cycle
Structure Type	Wooden	[Detached houses] Lightweight steel-frame construction: 31% Heavy steel construction: 53% Wooden construction: 17%	[Rental housing] Lightweight steel-frame construction: 37% Heavy steel construction: 63%	Percentage of the Company's properties is based on the total floor area of properties shipped in FY2022.
Service life of roofing materials	Less than 25-50 years	Less than 12-25 years		
Maintenance and management plan/system ⁵	Level 3	Level 5		

⁴ Evaluation according to the Japanese Housing Performance Indication Standards

⁵ Evaluated according to efforts for post-completion maintenance and management that works effectively toward extended useful life of housing

Conditions for calculating CO₂ emissions from occupancy

Energy consumption calculated by the method shown in the table below is multiplied by the CO₂ emission factor for each energy source.

	Reference scenario	Company's properties	Remarks
Energy consumption	WEBPRO's standard primary energy consumption ⁶	Design primary energy consumption ⁷ of WEBPRO, adding photovoltaic power generation. ⁸ The amount of electricity generated by photovoltaic power generation is added to the total amount of electricity generated, including the amount equivalent to electricity sold due to surplus.	WEBPRO: Energy consumption performance calculation program compliant with the Building Energy Conservation Act
CO ₂ emission factor	Values from the Act on Promotion of Global Warming Countermeasures are used. For electricity emission factors, the national average emission factor was taken from Emission Factors by Electricity Utility (for calculating GHG emissions of specific emitters) FY2022 Results (published by Ministry of the Environment and Ministry of Economy, Trade and Industry on December 22, 2023). For emission factors of city gas, the List of Emission Factors and Estimation Methods (for calculating emissions after FY2009 Results) was used.		

⁶ Primary energy consumption when standard insulation and equipment specifications are adopted based on regional classification, room configuration, use, floor area, etc. ⁷ In WEBPRO, the value is treated as a minus value.

⁸ Primary energy consumption considering actual building design specifications

2. Photovoltaic installation

Contributions to reduction = Installed capacity of photovoltaic panels × Annual power generation per kW of photovoltaic panels × CO₂ emission factor × Number of years in service

	Unit	Configuration details
Installed capacity of photovoltaic panels	kW	The Company's results
Annual power generation per kW of photovoltaic panels	kWh/kW	Established by the Company with reference to Japan Photovoltaic Energy Association (JPEA) display guidelines and in consideration of energy payback time. Set value is 1,000 kWh/kW.
CO ₂ emission factor	kg-CO ₂ /kWh	The national average emission factor was taken from Emission Factors by Electricity Utility (for calculating GHG emissions of specific emitters) FY2022 Results (published by Ministry of the Environment and Ministry of Economy, Trade and Industry on December 22, 2023).
Number of years in service	Years	Assumed 20 years

Environmental Data

Energy Consumption in the Sekisui House Group

(FY)

	Unit	2021	2022	2023
Offices	MWh	176,401	175,064	163,847
Factories		138,269	134,379	125,625
Construction and demolition sites		40,247	56,888	47,788
Total ¹		354,917	366,331	337,260
Of which, renewable energy		29,976	48,592 ²	55,064

¹ We have set a target to reduce total energy consumption by 1% or more each year by improving energy use efficiency.

² We revised our methods of aggregation in FY2022.

Purchased Renewable Energy (Electricity)

(FY)

	Unit	2021	2022	2023
Purchased electricity (total)	MWh	109,068	110,134	103,542
Of which, renewable energy		29,946	47,764 ³	54,173
GHG emissions per megawatt hour	t-CO ₂ /MWh	0.321	0.239	0.217

³ We revised our methods of aggregation in FY2022.

