E

Environmental

Decarbonized Society

We strive to create a decarbonized society by building eco-friendly houses that offer comfortable and healthy lifestyles, significantly reducing CO_2 emissions, strengthening energy-saving activities in our company and harnessing renewable energy.

Main stakeholders

Customers, partner companies (equipment manufacturers, etc.), energy supply companies

Background

The global goal of reducing greenhouse gas emission

Global warming is causing climate change and the impact has started to show in our lives. To curtail its advancement, we must reduce the emission of CO_2 and other greenhouse gases at the global scale.

The 21st Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP21) in 2015 adopted the Paris Agreement under which all countries are to aim to limit global warming to less than 2°C above pre-industrial times. Implementation of the agreement will begin in 2020.

Meanwhile, the Intergovernmental Panel on Climate Change (IPCC) released its special report Global Warming of 1.5°C in October 2018. The report suggests that limiting global warming to 1.5°C instead of 2°C will help achieve a more equitable and sustainable society. Sekisui House, too, participated in COP24 held in December 2018. Discussions in the conference indicate that the movement to reduce CO_2 emissions has further intensified globally.

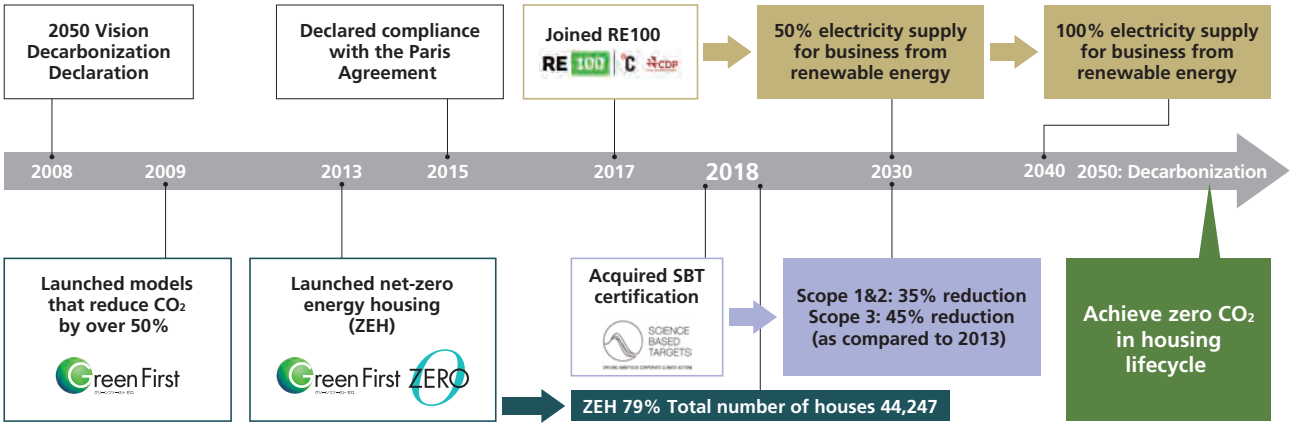
Approach

Our goal

Aiming to eliminate CO_2 emissions throughout the house lifecycle

Sekisui House aims to eliminate CO_2 emissions from the entire house lifecycle, from the purchase of materials to manufacture, sales, occupancy and demolition, by 2050 (2050 Vision: announced in 2008) for all its newly built and existing houses.

In the year after the vision was announced, we launched the Green First model of eco-friendly homes which reduce CO_2 emitted from occupied houses by more than 50%. In 2013, we launched an upgraded version, Green First ZERO housing in anticipation of government plans to standardize net-zero energy housing (ZEH) by 2020.



In 2015, we endorsed the Paris Agreement, which aims to limit temperature rise to less than 2°C. We declared compliance and accelerated measures. In 2017, we became the first Japanese construction company to join the RE100 initiative, which aims to use renewable energy for all electricity needs in all business activities. In 2018, we also acquired certification from the Science Based Targets (SBT) Initiative for setting scientifically sound goals for reduction of greenhouse gas.

We believe that our vision of aiming for decarbonization by 2050 is consistent with the global goals set forth in IPCC's special report (October 2018). We will keep striving to take concrete action for decarbonization by 2050.

We also endorse the TCFD recommendations and have started to examine our business strategies with consideration to climate change in line with its framework (refer to pp. 21-22).

Highlights

Reported our activities in COP24

Sekisui House participated in COP24 held in Katowice, Poland in December 2018. Chairman Abe gave a keynote speech at the Sustainable Innovation Forum held on December 10 and talked about the group's efforts to spread ZEH and reduce CO_2 in its business activities.

The chairman's speech at the Sustainable Innovation Forum

Action policies

The Sekisui House Group is promoting net-zero energy through remodeling and renovation of existing houses, in addition to improving the ZEH ratio in newly built ones, to help reduce CO_2 emissions throughout the group. It is also striving to reduce the CO_2 emitted from business activities of group companies.

1 Expand net-zero energy housing (ZEH)

We will make proactive proposals to achieve the target sales rate of 80% for our ZEH product Green First ZERO in newly built detached houses by 2020. We will also strive for reduction in CO_2 emissions by promoting ZEH in our rental housing Sha Maison and our condominiums.

2 Strengthen energy-saving and energy-generation proposals for remodeling and renovation

We will promote Green First Renovation for existing homes to provide comfortable, eco-friendly living. We seek to significantly reduce CO_2 emissions by saving energy through renovations to improve insulation and installation of latest equipment, while creating energy using photovoltaic systems and fuel cells.

3 Reduce CO_2 emissions in business activities of the Sekisui House Group

All companies of the Sekisui House Group are striving to reduce CO_2 emissions generated from their business activities and will take proactive measures, such as switching to energy-saving equipment and facilities and introducing renewable energy.

How our activities impact society

ZEH housing significantly reduces CO_2 emissions and utility expenses, while supporting more comfortable living and increasing healthy life years of homeowners. We strive to emphasize these merits to customers to expand sales of homes with high added value.

In addition, we seek to expand business and increase quality housing stock by stimulating potential demand through our efforts to actively promote remodeling and renovation of existing homes to make them energy-saving and energy-creating.

Progress

1 Expand net-zero energy housing (ZEH)

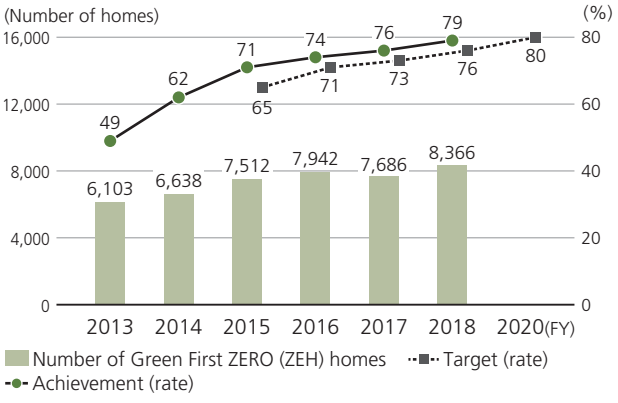
Activity report

Promoting the spread of Green First ZERO

We are striving to promote the spread of Green First ZERO homes, which are net-zero energy housings (ZEH), in detached housing. After the announcement of Green First ZERO in 2013, we have been conveying its merits to our customers by encouraging visits to our model homes, Housing Dream Factories and other facilities, organizing periodic seminars and conducting various other activities. This has led to an increase in ZEH ratio for our detached homes year after year. The total number of ZEH has reached 44,247 (as of March 2019), which is the highest in Japan. Our customers have also showed high appreciation for our products, with positive feedback from more than 90% of them on satisfaction with housing comfort as well as overall satisfaction.

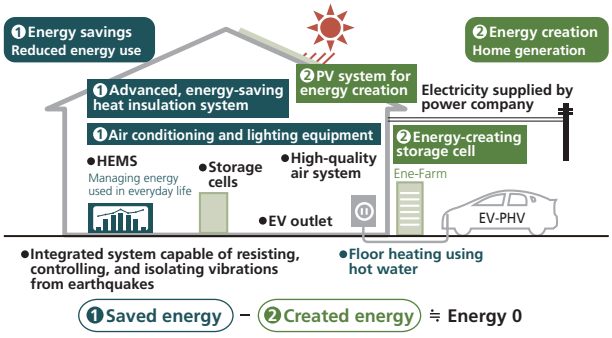
2018 also saw a 3% increase in the ZEH ratio for our detached homes, achieving 79% as a result of active proposals made to customers, including use of subsidies for the net-zero energy housing support project. We will strive to keep spreading Green First ZERO further while maintaining a solid relationship of trust with our customers.

