Environmental Management

Principal Initiatives

The most profound risk to our business continuity comes from global environmental issues, including climate change and biodiversity. At the same time, we recognize that solving such issues also presents business opportunities for us. In the Daifuku Environmental Vision 2020 formulated in 2011, we are stating, "We strive to be environmentally aware in every business activity, including consistently developing and providing material handling systems with low environmental impact."
As the three priority measures to achieve this vision, we promise to: "Promote environmentally friendly activities in business operations," "Increase the number of environmentally friendly products and services," and "Enhance the foundations for environmental management." We have set up targets for each measure to be achieved by 2020.

Initiative materiality and relationship to SDGs

Materiality
- Promote environmentally friendly activities in business operations
- Expand environmentally friendly products and services
- Strengthen environmental management platform

CSR Action Plan KPIs and targets for 2020
- Total CO_2 emissions from production and office locations (compared with levels in FY2005): Reduction of 41% or more
- CO_2 emissions from production and office locations (per basic unit of net sales compared with levels in FY2005): 72% or less
- Global CO_2 emissions (per basic unit of net sales compared with levels in FY2011): 50% or less
- Waste generated (per basic unit of net sales compared with levels in FY2005): 72% or less
- Amount of water used (per basic unit of net sales compared with levels in FY2005): 57% or less
- Amount of water used globally (per basic unit of net sales compared with levels in FY2011): 40% or less
- Number of certified Eco-Products: 63
- Contribution to reducing CO_2 emissions from products and services: 100,000 ton-CO_2
- Number of participants in the Eco-Action program: 8,000
- Company-wide implementation arte if D-EMS (Daifuku Eco-Management System): 100%

SDGs pursued by Daifuku

Environmental Vision 2020

Basic message

Contribute to our customers, society, and the conservation of the global environment

We strive to be environmentally aware in every business activity, including consistently developing and providing material handling systems with low environmental impact.

Priority measures for achieving the vision

1. Promote environmentally friendly activities in business operations

- Reducing CO_2 emissions from our business activities
- Taking steps to save energy and resources, introduce renewable energy, preserve biodiversity, reduce environmental impact, and harmonize with communities

2. Expand environmentally friendly products and services

- Developing and supplying environmentally friendly products and services that comply with our environmental standards
- Helping our customers reduce CO_2 emissions through our environmentally friendly products and services

3. Strengthen environmental management platform

- Expanding environmental education and training to increase awareness across the Daifuku Group
- Building a global environmental management framework for the Group to further our environmental contribution

Targets for 2020

Theme		Scope	2020 Targets
Promote environmentally friendly activities in business operations	Preventing global warming (lowering CO_2 emission)	Japan	Total CO_2 emissions from production and office locations (compared with levels in FY2005) Reduction of 41% or more CO_2 emissions from production and office locations (per basic unit of net sales compared with levels in FY2005): 72% or less CO_2 emissions from product shipments (per basic unit of net sales compared with levels in FY2005): 78% or less
		Global	CO_2 emission volume (per basic unit of net sales compared with levels in FY2011): 50% or less
	Resource saving	Japan	Waste generated (per basic unit of net sales compared with levels in FY2005): 72% or less Recycling rate: 99% or more Amount of water used (per basic unit of net sales compared with levels in FY2005): 57% or less
		Global	Amount of water used (per basic unit of net sales compared with levels in FY2011): 40% or less
	Preserving biodiversity	Japan	Continue biodiversity preservation with Daifuku-made initiatives such as the Yui Project
	Green procurement		Continue reducing substances of concern throughout the supply chain
Expand environmentally friendly products and services		Global	Number of certified Eco-Products: 63 products or more certified Contribution to reducing CO_2 emissions from products and services: 100,000 tons-CO_2
Strengthen environmental management platform	Environmental education		Foster environmental awareness by increasing the number of participants in the Eco-Action program: 8,000
	Environmental management framework		Group-wide deployment of a global environmental management framework and continued implementation of D-EMS: 100%

* For more information, please refer to the PDF file.

> Daifuku Environmental Vision 2020 PDF (112 KB)

Promotion Framework

Toward achieving the Daifuku Environmental Vision 2020, the Company set up the "Sustainability Committee" as the highest decision-making body on environmental management issues across the Group. It is comprised of the heads of various business departments and is chaired by the CEO. The Committee issues instructions on implementing plans and activity policies for upper management that address climate change and a wide variety of other issues.

Environmental Action Plan

KPI

> KPI (Key Performance Indicators) is an evaluation index to judge achievement of the CSR action plan. PDF (212 KB)

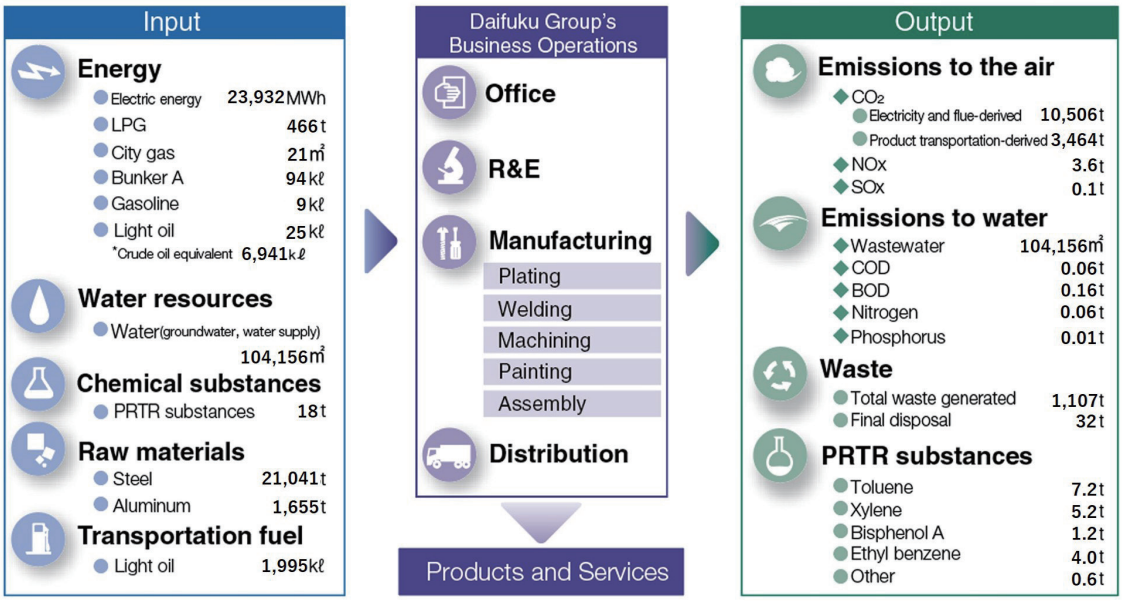
Objectives and Results

Initiative		Objective and Main Approach	Scope	Key Indicator	FY2020 Target	FY2020 Result	Evaluation
Promote environmentally friendly activities in business operations	Preventing global warming	• Energy-saving efforts at production and office locations • Make environmental improvements to production equipment • Modal shift in product shipping • Actively adopt renewable energy • Evaluate and disclose scope 3 emissions • CO_2Third Party Certification	Japan (Production and office locations)	Total CO_2 emission volume compared with levels in FY2005	Reduction of 41% or more	59.1% reduction	✓
				CO_2 emissions per basic unit of net sales compared with levels in FY2005	72% or less	29.0%	✓
			Japan (Product transportation)		78% or less	50.8%	✓
			Global	CO_2 emissions per basic unit of net sales compared with levels in FY2011	50% or less	42.3%	✓
	Resource saving	• Energy-saving efforts at production and office locations • Decreasing waste by recycling valuable resources • Save resources by decreasing final disposals	Japan (Production and office locations)	Waste generated per basic unit of net sales compared with levels in FY2005	72% or less	47.5%	✓
				Waste recycling rate (including cost items)	99% or more	99.2%	✓
				Amount of water used per basic unit of net sales compared with levels in FY2005	57% or less	23.7%	✓
			Global	Amount of water used per basic unit of net sales compared with levels in FY2011	40% or less	25.2%	✓
	Preserving biodiversity	• Ascertain the connection with biodiversity and business activities • Evaluate and monitor the ecosystem in the Shiga Works • Eco-education centered around the Shiga Works • Biodiversity Preservation Initiatives, Yui no Mori (preservation of Yamato salamanders, birds and insects)	Japan (Production and office locations)	-	• Continue with our unique biodiversity preservation centering on the Yui Project	• Conservation of the Yamato Salamander (relocating and breeding) • Ministry of the Environment Monitoring Site 1000 Satoyama Survey • Dragonfly conservation and monitoring	✓
	Green Procurement	• Dissemination and commitment to the Green Procurement Guideline • Exchange information with suppliers			• Continue to decrease the environmental impact throughout the supply chain caused by substances of concern	• Ascertain the situation regarding the environmental impact caused by emissions from our suppliers	△