GHG Emissions (Scope 1, 2)

(FY)

	Unit	2021	2022	2023
Offices	Thousand tons-CO ₂	46	43	40
Factories		29	22	17
Construction and demolition sites		13	17	15
Total		88	82	73

Environmental Data

GHG Emissions (Scope 1, 2, 3)

(FY)

Scope			Unit	2021	2022	2023
Scope 1, 2	Scope 1	CO ₂ emissions from use of primary fuels		53	55	50
	Scope 2	CO ₂ emissions associated with purchased electricity and heat		35	26	23
	Total of Scope 1, 2			88	82	73
Scope 3	Category 1	Purchased goods and services	Thousand tons-CO ₂	1,834	2,073	2,264
	Category 2	Capital goods		135	191	98
	Category 3	Fuel- and energy-related activities not included in Scope 1 or Scope 2		16	20	19
	Category 4	Upstream transportation and distribution		31	29	26
	Category 5	Waste generated in operations		128	130	144
	Category 6	Business travel		6	7	10
	Category 7	Employee commuting		22	20	4 ⁵
	Category 8	Upstream leased assets ¹		—	—	—
	Category 9	Downstream transportation and distribution		—	—	—
	Category 10	Processing of sold products		—	—	—
	Category 11	Use of sold products		3,085	4,149 ²	8,300 ³
	Category 12	End-of-life treatment of sold products		157	127	127
	Category 13	Downstream leased assets		5	24 ⁴	16
	Category 14	Franchises		—	—	—
	Category 15	Investments		0.3	0.3	0.2
Total of Scope 3			5,419	6,770	11,010	
Total of Scope 1, 2, 3			5,507	6,851	11,083	

¹ CO₂ emissions from leased vehicles (Company vehicles) are included in Scope 1.

² From FY2022, the boundary of Category 11 emissions calculation has been expanded to Sekisui House (non-consolidated, excluding development), Konoike Construction, Sekisui House noie, Sekisui House Construction and Sekisui House Real Estate.

³ From FY2023, Sekisui House's development business and Sekisui House Australia Holdings Pty Ltd, a housing sales subsidiary under Sekisui House US Holdings, LLC, were added to the boundary of Category 11, and the aggregation criteria were revised. For example, only self-consumption is considered for the amount of electricity generated by photovoltaic cells installed in residences, and the service life of low-rise rental housing and non-housing buildings was changed to 60 years. The emissions of Category 11 in FY2023 based on the previous boundary and calculation criteria is 4,019,327 t-CO₂.

⁴ The boundary of calculation has been expanded from FY2022 to improve accuracy.

⁵ Beginning in FY2023, the boundary of aggregation was revised.

E Factory Site Report

The Sekisui House Group's five domestic factories (Tohoku, Kanto, Shizuoka, Hyogo and Yamaguchi) have compiled data and reported on their environmental activities at the production stage, including energy consumption and emissions, for FY2023.

All factories have in place exacting production quality management systems and operate with consideration for their impact on the local environment.

In 2000, we built a unified environmental management system for all production factories and received JIS-Q-14001 certification. Under this system, we set voluntary standards for air and water emissions that are stricter than legal or regulatory standards and periodically measure emissions as part of management efforts. No serious accidental releases of chemical substances, oil or fuels were reported in FY2023.

Working toward the realization of decarbonization, in FY2013 we installed photovoltaic (mega solar) power generation systems at all factories as part of efforts to spread the use of renewable energy. Furthermore, we are switching over power used at factories to power purchased through Sekisui House Owner Denki. As a result of such efforts, in FY2023, 93% of the electricity used at factories was renewable energy.

Tohoku Factory mega solar



Kanto Factory mega solar



Shizuoka Factory mega solar



Hyogo Factory mega solar



Yamaguchi Factory mega solar



To reduce energy use in production, we are systematically replacing existing machinery with high-efficiency models. Approximately 94% of factory lighting is now LED, and we plan to increase this to 100% by the end of FY2024. Furthermore, we have set the target of 100% electrified forklifts by the end of FY2025. We are also systematically replacing Company vehicles with hybrid electric (HEVs) and battery electric vehicles (BEVs).

As for production facilities, we are working to improve productivity by

reducing production issues and updating production methods while saving energy through such initiatives as optimizing production conditions. For drying equipment and other facilities that use heat, we are improving insulation performance to cut energy use and switching fuels to LNG, which emits less CO₂, while examining ways to eliminate the use of fossil fuels in the future.

Through the efficient selection and use of resources at every step from raw materials to final products, we are optimizing material yields to save resources

and reduce waste. At the same time, we are advancing circular economy activities, such as recycling waste into raw materials and reusing it in products for other purposes.