Growth in the Number of Green First ZERO (ZEH) Homes

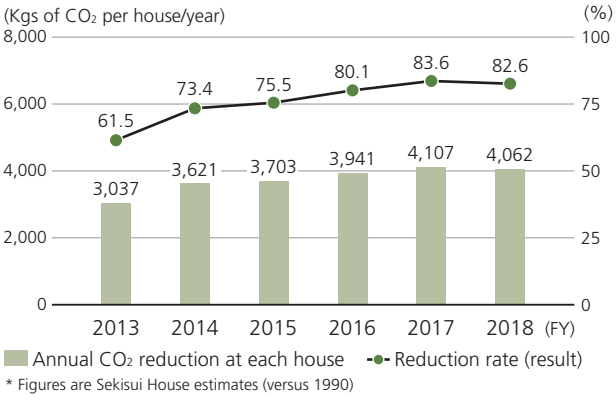


Green First ZERO model

We aim to build zero energy houses by improving insulation and installing energy-saving equipment, in addition to using photovoltaic systems and other advanced energy-generating equipment.



Reduction in CO_2 emissions achieved by the Green First strategy*



* Figures are Sekisui House estimates (versus 1990)

Promoting ZEH in Sha Maison rental housing

Among different types of houses, around 30% of the CO_2 emissions come from collective housing. Under our aim to comply with the Paris Agreement, we have started promoting ZEH for collective housing, in addition to detached houses (Green First ZERO).

In January 2018, we constructed Japan's first rental housing with ZEH standards in all units in Kanazawa City, Ishikawa Prefecture under our Sha Maison rental housing brand. After that too, we have constructed many ZEH units across Japan, focusing mainly on enabling the residents to use the electricity generated with the photovoltaic system. The total number of ZEH-M houses stood at 45* at the end of March 2019.

* ZEH-M refers to ZEH for collective housing and is applicable to the entire building, including common spaces. The number includes condominiums too.

Construction of condominiums meeting ZEH standards in all dwelling units for the first time in Japan

We are also promoting ZEH for condominiums. In February 2019, we completed the construction of Grande Maison Kakuouzan Kikusakacho condominiums in Nagoya, a first in Japan with all dwelling units meeting the ZEH standards.

The exterior walls of the units are made of foam-based insulation material with thickness nearly double that of ordinary houses. The doors and windows use aluminum and resin composite frames and multi-layered glass filled with argon gas. This has raised insulation capabilities of the units by a factor of 1.4 to 1.5. Moreover, we have drastically improved energy-saving capabilities by adopting energy-saving equipment, such as fuel cells, hot water saving faucets, insulated tubs and LED lights, and achieved ZEH by installing photovoltaic systems of an average 4kW per unit. These efforts have enabled us to offer comfort and economy to customers in their daily life.

We have also made our condominiums disaster-ready by providing power generation by photovoltaic systems and fuel cells for each unit in case of a power cut and drinking water, private generators, toilets and other provisions in emergency supplies storage in common spaces to use during disasters.

Construction of the first net-zero energy building (ZEB) in Tohoku through industrialized housing

We completed the construction of Tohoku region's first Nearly ZEB standard* office building, the new office of Sekiwa Construction Tohoku, in Miyagi Prefecture's Sendai City in September 2018.

Net-zero energy buildings (ZEB) refer to buildings that maintain a high-quality indoor environment by reducing environmental impact through building design, high-efficiency equipment and other measures, significantly increase energy-savings and aim to eliminate yearly primary energy consumption by using renewable energy. The new office building achieves these using high insulation, high-efficiency air conditioners and lighting, Building Energy Management System (BEMS) and a high-capacity photovoltaic system (66.2kW). We also shortened the construction time to about 4.5 months by using the original "Flexible ß System," heavy-gauge steel structural frame construction.

We will strive to spread ZEB using our long-standing strength in industrialized housing technology and know-how developed in the ZEH field.

* Nearly ZEB is a ZEB rank indicating buildings that have achieved over 75% reduction in annual primary energy consumption.

Key performance indicators (KPIs)

Indicator	Unit	FY2014	FY2015	FY2016	FY2017	FY2018	Definition and remarks
Green First ZERO	%	62	71	74	76	79	Ratio of Sekisui House detached housing (excluding Hokkaido)
Amount of CO_2 reduction compared to 1990	Tons of CO_2/year	43,015	41,599	41,877	41,681	40,290	Reduction of residential CO_2 emissions from new detached homes compared to 1990 levels (amount and %)
Rate of CO_2 reduction compared to 1990	%	73.4	75.5	80.1	83.6	82.6	

Evaluation

The ratio of Green First ZERO houses reached 79% in FY2018 and we are steadily working to expand it to the FY2020 target of 80%. We also began ZEB activities, while promoting ZEH in rental houses and condominiums, by leveraging the experiences gained through ZEH and our strengths in industrialized housing.

Future initiatives

We will strive to raise the sales ratio of comfortable, economic and eco-friendly Green First ZERO detached houses to 80% by FY2020. We will also promote ZEH in Sha Maison low-rise rental apartments and Grande Maison condominiums, work toward energy-saving and energy-generation in existing houses (remodeling) and further the concept of ZEB for non-residential buildings to help achieve decarbonization.

2 Strengthen energy-saving and energy-generation proposals for remodeling and renovation

Activity report

Promoting Green First Renovation for existing houses

We must promote energy-saving and energy-generation not only in newly built houses but also in existing ones if we wish to achieve a decarbonized society. For this, Sekisui House actively proposes Green First Renovation, mainly for existing customers with detached houses. This initiative contributes to a comfortable, healthy and happy lifestyle by remodeling to save and generate energy.

We help customers lead a comfortable and healthy life by combining innovative technology to improve insulation of the floor, wall, ceiling, and window with installation of comforts such as floor heaters and air conditioning.

New proposal – *Idokoro Dan-netsu* based on Green First Renovation

We launched *Idokoro Dan-netsu* based on the Green First Renovation Concept in December 2018 as a new proposal for existing detached houses. This proposal is meant for existing houses built before 1999 when the energy-saving standards were revised. Until now, repairing existing houses built more than 20 years ago to match the insulation level of newly built ones entailed high costs and a long construction period. Under *Idokoro Dan-netsu*, however, the area of repair is limited to the living, dining and kitchen space, where families spend maximum time, enabling high-precision insulation repairs in a shorter period.

We offer two options for *Idokoro Dan-netsu*—the premium option that aims for comfort equivalent to newly built houses and the basic option that effectively provides insulation repairs in one day. We will continue to expand *Idokoro Dan-netsu* to all houses to provide a comfortable, healthy and happy lifestyle to our customers, prevent global warming and create quality housing stock.

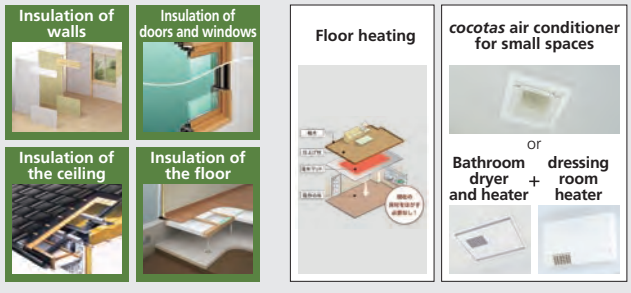
Green First Renovation
いどころ暖熱

Contributing to a comfortable, healthy and happy lifestyle for our customers

Improved insulation + comfort-enhancing equipment → Renovation that adds comfort

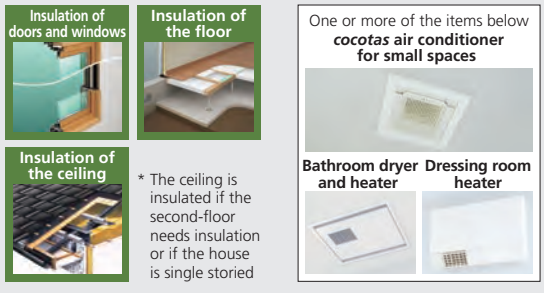
***Idokoro Dan-netsu* Premium that aims for comfort equivalent to newly built houses**

Insulation equivalent to newly built houses for a limited area + **comfort-enhancing equipment that cover shortcomings**



***Idokoro Dan-netsu* Basic that effectively provides insulation repairs in one day**

Easy installation in one day + **comfort-enhancing equipment in spaces other than the living area**



Improved insulation and comfort in the living space (LDK/one floor) surrounding the living room

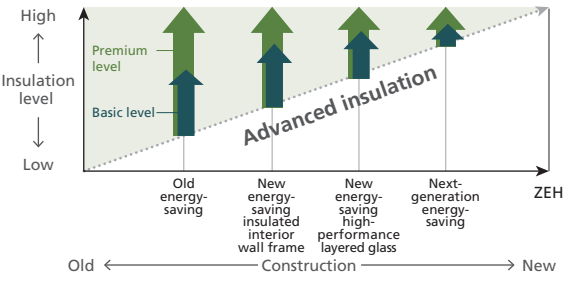
LDK insulation package

Improved insulation in the living, dining and kitchen areas where people spend more time

One-floor package

Improved insulation on the entire first floor which is the main living space

Insulation equivalent to newly built houses possible for existing houses of any age

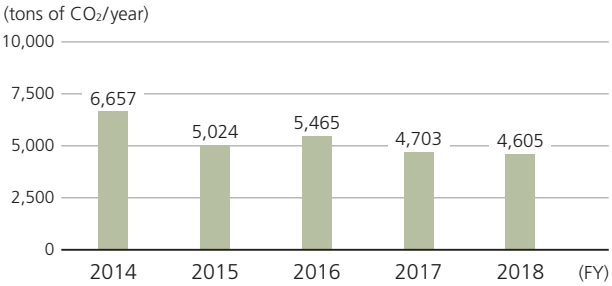


Key performance indicators (KPIs)

Achievements in energy-saving and energy-generating remodeling*

Energy-saving and energy-generating remodeling menu	FY2018 achievements
Photovoltaic system installations	365 units
Energy-efficient bath fixtures	3,692 units
Door and window insulation remodeling	2,557 units
Ene-Farm (residential fuel cells)	689 units
Eco-Jozu (latent heat recovery gas water heater system)	2,756 units
Eco-Cute (heat pump water system)	1,344 units
Underfloor heat cover	843 units

CO_2 reductions due to energy-saving and energy-generation remodeling*



* Achievements of the three companies under Sekisui House Remodeling Co., Ltd.