Initiative		Objective and Main Approach	Scope	Key Indicator	FY2020 Target	FY2020 Result	Evaluation
Expand environmentally friendly products and services		• Expand the number of Daifuku Eco-Products • Develop and provide products that contribute to energy savings • Undertake and disclose life-cycle assessments	Global	Daifuku Eco-Product certification	• 63 or more certified products	• 70 certified products	✓
				CO_2 Reduction Contribution	100,000 ton-CO_2	72,474 ton-CO_2	×
Strengthen environmental management platform	Environmental education	• Regularly hold environmental education activities • Promote the Eco-Action program		-	• Total of 8,000 or more employees participating in the Eco-Action program (events, lectures, development of autonomous activities domestically and internationally)	• Total of 7,122 employees participating in Eco-Action program	×
	Environmental management framework	• Gather information to set targets at global affiliates • Implement a framework to gather environmental information from across the Group			• D-EMS company-wide implementation rate of 100% • Setting up a Global Committee	• D-EMS company-wide implementation rate of 96.3% • Environmental-themed events (photo contest) • Set up a Sustainability Committee	×

Material balance

Monitoring the environmental impact of its business operations, Daifuku strives to minimize its environmental burden.



Environmental accounting

Daifuku conducts environmental accounting by quantitatively monitoring costs and the effectiveness of its environmental conservation activities.

Costs of environmental conservation activities (classified by business activity)

(Thousand yen)

Category			Investment		Cost	
			FY2019	FY2020	FY2019	FY2020
Incurred in business areas	Pollution prevention	1. Preventing air pollution	-	-	22,850	52,160
		2. Preventing water pollution	31,877	33,228	80,662	73,924
		3. Preventing soil contamination	-	-	0	0
		4. Preventing vibration and noise	-	-	0	0
	Environmental conservation	5. Saving energy	260,255	93,444	196,313	206,037
		6. Controlling chemical substances	-	-	704	1,226
	Resource recycling	7. Effectively utilizing resources	-	-	1,007	1,007
		8. Processing industrial and general waste	5,081	4,200	49,394	28,744
Upstream/Downstream	9. Difference between costs of regular and green purchasing		-	-	1,920	1,920
Management activities	10. Environmental management system operation		-	-	42,253	42,631
	11. Environmental information disclosure and advertisement		-	-	3,655	4,195
	12. Environmental impact monitoring		20,986	2,720	6,966	6,956
	13. Environmental education for employees		0	0	17,732	9,298
R&D	14. Environmental conservation out of R&D		-	-	178,720	183,300
Social activities	15. Nature protection, greening and beautification		2,669	21,202	49,338	53,051
	16. Donation to and support for nature conservation groups		-	-	5,320	5,080
Environmental damage response	17. Covering environmental damage		-	-	0	0
Total			320,869	154,794	656,834	669,530

Economic effects of the environmental conservation measures (actual effects)

(Thousand yen)

Effects	FY2019	FY2020
Sales of valuable resources	55,792	56,200
Energy cost saving	33,136	69,592
Waste disposal cost saving	▲10,597	2,985
Total	78,331	128,777

Effects of environmental conservation

Item	FY2020	Reduction relative to the previous year (▲ Increase)	Amount generated per basic unit of net sales relative to the previous year
Energy cost (Thousand GJ)	269.0	2.6	93.6
CO_2 emissions (Ton-CO_2)	10,506.0	436.0	90.8
Total waste generated (Ton)	4,166.0	782.0	79.6
Final disposal (Ton)	32.0	6.0	79.6
Total drainage (Thousand m^3)	104.2	20.8	78.8

Environmental management system certification

We are promoting ISO14001 certification for environmental management systems at our major production sites in Japan and overseas. ISO-certified manufacturing is carried out in all three production sites in Japan and in 15 overseas production sites. The ratio of certified sites to the total number of production sites is 72%.

Certification standards	Production locations (consolidated)	Number of certified locations among total	Proportion of certified locations
ISO14001	25	18	72%

> ISO Certified Locations

Disclosure of climate risks and opportunities based on TCFD recommendations

On May 10, 2019, Daifuku assented to the recommendations from the Task Force on Climate-Related Financial Disclosure (TCFD) and is disclosing related information in accordance with the recommendations. Through dialogue with stakeholders, Daifuku continues to promote initiatives to address climate change as it aims for sustainable growth.

> Daifuku Group's Disclosure of Climate Change Information PDF (719 KB)

> Additional information on the new environmental vision PDF (391 KB)

> List of assenting companies (Website of the Ministry of Economy, Trade and Industry)

* TCFD: Established by the Financial Stability Board (FSB), the TCFD is an international organization comprising representatives from central banks, financial supervisory authorities and finance ministries of major countries and regions, and helps companies understand what financial markets want from disclosure and encourages them to align their disclosures.

Membership status of climate-related organizations

In order to achieve the Daifuku Environmental Vision 2050, which was formulated in February 2021, the Daifuku Group is a member of various organizations that aim to solve the problem of climate change, and we are involved in sharing information and encouraging policy proposals.

Organizational memberships

Japan Climate Initiative

Japan Climate Leaders' Partnership (Supporting Member)

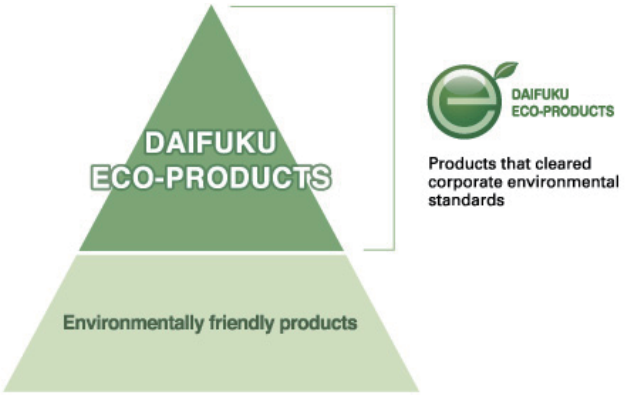
TCFD Consortium

Environmentally friendly Products and services

Daifuku Eco-Products Certification Program

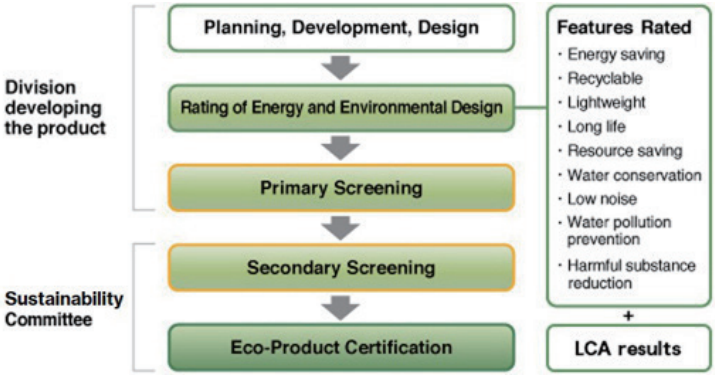
KPI

In 2012, Daifuku began its Daifuku Eco-Products Certification Program to certify products based on environmental impact assessment ratings and a certification system using Daifuku's own standards. Under the program, all products across the Group are measured under the same standards, with measurements coming from results of a Life Cycle Assessment (LCA) and environmental performance assessments on a number of areas, including power saving, recyclability, lightweight, long Life, packing material reduction, water conservation, noise reduction, water pollution prevention, and harmful substance reduction. As of May 2021, 70 products have met the standards and been certified as Daifuku Eco-Products.



Certification process

To obtain a valid and trustworthy rating from multiple perspectives, the screenings are done by the Eco-Product Committee, comprised of directors or chief operating officers from different operations.