The figures shown in the Factory Site Report represent data from the production stage at the five domestic factories. The Resource Recycling Centers, which handle waste from construction sites, are excluded from the boundary of reporting.

Factory Site Report

Tohoku Factory



Location: 8 Ohara, Shikama-cho, Kami-gun, Miyagi
Establishment: August 1997
Total factory area: 121,458 m²
Factory floor area: 60,420 m²
Max. production: 300 houses/month
Main products: Steel frame members, processed wood parts, Bellburn earthenware exterior wall panels

The Tohoku Factory manufactures Bellburn earthenware exterior wall panels exclusively for SHAWOOD homes. The firing furnace in this process uses a great deal of energy. To reduce energy use, exhaust heat from the firing furnace is captured and used in the drying furnace, thereby increasing energy efficiency. In the Bellburn forming process, after extrusion molding, the product's appearance is checked by AI. Panels that do not meet the required standards are sent back for reuse as raw materials via a return conveyor, helping use raw materials efficiently and reduce waste.

After the Great East Japan Earthquake, Sekisui House formed a disaster prevention agreement with Shikama-Cho, Miyagi (where the Tohoku Factory is located), to set up emergency shelters and provide supplies in the event of a disaster. Environmentally friendly in ordinary times and providing safety and peace of mind to customers and the local community in times of disaster, the site serves as a disaster risk reduction factory of the future. Aiming to speed up initial response and enable energy self-sufficiency when disaster strikes, the factory has built a smart energy system comprising the existing photovoltaic power generation system as well as new large storage cells, gas engine generators, plug-in hybrid electric vehicles (PHEVs) and a factory energy management system (FEMS). Using the large (2 MW-class) storage cells, the factory seeks to lower its peak electricity draw. The use of FEMS improves the visibility of energy use by the factory's main facilities, raising employee awareness of energy saving and thereby helping reduce energy use.

Major Energy and Resource Consumption

Energy	Unit	Consumption
Electricity	MWh	5,034
Gasoline	kL	2.34
Light oil	kL	1.76
LPG	t	958
Municipal water	Thousand m ³	17.5

Amount of Waste Generated and Recycling Rates

Type	Amount (t)	Recycling rate	Material recycling rate
Glass/ceramics	1,374	100%	100%
Metal	258	100%	100%
Sludge	84.5	100%	100%
Wood	1.5	100%	0%
Other	66.3	100%	60.6%
Total	1,784	100%	98.5%

Air Analysis Results

Emissions	Unit	Measured value	Statutory standard	Voluntary standard
NOx	ppm	Less than 28.5	180	60
SOx	Nm ³ /h	0.03	17.5	0.175
Soot and dust	g/Nm ³	0.0045	0.25	0.025

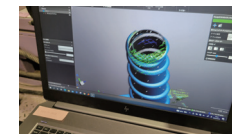
furnace. By cladding these areas with exterior insulation, we improved the furnace's heat retention, reducing LPG use. In terms of shipping and transportation, we used trucks with larger loading capacities in the transport of materials for new detached houses, improving loading efficiency. For large multi-building housing developments, we transported materials for multiple buildings together, thereby reducing the number of trucks required and CO₂ emissions.

2. Resource recycling initiatives

In the Bellburn manufacturing process, we are working to reduce waste by using 3D scanners to create digital 3D models of components that greatly affect the material yield rate and implement multifaceted analyses to reduce the defect rate and thereby reduce waste. At the Resource Recycling Center, we survey and analyze waste sent back from new construction sites in an ongoing effort to reduce surplus material. The survey results are shared with the branch and sales offices to develop countermeasures, improve systems and reduce waste.



3D scanning



Model on screen

3. Rehabilitation of ecosystem networks and contribution to society

This year, new initiatives included the Company's participation in the Zero Marine Trash Festival in Kami-cho, a waterfront environmental conservation activity through which we are helping raise awareness of the problems caused by marine plastics.