Evaluation

We offer various remodeling options for floors, walls, ceilings, doors, and windows to improve insulation and reduce CO_2 emissions. Our efforts to provide a comfortable and healthy lifestyle while saving energy have received high praise from customers. Although installation of our photovoltaic power system has declined partially due to a drop in the electricity feed-in tariff, installation of Ene-Farm fuel cells has seen a rise under energy-generating remodeling, including hybrid power generation.

Future initiatives

We will continue to promote Green First Renovation to help reduce CO_2 emissions from existing houses. We seek to provide a comfortable and healthy lifestyle to our customers through energy-saving and energy-generating remodeling, including improvement in insulation and installation of high-efficiency equipment. We will promote *Idokoro Dan-netsu* renovation and make stronger proposals through our Housing Dream Factories, other interactive facilities and events held around the country.

Highlights

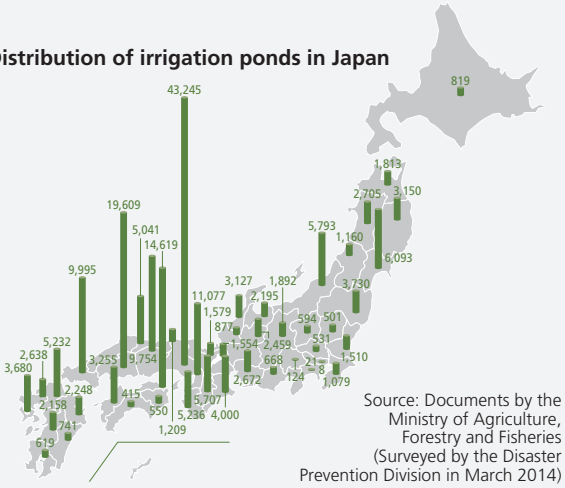
Floating solar system using irrigation ponds

There are about 200,000 irrigation ponds in Japan, mainly in the western regions of the country, and we have started the business of installing floating solar systems on them. The total power generation capacity created through this business exceeded 20MW in January 2019.

Unlike ordinary photovoltaic systems (installed on fields), floating solar systems do not require land development. They are characterized by shorter installation periods and lower environmental impact. Large island-type floating systems can be easily inspected and maintained. They are also typhoon-resistant and did not suffer much damage despite the occurrence of many major typhoons in 2018.

Additionally, floating solar systems contribute toward payment of charges to irrigation associations that maintain the irrigation ponds. They are also considered to be effective in curbing green algae that grow when water temperature in the pond rises. Sprouting and blossoming of a rare breed of prickly water lily have also been sighted after construction, due to sludge dredging based on environment assessment.

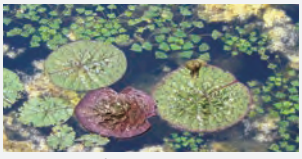
Distribution of irrigation ponds in Japan



Source: Documents by the Ministry of Agriculture, Forestry and Fisheries (Surveyed by the Disaster Prevention Division in March 2014)

Floating solar system

Large island-type floating solar system



A rare breed of prickly water lily

Prefectures ranked by the number of ponds

Rank	Prefecture	No. of Ponds
1	Hyogo	43,245
2	Hiroshima	19,609
3	Kagawa	14,619
4	Osaka	11,077
5	Yamaguchi	9,995

3 Reduce CO_2 emissions in business activities of the Sekisui House Group

Activity report

Launched Sekisui House Owner Denki to purchase post-FIT electricity and use it for corporate activities

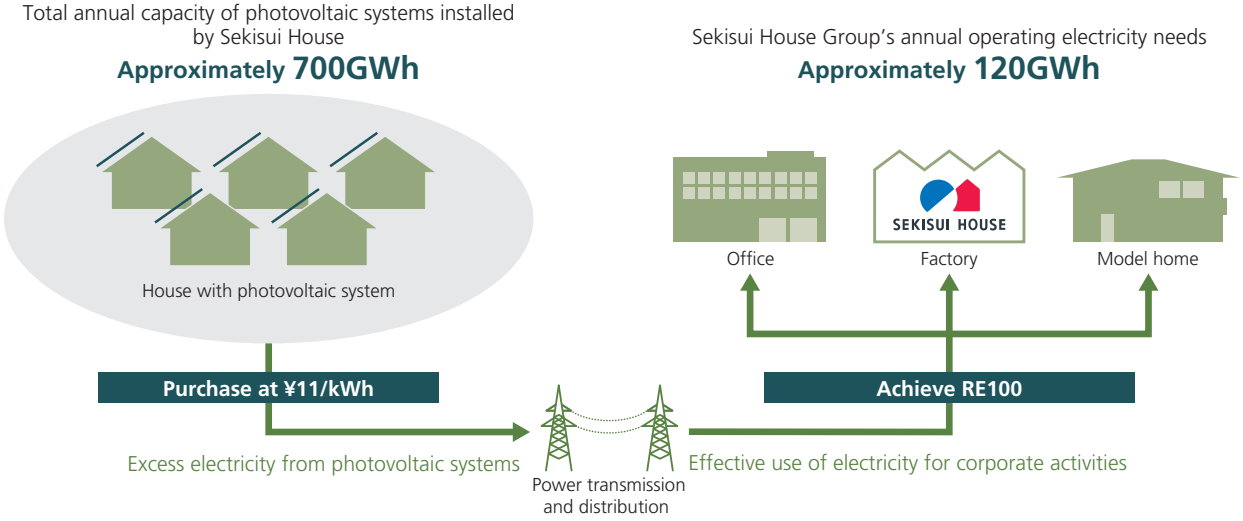
The Feed-in-Tariff (FIT) system started in 2009 is a scheme under which renewable energy can be purchased at a specific price for a specific period. However, the specified period for purchasing electricity from residential PV solar systems (less than 10kW) is 10 years and will start to expire from November 2019 onwards. Sekisui House Owner Denki will purchase excess electricity from post-FIT homeowners, whose specified period has expired, and use it in corporate operations of the group.

The total capacity of photovoltaic systems installed by Sekisui House on its detached and rental houses until now is over 700MW, with annual generation of approximately 700 GWh. By purchasing 20-30% of post-FIT electricity, the group can cover its operating electricity needs of 120GWh annually. Sekisui House Owner Denki is the company's innovative business model that provides greater satisfaction to post-FIT homeowners while enabling the company to meet its RE100 initiative targets*.

* The mid-term target of RE100 initiative is to meet 50% of the electricity needs for corporate operations with renewable energy by 2030 and aim for 100% by 2040.

積水ハウスオーナーでんき
SEKISUI HOUSE OWNER DENKI

- **Sekisui house launched Sekisui House Owner Denki for post-FIT homeowners**
- **The purchase price of post-FIT electricity is ¥11/kWh**
- **Purchased electricity will be used by the group to achieve the targets of the RE100 initiative**



Highlights

Egota-no-mori Project (Nakano Ward, Tokyo)

We started building *Egota-no-mori* under the concept of creating a sustainable community with members from diverse age-groups and inaugurated it on September 26, 2018. Apart from boasting a rich, green *satoyama* environment, it comprises Grande Maison (531 units) and Prime Maison (263 rental units, 121 assisted-living unites for senior citizens and others) properties. We have also built *Livinlabo* as a base that serves as the living room for the whole community so that residents can comfortably and safely live in the houses for long periods. We have also paid attention to managing energy-saving and energy-generation through HEMS by generating solar energy, providing emergency generators, installing home-use fuel cell batteries and taking other measures (Total area: About 3.4ha).