Certified Eco-Products (Year)

Manufacturing & Distribution

- Unit load AS/RS - Shuttle Rack (SRS-D^3) (2020)
- Case sorting system - Cross-belt Sorter (2020)
- Mini load AS/RS post and beam type wide truss rack (2019)
- Mini load AS/RS - H-P10 (2019)
- Mini load AS/RS - Smart Stocker Quattro (2018)
- Mini load AS/RS - Shuttle Rack (SRS-M Double Deep) (2018)
- High-speed transport vehicle - Sorting Transfer Vehicle (2017)
- High-throughput picking station - Quick Pick Station (2017)
- Stacker crane - R-series S/R machine (2015, 2016)
- AS/RS - Seismic damper unit for rack (2016)
- Bolt-up Rack (2015)
- Mini load AS/RS - Shuttle Rack (2013, 2014)
- AS/RS for long objects (2014)
- Transport system - Motor Roller Conveyor (2013)
- Mini load AS/RS, R-F/N (2012)

Cleanroom

- 6G FPD cassette transporting system (2020)
- Cleanroom storage system - CLS-50IIECO (2019)
- 10.5G FPD cassette transporting system (2018)
- Green HID Inductive Wire 500 m (2017)
- Cleanroom Equipment - Mechanical Centering System (2016)
- Overhead monorail system - Clean Space Carrier (2013, 2015)
- Transport system - Cleanway (2014)
- Cleanroom transport/storage system - MMHS (MMHS: Matrix Material Handling System (2013)
- AS/RS - Clean Stocker (2012)

Automotive

- Drive-through truck station - TRTS (2020)
- Standard controller for the Flexible Drive System - FDC (2019)
- Tablet control panel for automotive production lines (2018)
- Skillet conveyor with lifting device - Scissor lift (2017)
- Chainless conveyor System - Flexible Drive System (2016)
- Temporary storage and sortation system - SPDR (2015)
- Pallet-type conveyor system - Flexible Drive System (2014)
- Power assisting system - ECO POWER ASSIST (2013)
- Environmentally friendly paint system - E-DIP (2012)

Car wash machines and related products

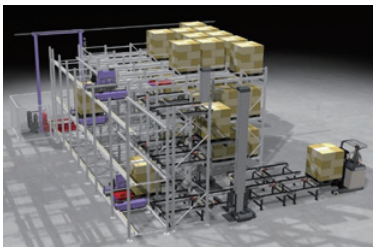
- One-way drive-through car wash machine - Twinfect Riscia (2020)
- Gate-type car washing machine - Fabrica NEO (2019)
- Gate-type car washing machine - Avante NEO (2019)
- Space-saving gate-type car wash machine - Zechs (2018)
- Tunnel-type car wash machine - Magic Thru (2017)
- Large-vehicle car wash machine - Camion Custom (2017)
- One-way drive-through car wash machine – Twinfect Feat (2016)
- One-way drive-through car wash machine – Twinthru Luke (2016)
- One-way drive-through car wash machine - Fabrica (2015)
- One-way drive-through car wash machine - Avante (2015)
- Gate-type car wash machine - Flare (2014)
- Gate-type car wash machine - Grossa (2014)
- One-way drive-through car wash machine - Twinfect Force (2013)
- One-way drive-through car wash machine - Twinthru Arteno (2013)
- Gate-type car wash machine - Euros (2013)
- One-way drive-through car wash machine - Granada (2012)
- Gate-type car wash machine - GSPECT (2012)

Electronic products (Contec Co., Ltd)
• Box computer (Model: BX-U200) (2020) • Box computer (Model: BX-M1500) (2020) • Lamination signal measuring unit (Model: CPS-PAV-AE01-JP) (2020) • Insulated analog input unit (Model: AI-1608VIN-USB) (2019) • Panel computer (Model: PT-970W10WA) (2019) • Box computer (Model: BX-T1000) (2018) • High-speed GPIB communication micro converter (Model: GPIB-FL2-USB) (2018) • Factory automation computer (Model: VPC-700) (2018) • M2M Controller CONPROSYS nano (2017) • RS-232C communication unit (2017) • FLEXLAN Series 8 port 10/100M Unmanaged Industrial Switching HUB (2016) • SolarView Battery (Solar power generation data measurement and display device, SolarView Battery) (2016) • CONPROSYS Series | Ether CAT Slave Module (2016) • BOX-PC (2015) • M2M Controller (2015) • Solar power measurement display system - SolarView Compact (2014)

Certified Eco-Products (2020)

Unit load AS/RS - Shuttle Rack (SRS-D^3)

Energy Saving | CO_2 Reduction | Lightweight



The SRS-D^3 is a pallet-type AS/RS suitable for large-lot, narrow-range product storage. A load lifter transports pallets to each level, and a master carriage and sub-carriage positioned at each level loads the pallets onto the rack. Unlike with a conventional stacker crane, this system stores multiple loads along the rack's depth axis, thereby greatly improving storage efficiency. Additionally, the weight of the traveling system has been reduced by separating the traveling and lifting mechanisms, so power consumption is also lower than that of previous models.

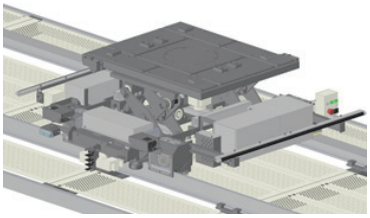
Case sorting system - Cross-belt Sorter

Energy Saving | CO_2 Reduction

This cross-belt sorter is a looped high-capacity case-sorting system comprising vehicles equipped with a belt conveyor. The power supply to the belt conveyor uses the rotation of the vehicle 's wheels, and electrical power is supplied efficiently from an electricity-generating motor. Power consumption is also lower than that of previous models.

6G FPD cassette transporting system

Energy Saving | CO_2 Reduction | Lightweight



This system transports glass cassettes in 6G flat panel display (FPD) production lines. It maintains the performance and rigidity of the previous model, but with the structure and shape reworked to give it a lower profile and lighter weight. The number of parts was reduced by 36% and the weight by 21%, thus reducing power consumption by 39% and CO_2 emissions by 40%. Changes made to the rail structure help reduce manufacturing times.

Drive-through truck station - TRTS

CO_2 Reduction

This drive-through truck station system automatically loads and unloads trucks. Trucks can be loaded/unloaded without the use of a forklift, thus reducing the workload for the driver. It reduces the wait time for trucks significantly—from the normal 40 minutes down to 10 minutes. This system also improves the operating rate by optimizing the number of trucks and drivers required.

One-way drive-through car wash machine - Twinfect Riscia (Model: TFR200)

Energy Saving | Long Life

The Twinfect Riscia is a drive-through car wash system for self-service stations. In addition to the quick-wash and high-performance drying functions of the previous model, this model has a large 15 LCD touch-screen control panel. Moreover, it enables cashless payment options, such as traffic e-money, QR code, and credit card. Visual clarity and ease-of-use have also been improved. In terms of eco-friendliness, energy consumption can be reduced by changing the run speed, but without lowering the performance of the drying process in water-repellant car washing.

Box computer (Model: BX-U200)

Energy Saving | Lightweight | Resource saving

This small, lightweight industrial box computer reduces the number of peripheral connection ports to the minimum required. Mounted IC parts have been integrated into one and metal parts and packaging have been made one-piece, achieving a 43% reduction in energy consumption, a 53% reduction in weight, and a 56% reduction in packaging materials.

Box computer (Model: BX-M1500)

Energy Saving | Lightweight

This industrial box computer uses a high-performance CPU that operates without a fan. It uses a TDP35W CPU and the use of heat-sink technology eliminates rotating parts. The fan has thus been eliminated—also eliminating the need to eventually replace it—and the case size has been reduced, thereby lowering power consumption by 42% and weight by 31% compared with the previous model.

Lamination signal measuring unit (Model: CPS-PAV-AE01-JP)

Energy Saving | Resource saving

This gauging unit uses a light sensor to detect the illumination status of the lamination signal lamp and sends the data via a low-energy consumption wireless signal. Aggregating the data allows the operating status of equipment to be visualized. The use of a low-energy consumption wireless signal and reduced start-up time saves on power use, reducing energy consumption by 83% compared to that of competing products. Additionally, the packaging material has been changed to be 2.5% lighter, thereby contributing to resource conservation.

Life Cycle Assessment

From 2015, we have incorporated the life cycle assessment (LCA) as a analysis tool for desigining eco-friendly products. By comparing old and new products, we are able to further enhance our eco-friendly product designs.