Zero Marine Trash Festival in Kami-cho (Land cleanup)



Zero Marine Trash Festival in Kami-cho (Water cleanup)



Exterior-clad insulation on the drying furnace door

Factory Site Report

Kanto Factory



Location: 2 Kitatone, Koga, Ibaraki
Establishment: August 1970
Total factory area: 309,547 m²
Factory floor area: 114,243 m²
Max. production: 870 houses/month
Main products: Steel frame members, panel components, processed wood parts, Dyne Concrete exterior wall panels

Major Energy and Resource Consumption

Energy	Unit	Consumption
Electricity	MWh	14,121
Gasoline	kL	5.02
Kerosene	kL	11.3
Light oil	kL	20.2
LPG	t	97.3
City gas	Thousand m ³	2,356
Municipal water	Thousand m ³	14.2
Groundwater	Thousand m ³	441

Amount of Waste Generated and Recycling Rates

Type	Amount (t)	Recycling rate	Material recycling rate
Glass/ceramics	757	100%	100%
Metal	1,869	100%	100%
Sludge	822	100%	100%
Wood	388	100%	50.7%
Other	168	100%	74.6%
Total	4,004	100%	94.2%

Air Analysis Results

Emissions	Unit	Measured value	Statutory standard	Voluntary standard
NOx	ppm	32	230	150
SOx	Nm ³ /h	Less than 0.18	14.5	7.0
Soot and dust	g/Nm ³	0.014	0.20	0.10

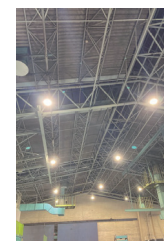
The Kanto Factory manufactures high-performance Dyne Concrete exterior wall panels. This process uses a great deal of energy. We are implementing a variety of measures to save energy in the manufacturing process, such as using exhaust heat from steam boiler drains and changing the heat source for drying furnaces from steam to burners. Furthermore, in the manufacture of steel frame members, panel components and processed wood parts, we are advancing such measures as replacing existing equipment with high-efficiency models, including updating cubicles and installing amorphous transformers, as well as switching to localized air blowers to reduce air compressor power consumption.

In 2022, we rebuilt the factory's office, creating a net zero energy building (ZEB) of the type that Sekisui House is promoting using the expertise cultivated in the housing business. Aiming to ensure peace of mind for everyone working there and create a comfortable space to be in, the building's basic specifications include disaster resilience, efficient ventilation systems (in light of the COVID-19 pandemic) and thermal insulation. In addition, we adopted a free address system, did away with land lines and designed the layout to facilitate interaction between departments to make the office environment more pleasant. Rebuilt as a Green First office, the new building also uses less energy.

1. Initiatives to reduce CO₂ emissions from production (production at factories plus shipping and transportation)

We are advancing our efforts to reduce CO₂ emissions mainly in the areas of energy-saving equipment and controls. We installed inverter compressors, LED interior lighting and other energy-saving equipment. We also adopted energy-saving controls for heating and cooling in electrodeposition coating processes to reduce electricity use. On the steel frame member welding line, we used AI to establish an optimized production method. This greatly improved productivity and reduced the line's electricity use.

To minimize CO₂ emissions during shipping and



Interior LED lighting

transportation, we are working to improve our truck loading methods to reduce the number of trucks required. For example, we made adjustments to packing at the production stage based on the way that materials are loaded onto trucks, eliminating the need for a loading trestle and thus expanding the effective truck bed space. Through such efforts, we are successfully improving loading efficiency.



Improved loading efficiency through adjustments at the production stage

2. Resource recycling initiatives

Waste reduction activities are focused mainly on improving yields and reducing sludge. In the Ironwork Group, chemical sludge can form during electrodeposition coating processes. To minimize this, we now utilize temperature controls that allow us to turn off circulation pumps in order to curb the formation of chemical sludge. The Dyne Wall Panel Group is making improvements to vibrators to increase the uniformity of concrete placing, working to increase yields and reduce waste. In FY2023, we installed new crushing equipment to turn concrete waste generated in the factory into raw materials, increasing the Company's concrete waste recycling rate.