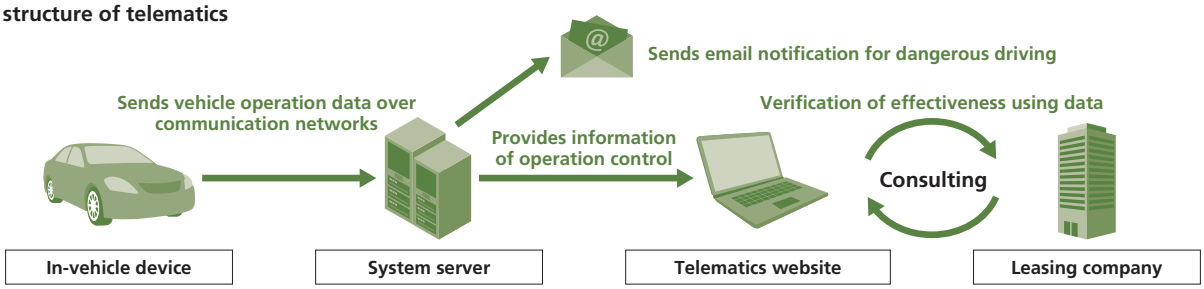
Reducing CO_2 emissions and accidents using telematics-equipped commercial vehicles

From 2011, Sekisui House has been installing telematics* in the roughly 6,000 commercial vehicles used by about 200 offices across Japan. We are using the telematics data to run two PDCA cycles— one for improvements in daily work and the other for long-term, company-wide improvements, to promote eco-friendly and safe driving. We have been continuously organizing about 400 driving safety trainings annually at each worksite and creating handbooks, DVD study materials and stickers on safe driving, which has resulted in a yearly reduction of about 9,600 tons of CO_2 (40% less than 2011) and a decrease in the number of accidents (34.1% less than 2011).

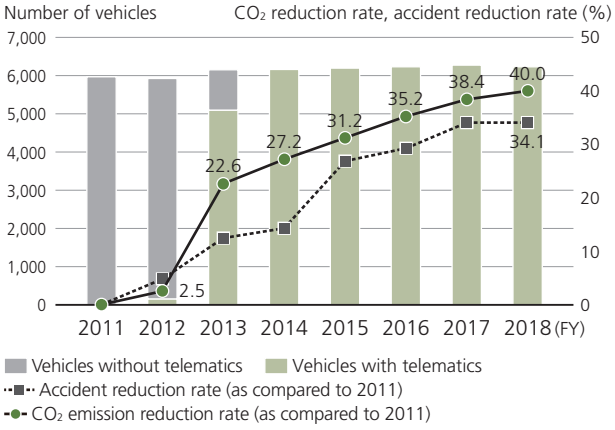
Based on the verification of the effectiveness of these activities in Sekisui House, we expanded the use of telematics to group companies and fitted the system in all 5,700 vehicles owned by 34 main group companies in January 2019.

* Telematics is a system that provides information on vehicle operation, such as usage and fuel consumption, as well as dangerous driving, such as sudden acceleration or deceleration, using devices fitted in the vehicles and communication terminals. It helps visualize fuel consumption, CO_2 emission, idling, dangerous operation and other information.

The structure of telematics



Number of vehicles owned by Sekisui House, CO_2 reduction rate, accident reduction rate



Highlights

Received the Minister of the Environment's Award for Global Warming Prevention Activity for reducing CO_2 emissions from commercial vehicles

Sekisui House received the Minister of the Environment's Award for Global Warming Prevention Activity (Advanced Implementation of Countermeasure Techniques category) for its efforts to reduce CO_2 emissions from commercial vehicle by using telematics to promote eco-friendly and safe driving. The award is part of the Ministry of the Environment's initiatives to promote countermeasures for global warming. In 2018, 145 applications were received from companies, local public organizations, private organizations and others and 39 of them were awarded. Sekisui House has received the award three years in a row and five times in all.

Key performance indicators (KPIs)

Indicator	Unit	FY2014	FY2015	FY2016	FY2017	FY2018	Definition and remarks
Scope 1&2 CO_2 emissions	t-CO_2	126,209	130,482	126,337	140,425 (122,058)	131,226	CO_2 emissions from fuels, power and heat used by the Sekisui House Group
CO_2 emissions from vehicles used by group companies (out of the above)	t-CO_2	37,262	37,239	33,530	31,788	30,413	Annual CO_2 emissions from vehicles used by Sekisui House and group companies

* Starting in FY2015, CO_2 emissions by Sekisui House's main overseas subsidiaries are also added. The totals from 2017 onward were calculated using unitary heat generation and emissions factors based on the Act on Promotion of Global Warming Countermeasures. Figures in parentheses were calculated using the previous calculation method.

Evaluation

We launched Sekisui House Owner Denki with the objective to achieve the targets of the RE100 initiative. We are ahead of our targets for reducing CO_2 emission from vehicles used by group companies and Scope 1 and 2 emissions of our group have decreased 6.6% year-on-year.

Future initiatives

We are preparing to start purchasing post-FIT electricity from November. We will continue to reduce CO_2 emissions from corporate vehicles and change office lights to LED to reduce Scope 1 and 2 emissions and work toward decarbonization.

E

Environmental

Society in Which Humans and Nature Coexist

Striving to maximize ecosystem networks through our business based on sustainable use of natural capital

Main stakeholders

Suppliers (tree growers, landscapers and wooden building materials manufacturers) and customers

Background

The importance of biodiversity preservation in supporting all lifestyles and business activities

Biodiversity acts as an ecosystem service that supports our daily necessities. It is also strongly connected with business activities of corporations in supplying raw materials and other aspects. This is also clearly presented in the SDGs "wedding cake" illustration*, a model increasingly recognized for its representation of the relationship between the 17 goals of the SDGs.

In other words, the goals on Life Below Water (Goal 14) and Life on Land (Goal 15) as well as Clean Water and Sanitation (Goal 6) and Climate Action (Goal 13) support the earth's biosphere, which supports society, which in turn gives shape to our daily economic activities. Our company, too, recognizes the following two points as challenges.

* Source: Adapted from SDGs "wedding cake" illustration presented by Johan Rockström and Pavan Sukhdev

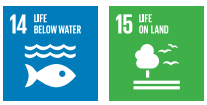
(1) Deterioration of the urban ecosystem

As green spaces shrink due to urbanization in recent years, effective planting will not only lead to ecosystem preservation but will also support our lifestyles in a variety of ways, such as creating spaces for relaxation, revitalizing regions, and reducing flood damage by storing rainwater. Many trees are planted every year when new living spaces are created. However, cultivated and non-native trees tend to be extremely difficult to use for local birds and insects. Many of them are also unable to adapt to Japan's climate and natural features and have low resistance to pests. It is necessary to carefully consider compatibility when selecting plant species in order to protect regional ecosystems.

(2) The importance of traceability in procurement

Lumber is an important renewable resource material that helps build our living spaces and Sekisui House uses approximately 300,000 cubic meters of lumber each year. However, functional degradation of environmental preservation and disruptions in our everyday lives due to practices like illegal logging present obstacles to sustainable forest management. Additionally, ensuring lumber traceability has also become an extremely important issue because distribution channels are complicated. For this reason, initiatives have been spreading throughout the world to secure appropriate lumber procurement, including Japan's Act on Promoting the Distribution and Use of Legally Harvested Wood (Clean Wood Act).

Approach



Our goal

Thinking ahead, promoting the preservation of biodiversity by working with our supply chain

The Sekisui House Group is Japan's largest manufacturer and supplier of prefabricated housing. It is also one of Japan's largest landscape gardeners, planting nearly one million trees each year. From this standpoint, we have set a 2050 goal of expanding ecosystem networks through our business—this involves focusing efforts on planting to preserve local ecosystems and to procure sustainable lumber that would help protect global biodiversity.

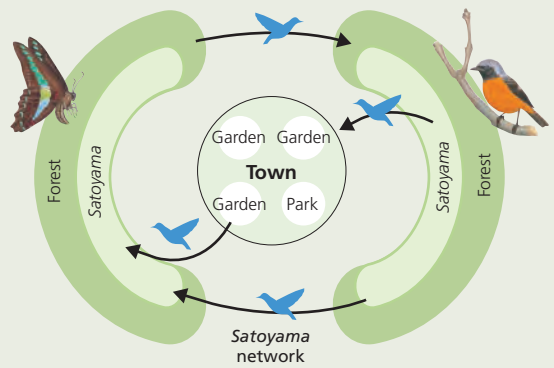
Natural capital and ecosystem take time to mature or recover. Moreover, such initiatives cannot be completed by one company alone. While thinking long-term, we will work with our suppliers to provide customers with rich and comfortable lifestyles while helping to preserve the environment and creating a sustainable society.

Action policies

1 Planting indigenous species suited to regional ecosystems through the *Gohon no ki* indigenous landscaping project

Since 2001, Sekisui House has been promoting gardening and landscaping activities through the *Gohon no ki* (five trees) project. "Select five native species. Three for the birds, two for the butterflies."—guided by this concept, this project actively advocates planting native species that are beneficial to the ecosystem and capable of providing a high level of support to the local wildlife, as opposed to the frequent and exclusive use of cultivated or non-native species.