Results of LCA conducted on the New Goodrack (heavy load storage rack)

Specifications of a standard representational model:

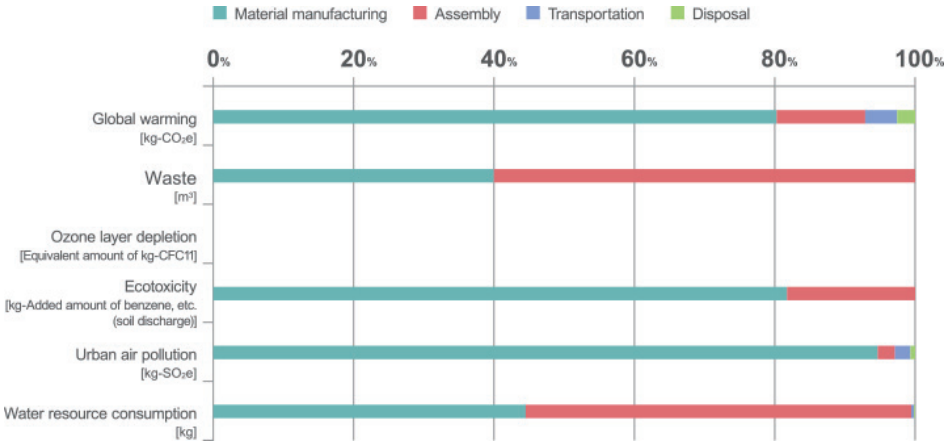
Width (W):	2,500 mm
Depth (L):	1,100 mm
Height (H):	5,000 mm
Number of levels:	3 beam levels (maximum load: 2,000 kg/level)
Connection:	10 spans

1. LCA computation scope

2. Impact assessment

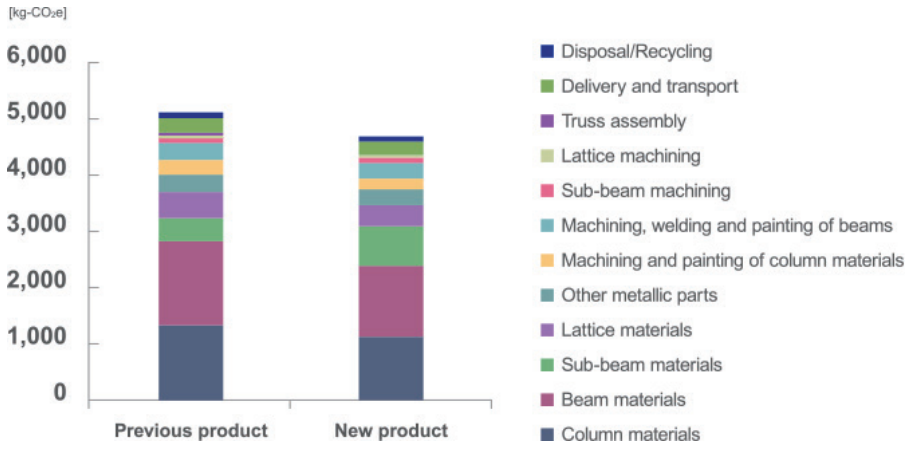
We assessed the impact of six environmental issues according to product life cycle stages. We also compared the environmental impact of new and previous products.

Summary of impact assessment by product life-cycle stage



- Material manufacturing stage contribution exceeded 80% for global warming, ecotoxicity (terrestrial) and urban air pollution.
- Assembly stage largely contributed (around 60%) to waste disposal site exhaustion and water resource consumption.
- Within the computation conditions no clear impact was noticed towards ozone depletion.
- Transportation stage and disposal stage impact were minimal across all listed environmental issues.

Comparison with previous product (Global warming)



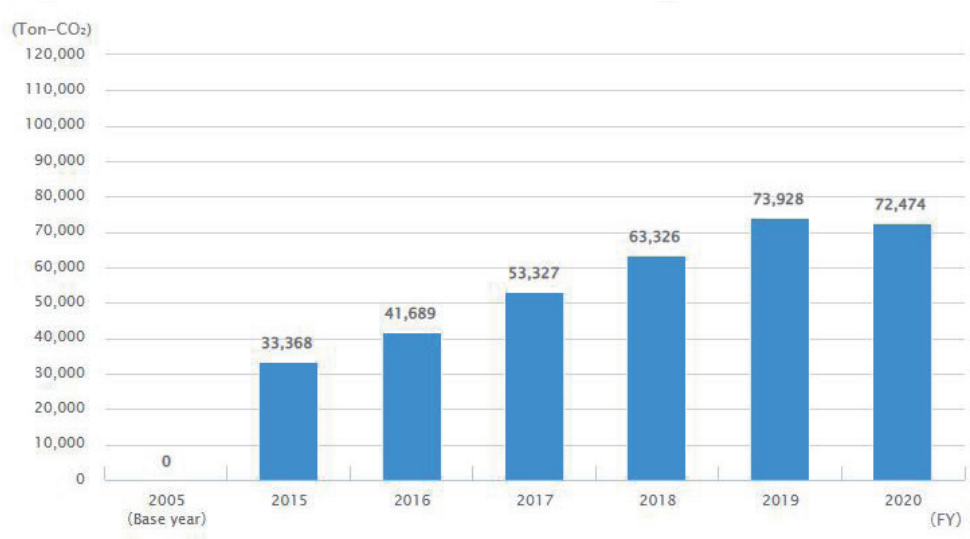
- Environmental impact reduction rate for new products was 7.4%.
- Decreasing the weight of trusses and beams was the main contribution to the reduction of environmental impact.

CO_2 Reduction Contribution

KPI

Daifuku strives to decrease its carbon footprint by providing eco-friendly products and services.
The contribution towards reduced CO_2 from our products and services is calculated by taking the amount of CO_2 released and subtracting it from the amount released during fiscal 2005, which acts as the base year.
In the Intralogistics and Cleanroom global businesses, which account for about 80% of the overall group CO_2 reduction target, saw a reduction in the ratio of energy-saving products compared to 2005. As a result, we have only achieved 72,474 tons of the 100,000-ton CO_2 FY2020 target.

CO_2 reduction contribution from environmentally friendly products



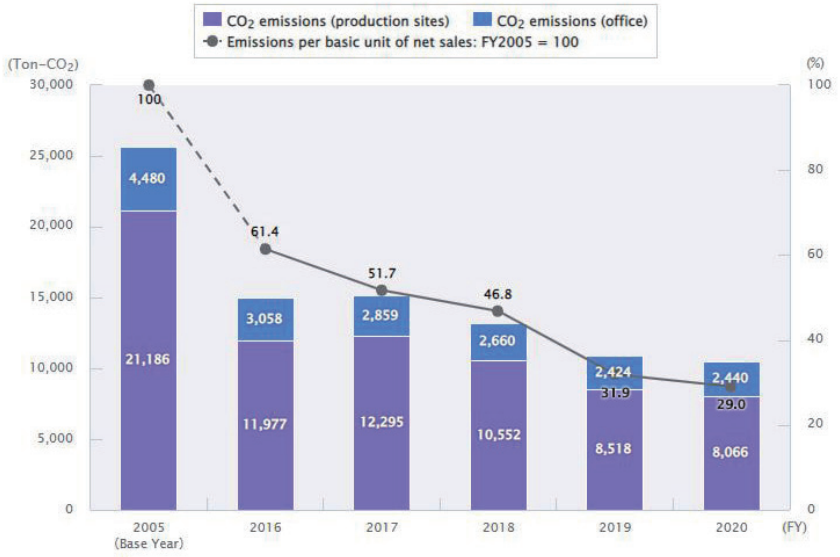
Energy Conservation

CO_2 Emissions and Reduction Measures

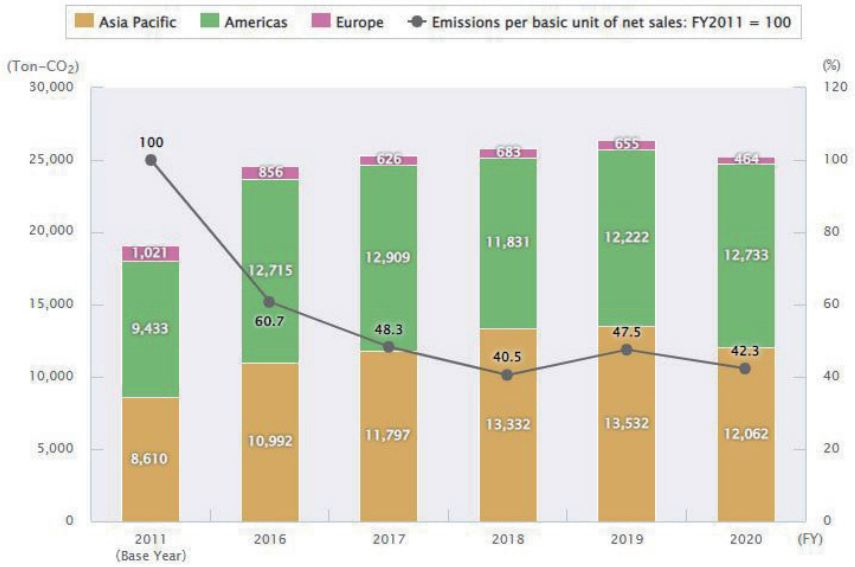
KPI

We achieved a 59.1% reduction in emissions against the Group target (41% or more reduction compared to fiscal 2005). Also, emissions per unit of sales was 29.0%, which largely exceeded the target (72% or less compared to fiscal 2005). We will continue to make improvements to our business operations and related equipment and facilities.