3. Rehabilitation of ecosystem networks and contribution to society

Since 2022, we have been implementing such initiatives as donating Bellmark charity points to the local social welfare council and participating in cleanup activities near Koga Station organized by local soccer club FC Koga, an NPO. To support Burano and Mirai no Kodomo Network, both of which are organizations that receive funds through the Sekisui House Matching Program, we continued to support field trip events for children and donated school swimming supplies and food products.



Cleanup activities near Koga Station

Factory Site Report

Shizuoka Factory



Location: 1100 Naka, Kakegawa, Shizuoka
Establishment: August 1980
Total factory area: 246,098 m²
Factory floor area: 124,347 m²
Max. production: 800 houses/month
Main products: Steel frame members, panel components, processed wood parts, Bellburn earthenware exterior wall panels

Major Energy and Resource Consumption

Energy	Unit	Consumption
Electricity	MWh	12,779
Gasoline	kL	3.41
Light oil	kL	0.28
LPG	t	89.1
LNG	t	1,348
Municipal water	Thousand m ³	42.2
Industrial-use water	Thousand m ³	16.6

Amount of Waste Generated and Recycling Rates

Type	Amount (t)	Recycling rate	Material recycling rate
Glass/ceramics	1,010	100%	100%
Metal	1,623	100%	100%
Sludge	556	100%	82.7%
Wood	269	100%	99.9%
Other	272	100%	55.1%
Total	3,730	100%	94.1%

Air Analysis Results

Emissions	Unit	Measured value	Statutory standard	Voluntary standard
NOx	ppm	42	230	42
SOx	Nm ³ /h	0.11	1.77	0.62
Soot and dust	g/Nm ³	Less than 0.010	0.25	0.1

The Shizuoka Factory manufactures Bellburn earthenware exterior wall panels exclusively for SHAWOOD homes. This process uses a great deal of energy, but to save energy, the factory changed fuels from liquid propane gas (LPG) to liquid natural gas (LNG) in 2011. We have installed an LNG storage tank within the factory to provide a stable supply of fuel. LNG is evaporated in an air heat vaporizer, which draws on natural energy provided in the form of heat by the ambient atmosphere. We are also implementing ongoing initiatives to save energy by improving LNG consumption efficiency, including directing exhaust heat from firing furnaces to warming and drying facilities. Furthermore, we have been proactively transitioning to electric forklifts ahead of the other factories, and approximately 90% of forklifts are now electrified.

As the only one of the Group's five domestic factories located in a water-stressed area, the Shizuoka Factory is actively working to reduce water use. To this end, we store rainwater and use it to clean the dehydrators in the factory's wastewater treatment facilities.

In terms of resource recycling, we have installed equipment to recycle defective Bellburn panels. We use AI in quality inspections, and dispose of panels that do not meet our strict quality standards. Such tiles are crushed and recycled as filler in sound-absorbent flooring, thereby making effective use of materials and reducing waste.

1. Initiatives to reduce CO₂ emissions from production (production at factories plus shipping and transportation)

We are switching to LED lighting, shifting to high-efficiency equipment and transitioning to electric forklifts. In terms of shipping and transportation, we are



LED lighting in Yard 2



New compressor in the ironworking plant



Woodworking dust collector (replacing equipment with high-efficiency models)

working to reduce CO₂ emissions by changing production to reduce transport distance and improving loading efficiency to reduce the number of trucks used.

2. Resource recycling initiatives

To minimize factory waste, we are working to improve the yield of wooden pillars and coatings and reduce the mass of sludge from internal processes through dehydration. Initiatives started in December 2020 to recycle rejected Bellburn ceramic exterior wall panels for use in filler for sound-absorbent flooring are producing significant results.

3. Rehabilitation of ecosystem networks and contribution to society

The Shizuoka Factory focused on maintaining and improving the greening of the site based on a greening plan. On May 26, 2022, a ceremony to grant a subsidy to certified NPO Tokinosu Forest Club under the Sekisui House Matching Program was held at the Shizuoka Factory. The factory has been involved with Tokinosu Forest Club since 2010 through annual tree planting volunteer activities, and the subsidies granted through the Matching Program help make the work even more rewarding. In March 2023, the Company signed a four-party agreement with Shizuoka Prefecture, Kakegawa City and Tokinosu Forest Club to form the Shizuoka Future Forest Supporters. The Company then kicked off the Sekisui House Forest Creation event in July 2023, and we will continue these activities in the future.