In terms of project implementation, we collaborate with a network of local tree growers and landscapers to ensure a stable supply of indigenous species, which were previously available in small numbers in the market. We will propose to consumers the richness of coexisting with other living beings and the significance of environmental conservation.



If such living spaces spread throughout the country, the gardens in houses will become an ecosystem network that supports the lives and activities of various living beings.

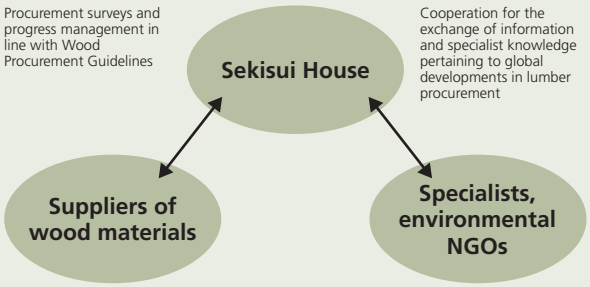
2 Promoting the use of legal and sustainable FairWood lumber

To enable the use of sustainable lumber, Sekisui House procures FairWood* lumber and wood products that are friendly to local communities and the forest environment in logging areas.

FairWood procurement is legal and based on 10 Wood Procurement Guidelines established with consideration of ecosystems and resident lifestyles in logging areas. Each year, procurement surveys are conducted targeting approximately 50 suppliers of wood materials to ascertain where their timber is felled and milled and to confirm its legality. This information is then converted into numerical data used to manage ongoing progress in this area. When the traceability of some wood materials cannot be confirmed, we visit their production area to ensure due diligence through verifications and surveys.

These initiatives attempt to expand the use of FairWood by enhancing supplier consciousness of procurement routes while promoting awareness among trading companies further upstream in the supply chain.

* Advocated by the Global Environmental Forum and FoE Japan, an international environmental protection NGO.



Focus on management conscious of natural capital

Forests, land, water, air, biological resources and other "blessings of nature" are not conventionally considered part of economic systems. Natural Capital is the concept where these blessings are seen as a form of capital in economics, in the same way that financial, manufacturing, intellectual and other artificial or human capital are considered the foundation of production.

It is believed that the flow of natural capital as stock produces ecosystem services worth trillions of dollars at the global scale.

ESG investments in recent years have come to focus on appropriately evaluating and managing the value of natural capital as stock to support sustainable growth of the company. As a member of the construction industry, which impacts nature, we seek to advance our business activities with due consideration to this in our initiatives related to biodiversity.

How our activities impact society

Promotion of the *Gohon no ki* project enables us to also build rich ecosystems in urban areas and create beautiful houses that enhances the quality of life by proposing to customers comfortable lifestyles surrounded by abundant nature. More people are starting to understand that the value of a property increases when the appearance of a building is influenced by the growth of greenery over time. Green common areas are on a rise in rental housing as well, leading to the creation of rich urban spaces.

Furthermore, in the area of lumber procurement, we are raising awareness about the procurement process and increasing the accuracy of traceability data by having each supplier follow our guidelines. As a result, we expect the market for high-quality FairWood to steadily expand, leading to the spread of sustainable lumber.

Progress

1 Planting indigenous species suited to regional ecosystems through the *Gohon no ki* indigenous landscaping project

Activity report

Building beautiful houses by continuously promoting the *Gohon no ki* project

In FY2018 too, we continued planting based on our *Gohon no ki* project while keeping the regional ecosystem in mind. In that fiscal year, we planted 930,000 trees in the gardens of detached homes and collective housing across Japan.

We have planted a total of 15.02 million trees since the inception of the *Gohon no ki* project in 2001. Greening initiatives were earlier considered a contributing factor that increased maintenance costs at our collective housing, such as at our rental house, Sha Maison, and at our condominiums. Regardless, our group has been striving to increase the quality of planting. We strongly believe that planting enhances the comfort of our living spaces and helps them to become more beautiful with age. It also intensifies their character and the attachment residents feel toward them, and helps to differentiate them from other companies' properties.

Highlights

Meticulous support to individual properties by harnessing big data in planting

We have been striving to install a system to collect detailed data on planting in individual properties. The system established a stronger reach in our company in FY2018 and we are using the planting data collected through it in the following two scenarios.

① **When proposing planting: Planting and Raising Proposal Sheet**
This sheet enables us to inform our customers more specifically about the enjoyable season-based aspects of our gardens, such as the timing when flowers bloom, fruits appear or leaves take on autumn colors, when we propose planting in their homes.

② **At the time of handover: Maintenance Sheet**
Our Customer Service Centers share detailed information on maintenance with our customers. This includes information on the timing to apply fertilizers, the time for pruning and the damage caused by diseases and insects.

❶ Introduction to planting ❷ Information on maintenance
❸ Calendar for plant care ❹ Growing environment
❺ QR code (for detailed information)

Key performance indicators (KPIs)

Indicator	Unit	FY2014	FY2015	FY2016	FY2017	FY2018	Total from 2001 to 2018	Definition and remarks
Number of trees planted annually	Tens of thousands	81	99	107	103	93	1,502	15 million trees by 2020

Evaluation

Although the falling number of detached housing has led to a decrease in the number of trees planted, we planted many trees at Sha Maison Gardens and other collective housing with rich common green spaces.

Windows and openings have become larger with the spread of well insulated windows and frames. Therefore, gardens are adding value to the residences themselves by increasing tenant comfort. With this in mind, we trained our designers in greening, which has resulted in increasing the quality of greening proposals for buildings on the whole. The sales of our exterior construction work business touched 65.5 billion yen in FY2018.

We were also able to achieve our Eco-First Promise of planting a total of 15 million trees by 2020 before time.

Future Initiatives

Using planting data as a communication tool

We have been digitalizing data on plants while managing planting data for individual properties. We are also changing over all plant name plates to more durable materials and adding QR codes to the plates to enable users to easily check information on the plants on their smartphones. This will enable them to take more care as they raise the plants, while learning about or hearing the sounds of wild birds who use the plants.

Planting information can actually be accessed by using the QR code on the right.

2 Promoting the use of legal and sustainable FairWood lumber

Activity report

Proactively procuring FairWood lumber with a view to zero deforestation

In line with our Wood Procurement Guidelines created in April 2007, we continue with FairWood lumber procurement initiatives, toward the fair procurement of wood sourced with consideration to the environment. These guidelines are divided into 10 wood procurement policies that take into consideration legality, biodiversity, economies of production areas, and lifestyles of residents of logging areas. Each wood product is classified into one of four ranks based on its total score from each policy. We are pushing ahead with FairWood procurement by using fewer low-ranked wood products and more Rank S and Rank A products. In addition, in consideration of cultivating communities' forestry we do not set procurement targets for the sole adoption of certified wood. Still, certified wood accounts for 63% of all of our wood materials, including those used for interior installation, and 97% of the structural lumber (including certified processed wood).

In FY2016, we formulated Zero Deforestation to clearly express the direction we are aiming for as a company. As part of our efforts to strengthen foundational support for the initiative, we completed registration in the System for Businesses that Deal in Registered Lumber, which was established under the Clean Wood Act, in March 2018.

10 Wood Procurement Guidelines

① Source wood products from areas with relatively low risk of illegal logging.
② Source wood products from areas without sensitive ecosystems.
③ Do not source wood products from areas where local ecosystems are seriously damaged due to large-scale logging of natural forests.
④ Do not use endangered species for wood products.
⑤ Minimize CO_2 emissions when producing, processing, and transporting wood products.
⑥ When logging wood products, avoid conflict with local communities and refrain from unfair labor practices.
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 plantation forests that are managed so as to promote conservation and ecosystem development.
⑩ Use recyclable wood building materials.

Wood product procurement ranking

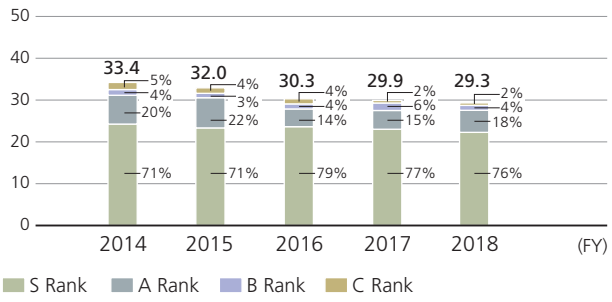
Depending on their total score, procured wood products are classified into four ranks, from high to low: S, A, B, and C. Minimally acceptable scores are set for Guidelines 1 and 4, as we place a high priority on these two items.