CO_2 emissions (Japan)



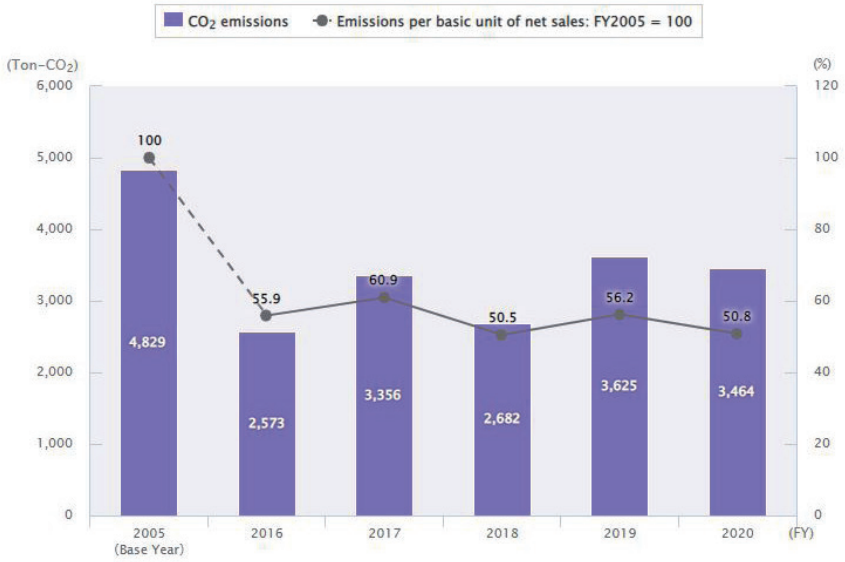
CO2 emissions (Non-Japan)



Status of Environmental Impact Related to Transportation

The CO_2 emissions per unit sales from product logistics in fiscal 2020 was 50.8%, which greatly exceeded the Group target (78% or less compared to fiscal 2005). We are continuing to lessen the environmental impact through effective transportation, such as improving load dimensions and transportation methods, switching from individual transportation to routine pickups and deliveries, and using modal shifts.

CO_2 emissions associated with transportation

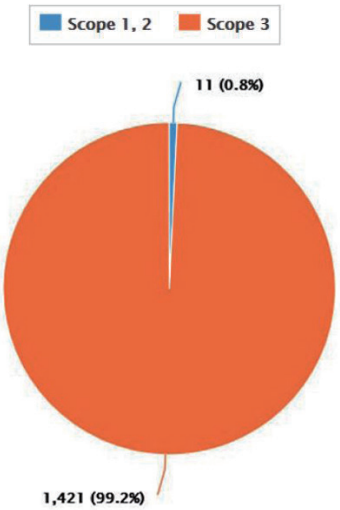


Scope 3

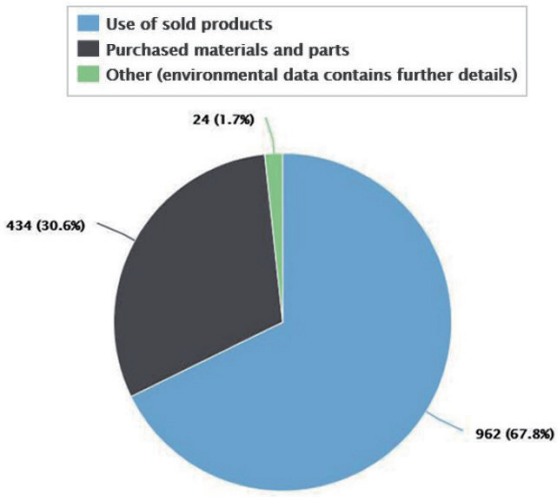
In order to reduce the greenhouse gases (CO_2) emitted from all of our corporate activities, we are calculating the total CO_2 emissions throughout our supply chain (Scope 3).
Scope 3 emissions in fiscal 2020 totaled 1,421,314 (tons-CO_2), which accounted for 99% of our total CO_2 emissions.
CO_2 emissions attributable to the "use of products for sale" accounted for 68% of Scope 3 emissions.
We will continue to work on achieving more accurate calculation methods for the target categories, while focusing on developing and selling environment-friendly Daifuku Eco-Products with the aim of reducing CO_2 emissions from the "use of products for sale."

Scope 1
Greenhouse gases emitted directly from business activities (fossil fuels, etc.)
Scope 2
Greenhouse gases emitted indirectly from business activities (use of electric power and heat, etc.)
Scope 3
Greenhouse gases emitted indirectly from the supply chain of business activities (purchased products and service, use of products, etc.)

CO_2 emissions throughout the entire supply chain (1,000 tons-CO_2)



Scope 3 CO_2 emissions (1,000 tons-CO_2)



Note: Due to rounding, the sum of individual items and the total may not always match completely.

Energy Conservation Efforts

Our CO_2 reduction efforts range from large-scale operational improvements to individual employees reducing their commute and travel when on company business. Daily data on the use of electricity and heat energy, the major contributors of CO_2 emissions, are constantly monitored for improvement.

A photovoltaic system installed at Hini Arata Kan demo center

Solar modules installed on the rooftop

In March 2010, Daifuku installed solar panels at the Hini Arata Kan material handling and logistics exhibition center located in the Shiga Works site. In fiscal 2020, the system generated about 210,000 kWh of power, which reduced CO_2 emissions by 70 tons.

Daifuku Shiga Mega Solar

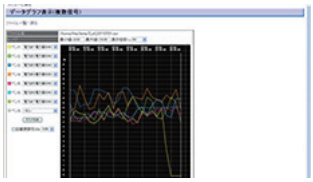
52,000 square meters of solar panels

In November 2013, we installed the photovoltaic system, Daifuku Shiga Mega Solar, at the Shiga Works. Comprising 17,752 panels, the system has a maximum power generation capacity of 4,438 kW (largest in Shiga Prefecture) and an annual output (power sold to electric power providers) of approx. 4,300,000 kWh (equivalent to the annual power consumption of 1,000 general households).

Implementing Cool Biz and Warm Biz Campaigns

All Daifuku facilities in Japan turn off their lights during the lunch break, as well as after hours. In addition, office air conditioning is set at 28 degree Celsius in the summer and 20 degree Celsius in the winter to reduce environmental impact while still creating a comfortable environment for employees. All divisions have a no jacket and tie rule in summer and encourage employees to wear warm clothes to the office during the winter.

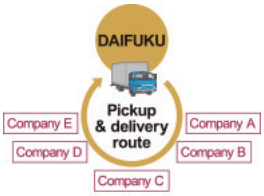
Introducing a system to visualize energy consumption at production facilities



Display of numerical values in a graph view

We have installed a system that can constantly monitor the energy consumed, such as electric power and gas, in our facilities at the Shiga Works. As numerical values are displayed in a graph on personal computers, it is possible to instantly assess the energy consumption status on production lines at a glance. Constant monitoring lets us easily see where we need to improve operation and facilities to save energy.

Sharing transportation resources



One truck picks up and delivers to suppliers in a given region (milk run method*).

We are now building a partnership with suppliers for parts and materials and set up a pickup and delivery service in order to reduce costs and properly control delivery dates. Although suppliers had transported cargo with their own trucks, we are currently making rounds with one truck per region through concentrated management and throughput control, and are striving to consolidate and streamline trips to logistics sites. We are contributing to the prevention of global warming by reducing CO_2 emissions throughout the entire supply chain as well as reducing each supplier's logistics costs.

* Milk run method:
One truck makes the rounds to each supplier and picks up cargo that had previously been delivered by separate trucks. This method improves load efficiency and reduces fuel consumption and CO_2 emissions.

Modal shift*

Daifuku typically uses trucks to transport products to customer sites, but we are in the process of shifting to more environmentally-friendly methods of railway and marine transportation. Our aim is to improve the quality of logistics operations by coordinating delivery schedules and managing costs, thereby reducing CO_2 emissions as much as possible. In fiscal 2020, we were able to cut CO_2 emissions by 265 tons through the modal shift of transportation methods.

* Modal shift:
Choosing modes of transportation with lower environmental impact, such as railroads and ships, to transport cargo. By switching from trucks to ships and trains, it is possible to transport cargo with fewer CO_2 emissions and less impact on the environment.