Clearing underbrush (group photo)



Clearing underbrush



Forest road maintenance



Signing of the four-party agreement

Factory Site Report

Hyogo Factory



Location: 786-36 Ishitani, Yokodani, Kato, Hyogo
 Establishment: July 1985
 Total factory area: 59,970 m²
 Factory floor area: 20,651 m²
 Max. production: 380 houses/month
 Main products: Dyne Concrete exterior wall panels

Major Energy and Resource Consumption

Energy	Unit	Consumption
Electricity	MWh	2,109
Gasoline	kL	1.22
Light oil	kL	3.29
LPG	t	34.04
City gas	Thousand m ³	800
Municipal water	Thousand m ³	24.0
Groundwater	Thousand m ³	3.65

Amount of Waste Generated and Recycling Rate

Type	Amount (t)	Recycling rate	Material recycling rate
Glass/ceramics	233	100%	100%
Metal	55.9	100%	100%
Sludge	35.4	100%	100%
Wood	8.80	100%	100%
Other	59.9	100%	100%
Total	393	100%	100%

Air Analysis Results

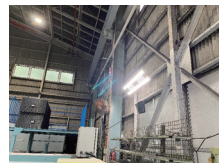
Emissions	Unit	Measured value	Statutory standard	Voluntary standard
NOx	ppm	28	150	75
SO	Nm ³ /h	0.0023	1.5	0.01
Soot and dust	g/Nm ³	0.002	0.1	0.01

The Hyogo Factory manufactures high-performance Dyne Concrete exterior wall panels. The production of concrete uses a large amount of steam. We have installed automatic steam valves in the pipes that supply steam to each process. These enable steam supply to be shut off to processes not in use, saving energy. In 2020, we replaced one of the boilers that supplies steam with a cutting-edge high-efficiency model. Through system control that prioritizes the use of the new boiler, we have promoted further energy saving. In addition, we have applied a thermal barrier coating to the roof of the office building, reducing summer air conditioning power consumption. Responding to calls for energy saving in light of power shortages, we have installed three 35 kW in-house stations to power the factory in the event of electrical grid instability.

We are also working to reduce concrete waste in concrete manufacturing. We are implementing a variety of initiatives to this end, including installing automatic scrapers to prevent material from sticking to the sides of concrete hoppers and switching to butterfly valves on the intake ports of pumps for pouring liquid concrete into molds to prevent liquid concrete spatter. By collecting dust from Dyne Concrete panel processing to recycle as raw material, we are further reducing concrete waste. We have also installed equipment to automatically inspect panel thickness during concrete placement, improving the precision of product thickness and thereby helping reduce raw material use.

1. Initiatives to reduce CO₂ emissions from production (production at factories plus shipping and transportation)

Since FY2022, we have been reducing CO₂ emissions from factory production by switching to LEDs for focal lighting in production processes, adjusting the pressure of compressors that provide power to production lines and changing



LED focal lighting



the boiler control program. We are also working to curb CO₂ emissions in transportation by increasing the operating rates of 25-tonne and 21-tonne trailers, thereby reducing the number of 10-tonne trucks in use.

2. Resource recycling initiatives

In addition to recycling dust collected from manufacturing and processing as a raw material in-house, we have been using new crushing equipment, installed in FY2023, to turn concrete waste generated in the factory into raw materials, increasing the internal recycling rate of concrete waste.



Crushing equipment



Before crushing



After crushing

3. Rehabilitation of ecosystem networks and contribution to society

We clean up the area surrounding the factory every month. In addition, we participate in cleaning up the Tojo area of Kato City to beautify the neighborhood. In local social contribution activities, we participate in food and blood donation drives sponsored by the Kato City Social Welfare Council. We also hold a charity drive for Children's Day and take part in campaigns to support the recovery of disaster-affected areas. In addition, employees volunteered by participating in the Lao Picture Book Project by pasting Lao translations into Japanese picture books, creating and donating Lao versions of The Gigantic Turnip and The Mitten.