Total score (maximum 43 points)	Rank
34 and above	S
26 to 34	A
17 to 26	B
Below 17	C

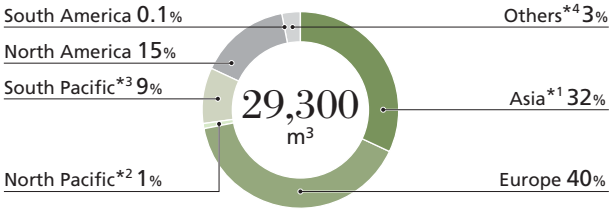
Key performance indicators (KPIs)

Indicator	Unit	FY2014	FY2015	FY2016	FY2017	FY2018	Target	Definition and remarks
Ratio of Rank S and Rank A wood products as defined by the Wood Procurement Guidelines	%	91	93	93	92	94	95	Survey results of around 50 of our main wood suppliers

FairWood procurement volume and rank breakdown (10,000 m³)



Percentage of wood products by region



*1 Asia: Includes domestic materials *2 North Pacific: Russia, etc.
*3 South Pacific: Indonesia, Malaysia, etc.
*4 Others: Africa (includes waste wood)

Evaluation

In FY2018, the ratio of Rank S and Rank A lumber, which are set as a management goal, was 94%. We were able to approach our goal of 95% because of performance of due diligence and other efforts.

Future initiatives

Supplier awareness regarding procurement is growing in line with the enforcement of the Clean Wood Act and broadening concern for SDGs. We will use this opportunity to strengthen consulting for each of our suppliers while promoting the spread of CSR procurement*.

* For more details, please see page 57.

E

Environmental

The Circular Economy

We will optimize the use of resources at production, construction and all other stages, while supporting the creation of a circular economy through recycling-oriented businesses throughout the product lifecycle.

Main stakeholders

Customers and business partners (materials manufacturers, Sekisui House Association, intermediate disposal operators, dismantlers)

Background

Achieving highly efficient use of resources and a circular economy to cope with pressing issue of resource depletion

The SDGs require companies ensure sustainable consumption and production patterns under Goal 12. Amid global increase in population and raised demand for resources and energy, it is essential that companies optimize the whole lifecycle of their products and improve resource efficiency to support a stable lifestyle for all the people.

The housing industry is expected to spread and develop recycling techniques and at the same time, enhance services and support in line with social changes to improve the value of housing, which is also a social stock.

Approach

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

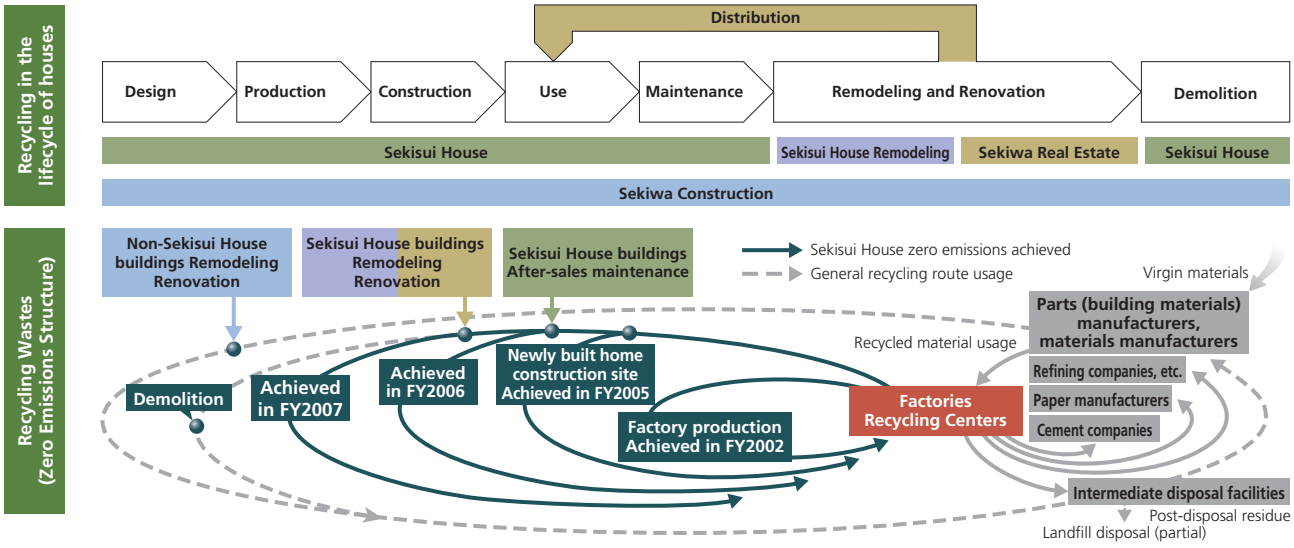
Our goal

Building a circular business model through in-group alliances and business process innovations

The construction industry uses materials in large quantities. The Sekisui House Group is the first company in this industry to acquire certification by the Wide-Area Certification System. We will make utmost use of this certification and work toward efficient zero emissions* throughout the construction lifecycle to expand the recycling loop. Moreover, we will build a new business model and lead in creating new markets that can help maintain and expand the value of housing stock though the group's collective capabilities, which stem from our involvement in a spectrum of business activities.

* Eliminating industrial waste incineration and waste sent to landfills for disposal.

Increasing the life of houses through circular business model based on in-group alliances



Action policies

1 Contribute to the creation of a circular economy through the effective use of resources related to housing

We will strive to increase the lifespan of houses through appropriate maintenance as well as remodeling and renovation in response to changing needs. Simultaneously, we will also lead the industry by properly evaluating the value of quality housing stock that exists in large numbers in society, invigorating their circulation, reducing social loss by creating markets and connecting it to resource conservation. We will contribute to the formation of a circular economy through effective use of limited resources.

2 Promoting recycling of wastes that are increasing due to the supplied housing business

In addition to increasing the physical and social lifespan of houses, we also focus on recycling waste generated due to expansion in remodeling, renovation and other activities. We have our own waste disposal system centered on 21 recycling centers throughout Japan and a cloud-based collection and management system that improves the efficiency of waste collection. Through these and other systems, we are creating a proper recycling structure for the whole group in collaboration with partner companies.

Progress

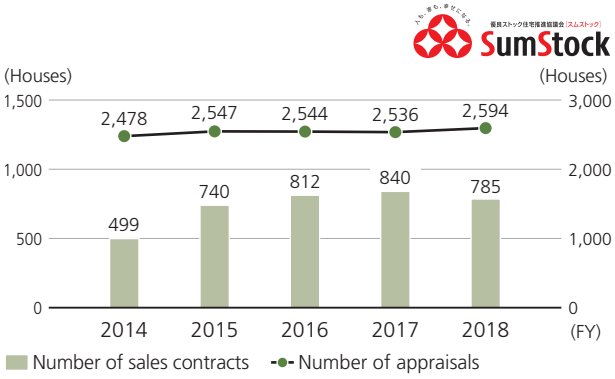
1 Contributed to the creation of a circular economy through the effective use of resources related to housing

Activity report

Spread of SumStock quality housing stock

Aiming to invigorate the circulation of quality housing stock and create an appropriate market, 10 major housing manufacturers including Sekisui House participate in the Provision of Quality Housing Stock Association. Salespeople certified by the Association appraise a house's basic structure "skeleton" and its interior furnishings and facilities "infill" separately. The price of the building and the land is indicated separately and we are striving to combine this with our proprietary circulation system SumStock.

The Sekisui House Group is also promoting SumStock proposals using *Ie-Log*, our original housing history information system. Our Customer Service Centers and all group companies, including Sekisui House Remodeling and Sekiwa Real Estate group work together to promote the spread of SumStock, which promotes circulation of quality houses.



Participation in Plastics Smart

We collect all the plastic from our construction sites and are already recycling about 17,370 tons yearly.

In 2018, we participated in the Plastics Smart -for Sustainable Ocean- Campaign operated by the Ministry of the Environment of Japan and started taking steps to reduce single-use plastics* other than those used for business, including prohibition on using plastic bottles at the workplace.

* Plastic collected as trash or resource after single use

Key performance indicators (KPIs)

Indicator	Unit	FY2014	FY2015	FY2016	FY2017	FY2018	Definition and remarks
Long-life Quality Housing* Certification acquisition rate	%	92.1	92.0	90.5	92.6	92.5	* A certification issued by the Japanese government for houses that meet prescribed criteria, including durability of structural frames, seismic resistance, ease of maintenance and remodeling, and versatility
Ratio of "very satisfied" customers in survey	%	41.9	42.0	43.3	42.3	42.3	Ratio of selecting the highest "very satisfied" scale on a 0-7 scale of assessment

Evaluation

Sekisui House maintains a high level in acquiring the Long-life Quality Housing Certification. Customer satisfaction surveys indicate that the ratio of customers who are very satisfied, satisfied or somewhat satisfied has reached 95.9%, and we will strive to provide even higher satisfaction by expanding our service structure and increasing quality. In the remodeling business, we are enhancing our menu options, from general existing houses to condominium remodeling, including Sekisui House properties. We also attempt to strengthen and expand the foundation for in-group collaborations.

2 Promoting recycling of wastes that are increasing due to the supplied housing business

Activity report

Strengthening the system for properly disposing and recycling waste

The Sekisui House Group is focused on recycling construction material waste generated at each life stage of housing. We take pioneering steps in the industry, such as being the first construction company to acquire certification by the Wide-Area Certification System for waste disposal method. We have achieved zero emissions in our factories by eliminating waste at each stage, from production, new home construction and after-sales maintenance to remodeling.