Carbon offsetting*

For our material handling and logistics exhibition center, Hini Arata Kan, we implemented a 100% carbon offset of total annual CO_2 emissions (204 tons-CO_2: fiscal 2020) calculated from the electric power and liquefied petroleum gas (LPG) used in running the center, and the lightweight oil (biodiesel fuel) used for shuttle buses, as well as 1.5kg CO_2 per visitor.

* What is carbon offsetting?
Carbon offsetting refers to the act of recognizing one's own greenhouse gas emissions, making efforts to reduce the emissions, and of counterbalancing, in whole or in part, the greenhouse gas emissions that cannot be reduced by purchasing credits or through other means.

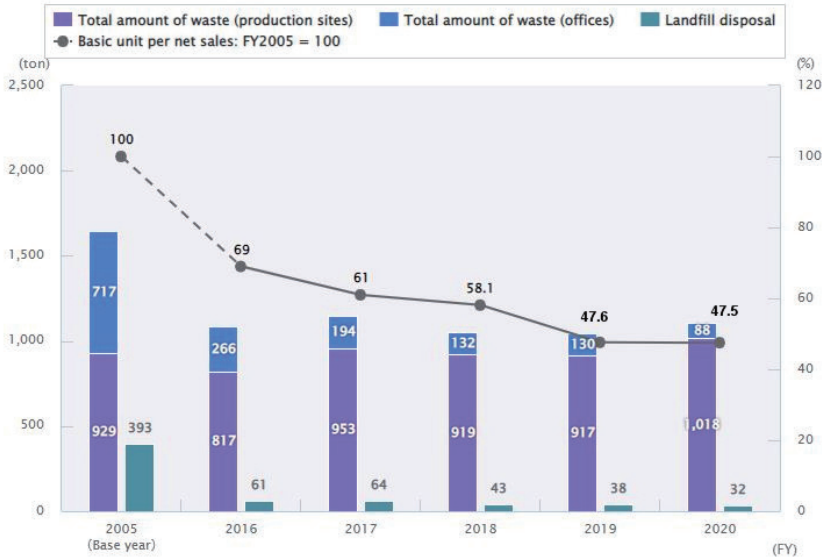
Resource Saving

Waste Reduction and Recycling Rate

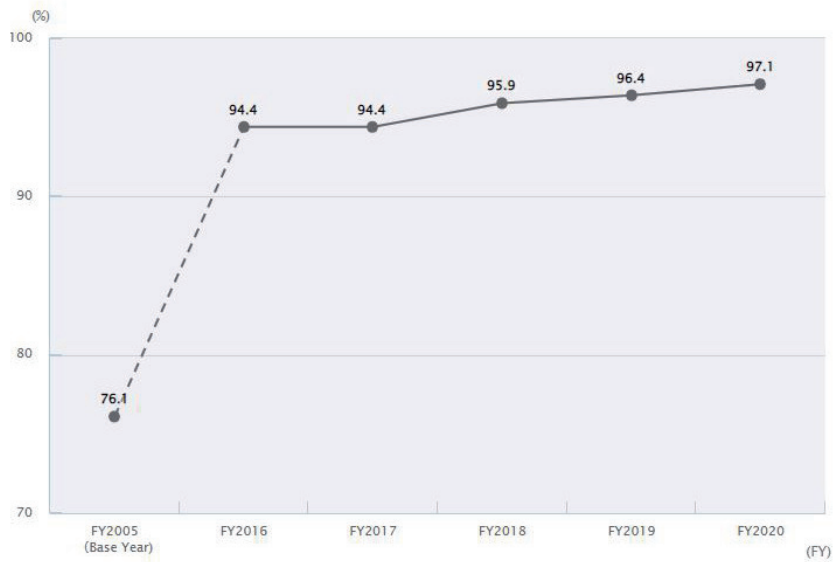
KPI

The amount of waste generated per unit of sales in fiscal 2020 was 47.5%, thereby achieving the Group-wide target (72% or less compared to fiscal 2005). In our efforts to meet our waste recycling target (99% minimum), we reduced landfill disposal by thoroughly sorting the waste and thereby achieved a recycling ratio of 97.1%; however, we weren't able to reach the target. Since fiscal 2018, we have been excluding valuable resources in the calculation of waste volume.

Total amount of waste (Japan)



Recycling rate (Japan)

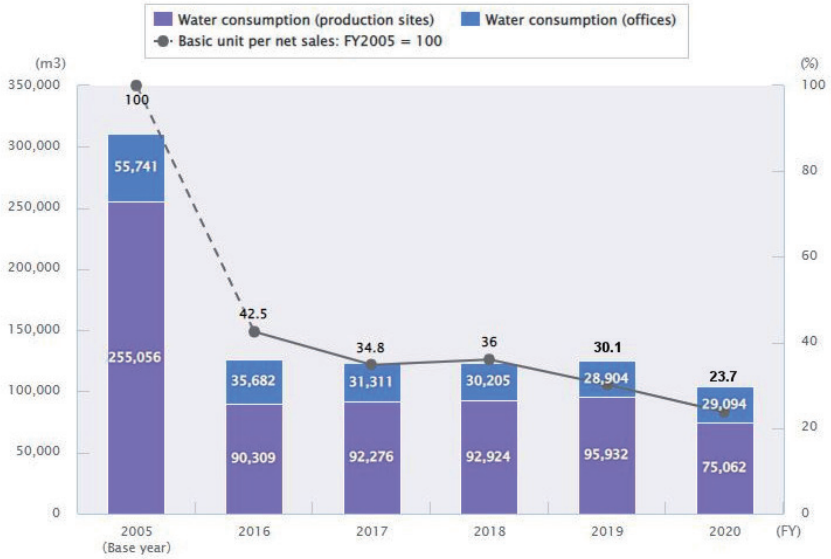


Reduction of Water Consumption

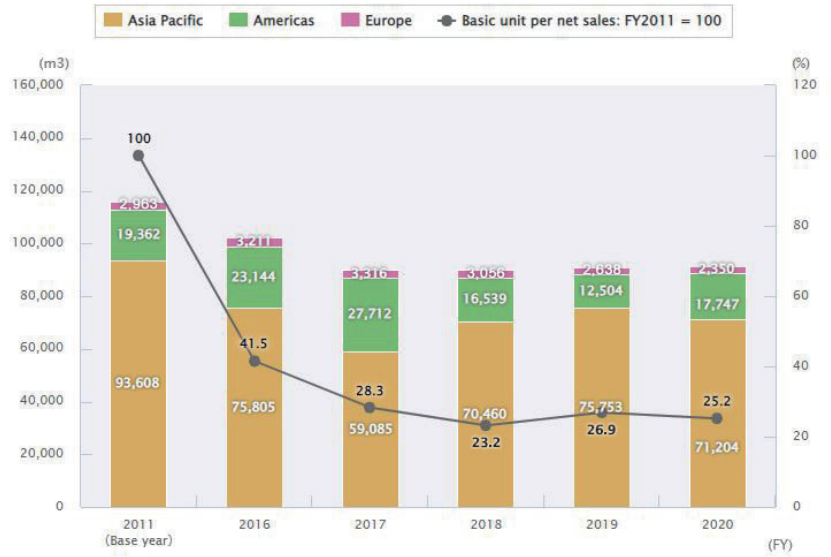
KPI

At production bases that account for approximately 80% of the entire Group's water consumption, in particular we reviewed the painting process in production lines (from powder coating to plating) and developed water-saving car wash machines, among other measures. As a result, we were able to reduce water consumption for fiscal 2020 by 23.7%, which greatly exceeded the Group-wide target (57% or less compared to the fiscal 2005 amount of basic unit per sales).

Water consumption (Japan)



Water consumption (outside of Japan)



Resource Saving

Ensuring appropriate waste disposal

Site reviews conducted by Daifuku's employees

Waste generated by business activities is processed appropriately in accordance with laws and regulations. Even when waste processing is outsourced to a subcontractor, meaning that the outsourcing operator takes responsibility for proper processing, Daifuku carefully chooses the best outsourcing companies and visits their facilities annually to ensure that waste is handled properly.

Minimizing waste and recycling

Collection of cooking oil waste from employee cafeterias

At the Shiga Works site, we are collecting cooking oil from the three on-site cafeterias and employees' homes, and converting it into biodiesel. We then use this biodiesel as fuel for the Hini Arata Kan shuttle bus.

Efforts to reduce plastic waste

Water dispenser and stainless-steel water flask

In July 2019, Webb Canada set a goal of reducing plastic waste by discontinuing beverages in plastic bottles. To achieve this, the company's factory in Hamilton introduced a sensor-controlled water dispenser and distributed stainless-steel water flasks to all employees.