Making Lao picture books



Factory Site Report

Yamaguchi Factory



Location: 5000 Suzenji, Yamaguchi
 Establishment: August 1973
 Total factory area: 228,667 m²
 Factory floor area: 88,148 m²
 Max. production: 450 houses/month
 Main products: Steel frame members, panel components, processed wood parts

The Yamaguchi Factory manufactures steel frame members and panel components and processes lumber. We have been implementing innovative measures to save energy, such as using IoT technology to control compressor operations and improve efficiency since FY2019. Specifically, a remote control system developed in-house predicts compressed air usage based on the operational status of manufacturing processes to provide an optimized energy supply by controlling electric valves and multiple compressors. Other energy-saving measures include replacing existing equipment with high-efficiency models, improving productivity and efforts to use energy efficiently.

We have internally developed and launched a smart manufacturing system using IoT, big data and AI for the line that manufactures beams for the Flexible β System, Sekisui House's construction method for 3- and 4-story steel-frame housing. In this system, AI trained on automatically collected past manufacturing data (big data) makes judgments based on manufacturing conditions. Using this technology, we have automated adjustments to production volumes and employee allocation, which previously relied on the expertise of managers. As a result, AI-powered improvements to efficiency in manufacturing line operations and power-saving operations have increased material yield, reduced working hours and cut electricity use.

1. Initiatives to reduce CO₂ emissions from production (production at factories plus shipping and transportation)

To use energy more efficiently, we are replacing equipment with high-efficiency models and working to improve productivity on an ongoing basis. In FY2022, we replaced the chiller used to cool electro-deposition coating materials for iron components with a model that can both cool and warm. This has enabled efficient temperature control of these materials, cutting CO₂ emissions by 12 tonnes annually. In addition, we are transitioning to LED ceiling lamps.

We also replaced office air conditioners



The new chiller

and the cafeteria noodle cooker, improved the power control of factory night-lights and implemented the intermittent operation of conveyors, fans and pumps, as we continue to implement these and other energy-saving initiatives.

2. Resource recycling initiatives

We are working to reduce paint, wood and steel raw material loss and promoting waste reduction programs. On the beam processing line for SHAWOOD wooden-frame housing, we have reduced waste by optimizing product combinations according to the length of the raw materials. We are also optimizing the amount of activated charcoal used to treat factory effluent to reduce the volume of sludge disposed of as waste. In FY2020, we introduced drying equipment that uses sawdust generated onsite as fuel to reduce the moisture content of sludge as part of our efforts to reduce both waste and CO₂ emissions.

3. Rehabilitation of ecosystem networks and contribution to society

Since FY2022, we have continued contributing to ecosystem preservation through a variety of activities in cooperation with the NPO Yacho Yamaguchi, which manages the Kirarahama Nature Observation Park (located in Yamaguchi City), where we took part in tree planting, volunteered to implement controlled burns of park reed grass, and helped jointly maintain a scenic road. Since FY2021, we have been providing food products to Food Bank Yamaguchi, a nonprofit organization that works to reduce food waste. We also registered as a food loss reduction partner with the Yamaguchi Prefecture Food Loss Promotion Council and will continue to collect and donate food from employees' households that would otherwise have been thrown out.



Scenic road maintenance



Planting trees in Kirarahama Nature Observation Park

Major Energy and Resource Consumption

Energy	Unit	Consumption
Electricity	MWh	5,627
Gasoline	kL	2.88
Kerosene	kL	123
Light oil	kL	0.25
LPG	t	444
Municipal water	Thousand m ³	31.2
Groundwater	Thousand m ³	14.6

Amount of Waste Generated and Recycling Rates

Type	Amount (t)	Recycling rate	Material recycling rate
Glass/ceramics	730	100%	100%
Metal	600	100%	100%
Sludge	143	100%	100%
Wood	280	100%	43.9%
Other	82.1	100%	42.6%
Total	1,113	100%	81.6%

Air Analysis Results

Emissions	Unit	Measured value	Statutory standard	Voluntary standard
NOx	ppm	32	250	125
SOx	Nm ³ /h	0.001	3.43	1.72
Soot and dust	g/Nm ³	0.023	0.3	0.25