Additionally, new houses constructed by Sekisui House and the 18 Sekiwa Construction companies were granted certification by the Wide-Area Certification System in February 2019. We will also strive to achieve zero emission in factories working on new home construction under Sekiwa Construction.

Key performance indicators (KPIs)

Indicator	Unit	FY2014	FY2015	FY2016	FY2017	FY2018	Definition and remarks
Total resource input	Thousands of tons	1,079	1,109	1,098	1,058	984	Amount used at our factories
Volume of waste generated*	Thousands of tons	728	753	725	678	638	Waste from new construction and remodeling, including demolition
Volume of waste generated at new construction sites	Kg/house	1,485	1,506	1,476	1,517	1,563	Amount per house (per 145 m^2)

* Includes waste from affiliated companies and waste from demolition of buildings.

Evaluation

The volume of waste generated at new construction sites per house was substantially reduced by approximately 60% compared to FY1999 through improved construction methods and other practices. Recycling as well as disposal is becoming difficult in the Japanese recycling market due to the impact of import restrictions on resources derived from waste materials in China and other East Asian countries. However, we separate waste into 27 categories on-site and a maximum of 80 categories at our recycling centers. This high-level waste separation helps maintain zero emissions despite market changes.

Future initiatives

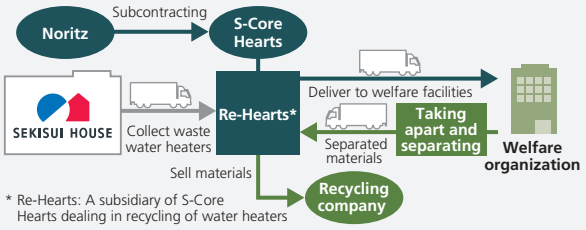
Regarding waste generated at new construction sites, Sekisui House sets target values for each model, continues to implement optimized construction management and eliminates surplus materials while ensuring reliable disposal and recycling by monitoring waste volumes.

Furthermore, in light of expansion in the supplied housing business, including demolition projects, we collaborate with partner companies and industry organizations to promote research related to proper waste disposal and recycling.

Highlights

Supporting the disabled and recycling by collaborating with partners

We support the initiatives taken by S-Core Hearts, a special subsidiary of building equipment manufacturer Noritz Corporation, to help persons with disabilities to become independent. To assist the initiative, we provide them the water heaters collected at our recycling centers. The company outsources the work of taking apart and separating the parts of used water heaters to welfare organizations. In this way, we promote recycling within Japan, while providing job opportunities to persons with disabilities.



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 (Eco-First Promise) – global warming prevention, ecosystem preservation and resource recycling. We have been conducting environmental activities with a view to fulfilling these promises.

In 2012 and 2016, we updated our Eco-First Promise within the broad frameworks of the three promises while incorporating changes in social environment and the progress in our initiatives to intensify our efforts.

1. Proactive reduction of CO_2 emissions in the residential sector and business activities - Global warming prevention

Our promises *

- To aim for over 27% reduction in primary energy consumption in the residential sector, including housing stock, by 2030, corresponding to Japan's targets (39.3% reduction in CO_2 compared to 2013).
- To actively introduce energy-saving air conditioners, eco-friendly cars and LED to surpass the target values (10% reduction in CO_2 emissions in 2020 in comparison to FY2010) set by the Japan Prefabricated Construction Suppliers and Manufacturers Association for CO_2 emissions from business activities of the group.

Major progress in FY2018[*1] ZEH[*2] ratio in custom detached houses

79%

*1 April 1, 2018 to March 31, 2019
*2 Net-zero energy housing

Green First ZERO sales promotion

2. Proactive revival of ecosystem network - Ecosystem preservation

Creating a society that enables a fulfilling and comfortable lifestyle through use of sustainable natural capital.

Our promises *

- To actively carry out planting plans (*Gohon no ki* project) focused on species native to the region to promote landscaping in houses and the community and aim for planting a total of 15 million trees by 2020, which marks 20 years since the launch of business activities based on the *Gohon no ki* project.
- To introduce FairWood lumber in cooperation with suppliers and NGOs with a view to preventing illegal logging and loss of natural ecosystems and making the economies of the production areas independent.

Major progress in FY2018

Total number of trees planted

15.02million

(2020 target achieved)

Promoting the *Gohon no ki* project

3. Proactive promotion of resource recycling activities - Resource recycling

Striving to increase the value of social assets by promoting revitalization of cities and communities and carrying out proposal-type renovation.

Our promises *

- To install a new collection system using resource recycling centers and accelerating zero-emission throughout the group.
- To continue with zero-emission (zero landfill, zero waste incineration not involving heat recovery) at the time of production, construction and after-sales maintenance and aim for 90% recycling of materials.

* This is an excerpt from our Eco-First Promise that was updated in 2016.
Please visit our website for the full text. https://www.sekisuihouse.co.jp/ecofirst/

Major progress in FY2018
Material recycling rate at the time of production, construction and after-sales maintenance

84.5%

Separating waste at a resource recycling center

Highlights

Symposium held to commemorate the third anniversary of the opening of Sekisui House Eco First Park

Sekisui House operates Sekisui House Eco First Park adjacent to its factory in Japan's Kanto region (Koga City, Ibaraki Prefecture). This facility is open to the general public. It features symbolic model facilities we have been working on throughout the history of our environmental activities including three test houses, *Gohon no ki* landscaping concept garden Living Garden and the Resource Wellspring, which achieves zero emission by separating into 80 categories wastes that are separated into 27 categories at construction sites.

In December 2018, we held a symposium at Housing Dream Factory in Kanto region nearby to commemorate the third anniversary of the opening of the park. After Vice Minister of the Environment Hideka Morimoto addressed the gathering, Director Wakui presented a keynote lecture on the ways in which housing can help the environment and stop global warming. He said that it will be too late if we do not stop global warming now and that it is important for every individual to do what they can.

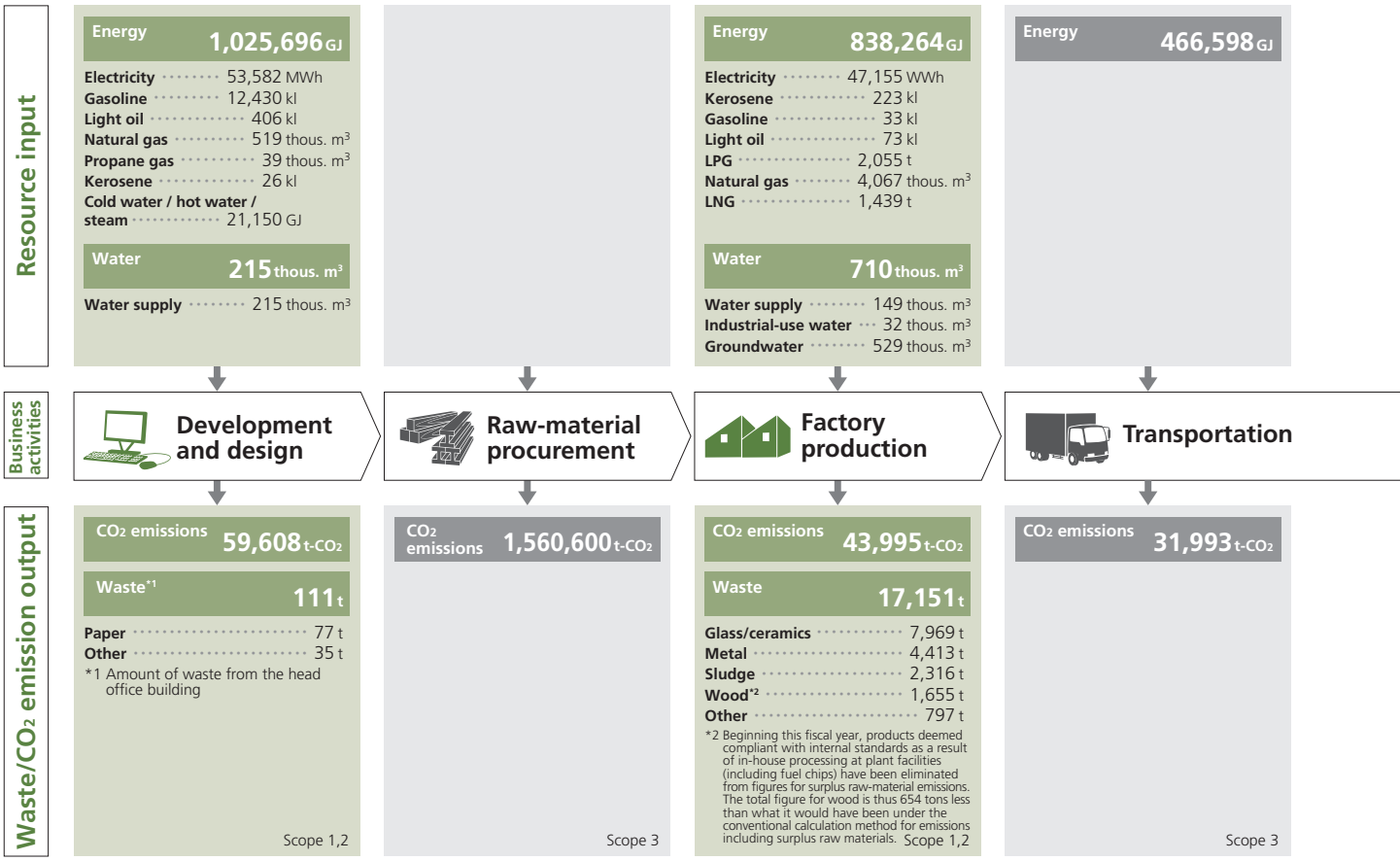
*Apply here to visit the Sekisui House Eco First Park. https://www.sekisuihouse.co.jp/efp/eng/

Hideka Morimoto, Vice Minister of the Environment

Material Balance (Environmental Impact)

To make its environmental-conservation activities as effective as possible, the Sekisui House Group monitors and reports on environmental impact at each stage of the housing-product lifecycle—including development and design, raw-material procurement, factory production, transportation, construction, and occupancy—in Japan and overseas.