Pollutant Reduction

Chemical Substances Management

Complying with PRTR Law

Paints and organic solvents are the primary chemical substances used by Daifuku in its production facilities. The Company manages and controls the usage amounts of special chemical substances on-site as designated under the PRTR Law.*

Glossary

* PRTR (Pollutant Release and Transfer Register) Law: A law that requires enterprises to submit a report to their national governing authority specifying the number and volume of chemical substances they are releasing into the environment. This is aimed at voluntary management of chemical substances and the prevention of environmental pollution.

Emission and transfer volume of chemical substances related to PRTR Law

Shiga Works

	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
Emission and transfer (kg)	30,010	18,969	27,223	23,765	18,531	16,880

Amount of PRTR-related chemical substances handled in FY2020

Shiga Works (kg)

Control No.	Chemicals	Transaction Volume	Emission to					Transfer to		
			Air	Public water	Soil	Land	Total emissions	Sewage	Misc	Total transfer
37	Bisphenol A	1,208.70	0	0	0	0	0	0	24.17	24.17
53	Ethylbenzene	3,938.65	3,938.65	0	0	0	3,938.65	0	0	0
80	Xylene	5,140.67	5,140.67	0	0	0	5,140.67	0	0	0
296	1,2,4-Trimethylbenzene	412.36	412.36	0	0	0	412.36	0	0	0
297	1,3,5-Trimethylbenzene	139.77	139.77	0	0	0	139.77	0	0	0
300	Toluene	7,194.19	7,194.19	0	0	0	7,194.19	0	0	0

(Note) Chemical substances of which less than 100 kg is handled are omitted as the amounts are negligible.

Preventing Water Pollution

The Shiga Works, which accounts for approximately 80% of Daifuku's water consumption in Japan, maintains a 24-hour continuous monitoring system with three wastewater treatment facilities that ensure water quality on par with agricultural water by thoroughly complying with drainage standards established by the Shiga Prefecture Ordinance and Pollution Control Agreement with Hino Town. In addition, we invite neighboring residents and provide opportunities to visit our wastewater treatment facilities and see our thorough water quality management systems, which facilitates good relationships with stakeholders.

Water quality survey

We recognize that water pollution is an important issue that broadly affects soil, agricultural produce, living environments, and more. We not only comply with laws and regulations, but also make meticulous efforts to manage and reduce waste water.

Result of final effluent quality measurements in FY2020

Shiga Works (in accordance with the Water Pollution Prevention Act, prefectural ordinances, and the Hino Town pollution control agreement)

Measurement item	Regulation value	Results		
		Max	Min	Avg
Amount of drainage (m^3/day)	-	398.5	27.7	262.6
pH	6.0 to 8.5	7.4	6.9	7.1
SS (mg/ℓ)	20 or less	2.6	0.5	1.1
COD (mg/ℓ)	20 or less	1.7	0.1	0.6
BOD (mg/ℓ)	20 or less	2.0	0.1	1.6
Total phosphorus (mg/ℓ)	1 or less	0.1	0.1	0.1
Total nitrogen (mg/ℓ)	10 or less	0.9	0.5	0.6

(Note) The average value is the weighted average.

Effluent treatment facilities

Effluent before (left) and after (right) treatment

Recycling sludge into cement materials

At the Shiga Works' wastewater treatment facility, it is necessary to treat the sludge produced to maintain stable water treatment. The dewatered sludge withdrawn from the facility is treated using a dryer and is turned into dried sludge with 20% water content. This has led to a large reduction in excess sludge as well as a reduction in waste treatment cost. Furthermore, dried sludge is put to good use as a raw material for cement.

Sludge recycling facility

Dried sludge

Air Pollution Prevention

Based on Ordinance 25, Clause 1 of the Ordinance Concerning the Reduction of Impact on the Air Environment of Shiga Prefecture, the Shiga Works is designated as a "place of business subject to a plan to reduce its environmental impact on the air." We are striving to control and reduce smoke-related air pollutants.

Result of final air pollutant measurements in FY2020

Shiga Works (according to the Hino Town environmental pollution control agreement)

Material	Facility	Regulation value	Results		
			Max	Min	Avg
Dust (g/m^{3}N)	Dynamos	0.1	0.009	0.005	0.007
Sulfur oxide (SOx) (m^{3}N/h)	Dynamos	2.3	0.080	0.010	0.047
Nitrogen oxide (NOx) (ppm)	Dynamos	950	830	700	762

Green Procurement

Implementation of Green Procurement Guidelines

As a global enterprise, we believe that our mission is to make environmentally friendly products. Under the motto, "We will not buy, use, or sell any hazardous materials," we formulated our Green Procurement Guidelines in 2005. Following the guidelines, we prioritize the purchase of materials and products that are resource saving, energy saving and reusable.

Compliance with European harmful substance regulations

The entire Daifuku Group focuses on the European REACH regulations.*, and goes to great lengths to visualize and remove any harmful chemicals in its products. The Company continues to offer environmentally friendly products through implementation of Green Procurement Guidelines by looking at its entire supply chain.

* REACH (Registration, Evaluation, Authorization, and Restriction of Chemicals) Regulations: Companies must register and evaluate the safety of chemical substances contained in the products they manufacture and sell in Europe.

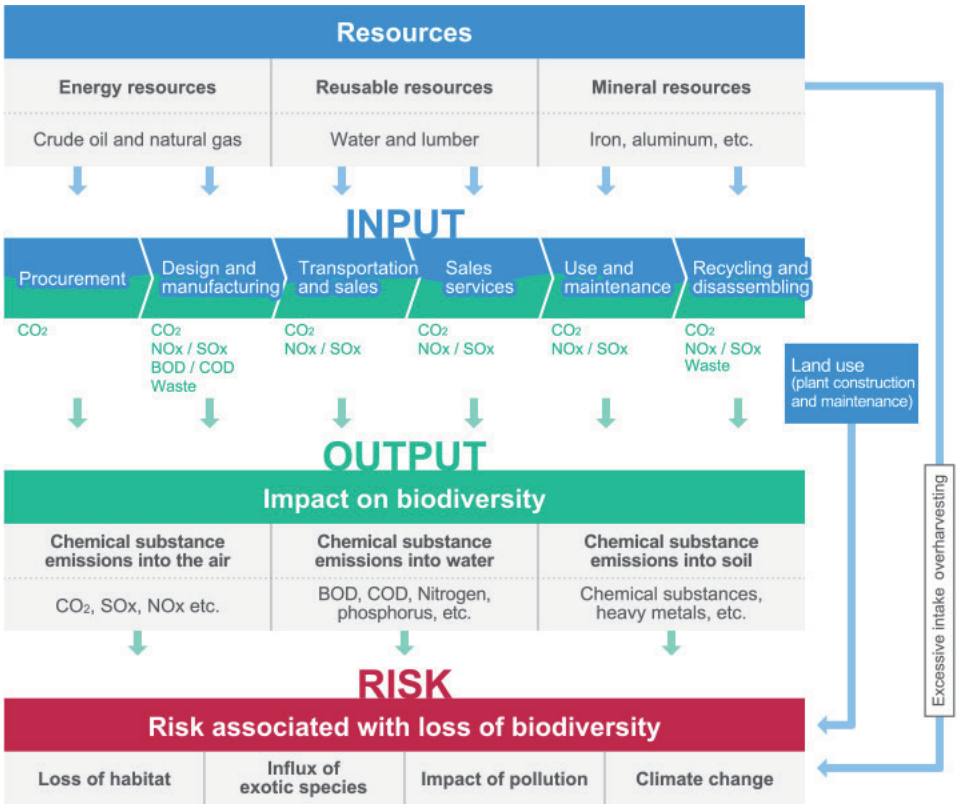
Local production for local consumption at cafeterias

Since August 2014, a menu using local ingredients is provided every week at the three cafeterias in the Shiga Works. Plenty of variety is provided, such as the renowned locally produced Hinona turnips and highly nutritious and richly flavored eggs from Eigen-ji. This initiative will continue on as an activity in reducing food mileage, to reduce the amount of CO_2 emissions that comes from transport.

Biodiversity Preservation

Relationship between Daifuku and Biodiversity

In order to clarify the relationship between business activities and ecosystems, Daifuku has mapped the interaction of product processes, land use, and other ecosystem aspects. Based on this map, Daifuku notes the impact on ecosystems by the land use at the Shiga Works, which is endowed with nature, and is conducting business activities that take biodiversity into account.



Conservation Activities at Shiga Works

In terms of site area, the Shiga Works is one of the largest land users in Shiga Prefecture. A survey of ecosystems within Shiga Works confirmed more than 700 native species, and over 50 rare and endangered species. In order to preserve this precious natural environment for subsequent generations, we have established a biodiversity preservation activity called the "Yui Project" to promote communication both within and outside the company, and we are pursuing various conservation initiatives.

Results of Ecosystems Survey (rare and endangered species)

Classification	Species	Type
Birds	Falcated duck, little grebe, little ringed plover, Eurasian sparrowhawk, buzzard, red-rumped swallow, olive-backed pipit, Eurasian bullfinch, peregrine falcon, etc.	27
Amphibians	Clouded salamander, Japanese brown frog, leopard frog, schlegel's green tree frog	4
Reptiles and mammals	Japanese pond turtle, harvest mouse	2
Insects	Asiagomphus pryeri (dragonfly), trigomphus interruptus (dragonfly), trigomphus ogumai (dragonfly), epitheca marginata (dragonfly), spring cicada, polyrhachis lamellidens, gynacantha japonica, libellula quadrimaculata asahinai, sympetrum baccha matutinum, hydrochara affinis, Yellow Dater dragonfly	11
Fish	Gin-buna, dark sleeper	2
Plants	Stalked adder's tongue fern, early amythesy (beautyberry), yellow bladderwort, platycodon, atractylodes japonica, agrostis valvata, golden orchid	7
Total		53

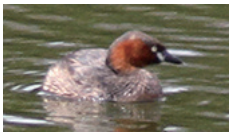
Peregrine falcon

Clouded salamander

Japanese pond turtle

Trigomphus ogumai

Golden orchid



Little grebe

Spring cicada (shell)

Eurasian bullfinch

Yui no Mori

As part of a biodiversity preservation activity called the Yui Project*, which started at Shiga Works in 2014, we set up the Yui no Mori (Mori = forest; comprised of a conservation pond, learning square, etc.). We engaged in biodiversity conservation activities for a region-specific red pine forest, the rare clouded salamanders and other species. The project also serves as a learning environment inside and outside the company.

* Yui Project: Yui means to "bring together," and the project refers to various activities to bring together "water with greenery, people with nature, and people to people."

Creating opportunities for interacting with nature

At the Shiga Works, we hold nature observation events with experts, so that employees have opportunities to interact with the many plants and animals that inhabit the surrounding area, as well as Christmas wreath-making and moss ball making events using natural materials at the Works. These events were cancelled in fiscal 2020 to prevent the spread of COVID-19.

Initiatives Outside the Company

Participating in the Shiga Green-activity Network's biodiversity and CSR research association

Seminar

Daifuku is a founding member of a research association established in 2015 that looks into biodiversity, the environment and CSR. The association, which was formed as part of the Shiga Green-activity Network, of which Daifuku is also a member, plans and holds seminars and other events for members intended to facilitate learning about biodiversity, create opportunities to learn about the latest CSR trends centered on the field of biodiversity, and encourage communication between association members.

Participating in the Biodiversity Biwako Network's dragonfly conservation efforts through corporate collaboration

Planning exhibit (Lake Biwa Museum)

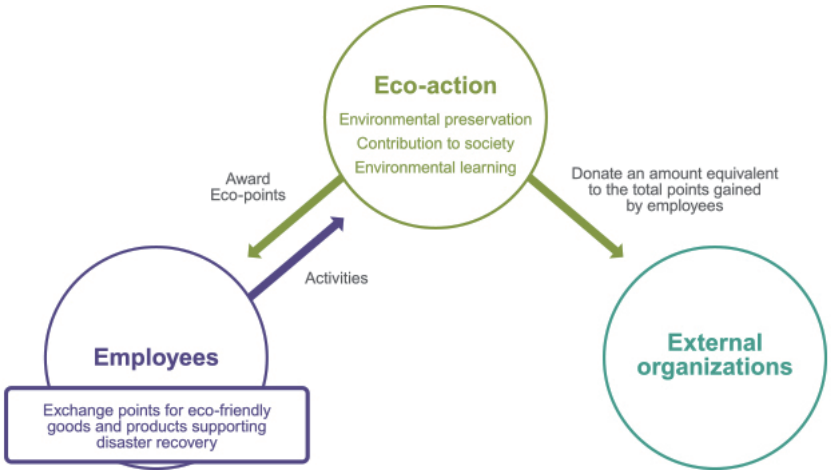
In 2016, the eight neighboring companies* of the Shiga Works launched the Biodiversity Biwako Network, which is engaged in biodiversity conservation activities using the 100 dragonfly species confirmed in the prefecture as indicators. The project, entitled Operation Dragonfly 100: Save Shiga's Dragonflies, has three strategies: search for the 100 dragonfly species in Shiga Prefecture, protect them, and educate the public about them. We are also engaged in regular monitoring at the company site, maintenance of biotopes and extermination of invasive alien species, nature observation meetings, exhibitions and presentations of our activities, as well as understanding of the current state of nature in the surrounding area.

* Asahi Kasei Corporation, Asahi Kasei Juko Co., Ltd., OMRON Corporation, Sekisui Chemical Co., Ltd., Sekisui Jushi Corporation, Daihatsu Motor Co., Ltd., Yanmar Holdings, Inc., and Daifuku Co., Ltd.

Eco-Management Structure

Daifuku Eco-Action Program

In 2012, Daifuku established its Eco-Action program, which rewards eco-points for environmental activities undertaken by employees in a bid to foster an environmental mindset. With a variety of ecological activities available in each region, we reached a cumulative total of 7,122 participants across multiple volunteer activities and environmental learning events.
Eco-points gained by employees can be exchanged for green goods and other rewards. In addition, we donate an amount equivalent to the total points gained by them to external organizations.



Eco-Action events (examples)

Program	Content / Description	FY2020 Total number of participants
Eco Field Report	Learn about the environment through experiences at nature parks, zoos, museums, environmental facilities, etc.	247 people
Eco Quiz	Eco Quiz published in the in-house newsletter. Disseminate information about the environment and deepen the understanding of this topic	2,773 people
Environment oriented household account book	Allows entering data about usage of electricity and water etc. for visualization to raise awareness of energy conservation	112 people
Lake Biwa reed cutting activity	Participate in a conservation cycle event to protect the reeds and encourage water purification of Lake Biwa	—
Non-native species fishing tournament	Participate in efforts to reduce breeding of non-native fish, in order to protect the ecosystem of Lake Biwa	—
Water spraying event	Participate in a water-spraying event together with other organizations and businesses to counter the heat island effect in urban areas	—

Change in number of participants

KPI

Following on from last year's event, we implemented a plan to boost the mindset of our employees, however, since the event was cancelled to prevent of the spread of COVID-19, we fell short of our target of 8,000 employees with only 7,122 employees.

Fiscal year	2018	2019	2020	
			Target	Result
Total number of participants (cumulative)	6,458 people	13,403 people	8,000 people	7,122 people

Donations

In fiscal 2020, Daifuku is planning to make the following donations as a part of the Daifuku Eco-Action Program, which is an employee participation-style environmental initiative.

Donation target	Amount	Content
(Continued) 9th year Shiga Prefectural Lake Biwa Museum	1,000,000 yen (previous year: 1,000,000 yen)	Museum Renewal Operating Cost
(Continued) 8th year Hini Arata Kan carbon offset	460,000 yen (previous year: 530,000 yen)	Offset through contributions to the regional reduction framework of amounts equal to CO_2 emissions generated from operating the Hini Arata Kan and associated with visitor movements there
(Continued) 7th year United Nations Decade on Biodiversity Japan Committee	1,200,000 yen (previous year: 1,200,000 yen)	Various initiatives to raise mainstream public awareness of biodiversity preservation
(Continued) 3rd year Shiga Green-activity Network	150,000 yen (previous year: 200,000 yen)	Holding education and awareness seminars and events to promote reducing the environmental impact
(Continued) 2nd year The Nature Conservation Society of Japan	200,000 yen (previous year: 200,000 yen)	Various projects to facilitate education and awareness of, and investigative research on nature conservation
(New) Decarbonization Challenge Cup Executive Committee	100,000 yen	The purpose of the conference is to share information and promote activities by soliciting and providing a forum for presentations on preventing Global Warming.

D-EMS (Daifuku Eco-Management System)

KPI

In January 2017, we launched the Daifuku Eco-Management system (D-EMS), which enables the timely assessment of global environmental data and effective environmental impact reduction. We receive monthly reports of environmental information from our various sites (including non-Japan subsidiaries), and we collect, aggregate and analyze this environmental data to help us achieve our environmental targets. The company-wide deployment rate for fiscal 2020 was 96.3%; we were unable to meet the target of 100% due to not achieving full awareness at our non-Japan subsidiaries. By sharing the measures being taken in the Sustainability Committee, we will continue to focus on assessing and understanding global environmental data.