FY2018 environmental impact of corporate activities



FY2018 CO_2 emissions (Scope 1–3)

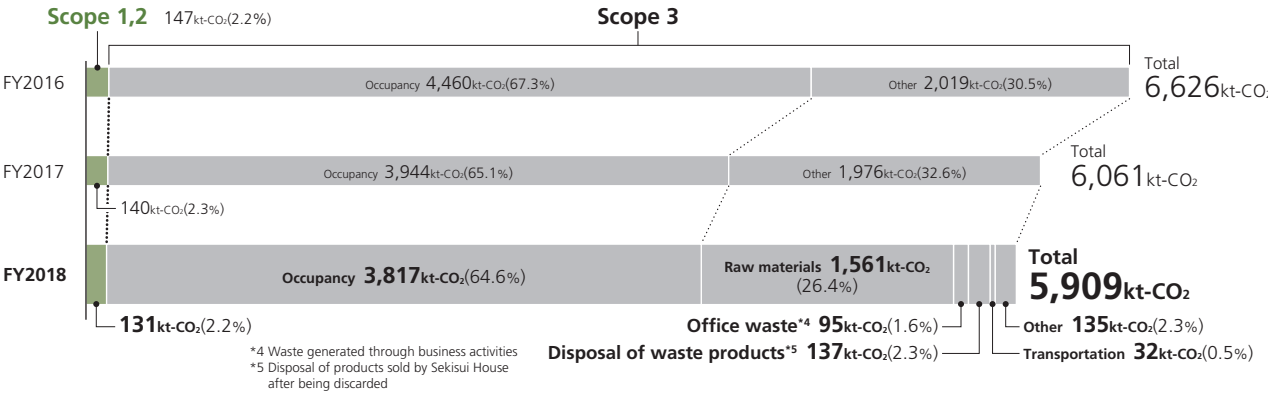
We calculate and disclose our Scope 1–3 CO_2 emissions in line with the methodology of the Greenhouse Gas Protocol.*3

*3 Greenhouse Gas Protocol "Corporate Value Chain (Scope 3) Accounting and Reporting Standard" (http://www.ghgprotocol.org/standards/scope-3-standard)

Scope 1 : CO_2 emissions resulting from fuels used (73 kt-CO_2)

Scope 2 : CO_2 emissions resulting from electricity and heat purchased (58 kt-CO_2)

Scope 3 : CO_2 emissions resulting from energy used for mining and producing raw materials, transporting building components, disposing of waste by non-Sekisui House Group companies, and occupancy by customers (5,778 kt-CO_2)



*4 Waste generated through business activities
*5 Disposal of products sold by Sekisui House after being discarded

Scope: The subjects of this survey are Sekisui House, Ltd., its major consolidated subsidiaries in Japan (47 companies), and major consolidated subsidiaries overseas (11 companies). Scope 3 CO_2 emissions include those attributable to parties outside the Sekisui House Group.

Period: The data is for FY2018 (from February 2018 to January 2019). The figures include estimates in cases where final data was unavailable at the time of calculation.

Construction

Energy 414,947 GJ
- **Electricity** 11,811 MWh
- **Light oil** 1,052 kl
- **Gasoline** 7,515 kl

Water 235 thous. m³
- **Water supply** 235 thous. m³

CO_2 emissions 26,213 t-CO_2

Waste 155,206 t
- **Concrete/asphalt concrete** 32,646 t
- **Sludge** 13,828 t
- **Plastic** 17,376 t
- **Wood** 17,435 t
- **Plasterboard** 14,539 t
- **Glass/ceramics** 7,266 t
- **Paper** 6,865 t
- **Other** 45,252 t

Scope 1,2

Occupancy

Sekisui House provides the market with eco-friendly products featuring PV systems and Ene-Farm fuel cells. Green First ZERO homes with net-zero energy consumption reduce CO_2 emissions by 82.6% compared to data for 1990.

CO_2 emissions 3,817,288 t-CO_2

Scope 3

Demolition

Below are the figures for energy consumption, water consumption, waste, and CO_2 emissions resulting from the demolition of old buildings prior to new construction.

Energy 20,553 GJ
- **Light oil** 545 kl

Water 45 thous. m³
- **Water supply** 45 thous. m³

CO_2 emissions 1,409 t-CO_2

Waste 465,858 t
- **Concrete/asphalt concrete** 232,226 t
- **Wood** 109,757 t
- **Debris** 47,741 t
- **Other** 76,134 t

Scope 1,2

- We have a framework under which the head office receives reports of any violations of environmental laws or regulations at a factory. In FY2018, there were no major violations of greenhouse gas-related laws or regulations (no single case subject to criminal punishment, administrative penalty, or administrative guidance) nor any serious leaks of chlorofluorocarbons (CFCs).
- Sekisui House recycles all waste resulting from the production of materials purchased by factories. Of that total, the material-recycling rate was 94.5%.
- The water discharged from our factories into rivers meets the water-quality standards specified in Japan's Water Pollution Control Law and other relevant regulations and agreements. The water from our Tohoku, Kanto, Shizuoka, Yamaguchi, and Hyogo factories meets Sekisui House's in-house standards, which are stricter than the legal requirements.

Note: All the figures for waste from business activities include valuables.

Notes on the data

Scope 1 and 2 emission amounts attributable to "construction" and "demolition" include CO_2 emissions resulting from construction and demolition by non-Sekisui House Group partner building contractors (applicable to Scope 3). As it is difficult to separate the figures due to housing construction and demolition conditions, the values are included in the calculations for Scope 1 and 2 for the sake of convenience.

Development and design (including sales and administration divisions and model homes)

- **Energy, CO_2, and water**: Energy consumption, CO_2 emitted, and water used by offices and model homes
- **Waste**: the volume of waste generated by the Sekisui House, Ltd. head office (including offices of consolidated subsidiaries in the same building)

Raw materials

- **CO_2**: Estimated CO_2 emissions resulting from the production of materials purchased by factories

Factory production

- **Energy and CO_2**: Energy consumption and CO_2 emissions at the five Sekisui House factories in Japan and Sekisui House Advanced Manufacturing (Shenyang) Co., Ltd., and the Ingleburn Quality Control & Manufacturing Centre (Australia)
- **Waste**: Water consumption at the five Sekisui House factories in Japan and Sekisui House Advanced Manufacturing (Shenyang) Co., Ltd.
- **Waste**: Waste generated by the five Sekisui House factories in Japan

Transportation

- **Energy and CO_2**: Energy consumption and CO_2 emissions at specified consignors and Sekisui House Advanced Manufacturing (Shenyang) Co., Ltd. (calculated according to the guidelines provided in the Act on the Rational Use of Energy and version 4.3.2 of the manual issued by the Ministry of the Environment and the Ministry of Economy, Trade and Industry)

Construction

- **Energy, CO_2, and water**: Estimated energy consumption, CO_2 emissions, and water consumption resulting from new construction by 18 Sekiwa Construction companies and partner building contractors
- **Waste**: Waste generated via new construction, after-sales maintenance, and remodeling by Sekisui House, Ltd., 18 Sekiwa Construction companies, and three Sekisui House Remodeling companies

Occupancy

- **CO_2**: Estimated CO_2 emissions during occupancy at detached houses and low-rise rental apartments built from building components shipped from factories (calculated assuming an occupancy period of 60 years for detached housing and 45 years for low-rise rental apartments)

Demolition

- **Energy, CO_2 and water**: Estimated energy consumption, CO_2 emissions, and water consumption resulting from the use of heavy machinery for demolition by 18 Sekiwa Construction companies and partner building contractors
- **Waste**: Waste generated via the demolition of housing and commercial buildings by Sekisui House, Ltd. and 18 Sekiwa Construction companies