ENVIRONMENTAL INITIATIVES Environmental Activity Report

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Key Issues in the 6th Medium Plan

Environmental Targets (Med Accomplishment

Environmental Management

Global Warming Prevention

Recycling-Oriented Society A

Chemical Management Activ

Non-financial Data List

Social Contribution Activities

Environmental load Data ...





n-Term Environmental 	
ium-Term Plan) and	
System 5	
Activities6	
Activities9	
vities 10	
11	
5 / Commendations 14	

Sumitomo Heavy Industries Group Key Issues in the 6th Medium-Term Sumitomo Heavy Industries **Environmental Plan** Group

Locking our sights on the global market to develop growth strategies, the Sumitomo Heavy Industries Group is committed to promoting the 6th Medium-Term Environmental Plan (From FY2020 to 2023*) since FY 2020. With a focus on the following four key issues in the 6th Medium-Term Environmental Plan, we have been working on reducing total CO₂ emissions during our product manufacturing processes to help mitigate climate change, as well as expanding our range of Sustainability Plus Products (reduced CO₂ emissions in product use) as a part of our overall CO₂ emission-cutting activities.

By preparing educational posters for personnel within the Group, we intend to ensure good understanding of the content of these activities through sharing the key issues.

*The activities will continue until FY2023 in line with "Medium-Term Environmental Plan 2023."

(1) Strengthen environmental risk management

We will strive to prevent environmental incidents and continuously improve and invigorate our environmental management system.

(2) Reduce CO₂ emissions with a consciousness of response to climate change

Among the "environmental loads in the product life cycle", we will endeavor to reduce CO₂ emissions during both product manufacturing and use, which comprise some of the highest environmental loads (in particular, response to climate change).

(3) Reduce the environmental loads of business activities

Among the "environmental loads in the product life cycle", we will work on "reduction of environmental loads" associated with business activities other than "CO2 emissions" such as contribution to the issue of plastics in the seas and oceans and 3Rs for waste and product packing materials.

(4) Conservation of biodiversity

We will strive to help preserve biodiversity via social contribution that focuses on Sustainability Plus Products.

As a specific target, we will continuously endeavor to cut total CO₂ emissions by 1% per year compared to FY 2019.

Benchmark	Item	Base year	Target
Environmental manage-	Zaraization of an ironmental incidents (In Japan (Querseas))	-	Zeroization of serious environmental incidents
ment	Zeroization of environmental incidents (in Japan/Overseas)	-	No more than 3 environmental incidents
Response to climate	Reduction of (total) CO ₂ emissions (in Japan)	2019	Reduction by 1%/year
change	Improvement of energy productivity during manufacturing (in Japan)		Improvement by 1%/year
(global warming pre-	Improvement of energy productivity during manufacturing (Overseas)	2019	Improvement by 1%/year
vention)	Promotion of green logistics during transportation (in Japan)		Maintained FY2019's level
Environmentally friendly	, CO ₂ emission reduction during product use	2011	Increase of product quantity and amount contributed to reduction
products	Evennsion of Custoinability Dlug Draduste		Number of registered products: No fewer than 23
	Expansion of Sustainability Plus Products		Proportion of sales: No less than 30%
Biodiversity	Promotion of activities to help resolve the problem of plastics in the seas and oceans		Promotion of activities by setting qualitative (quantitative) targets for individual departments
	Reduction of waste generation (in Japan)	Average of period from 2017 to 2019	Maintenance of average value per basic unit of sales during the period from 2017 to 2019
	Reduction of waste generation (Overseas)	2019	Reduction by 1% per basic unit of sales
Promotion of recycling	Continued zero emissions (in Japan)		Less than 0.5% of landfill rate
to conserve resources (Circular economy)	Reduction of water consumption (in Japan)	Average of period from 2017 to 2019	Maintenance of average value during the period from 2017 to 2019
	Reduction of water consumption (Overseas)	2019	Maintained FY2019's level
	Reduction of product (including parts) packing materials (in Japan)	Average of period from 2017 to 2019	Maintenance of average value per basic unit of sales during the period from 2017 to 2019
Promotion of prevent-	Control of emissions of substances subject to VOC (air pollutants) (in Japan)	2019	Maintained FY2019's level
ing environmental pol- lution	Control of emissions of substances subject to VOC (air pollutants) (Overseas)	2019	Reduction by 1%/year



CO₂ emission reduction throughout the entire product life cycle and the amount contributed to CO₂ emission reduction in product use

Segme

Of the CO₂ emissions in the entire product life cycle in FY 2020, CO₂ emissions during product use amounted 135.254 million tons - an amount high enough to comprise 99.5% of the entire emissions. On the other hand, of the 44.865 million tons in total contributed to CO2 emissions reduction achieved by main products delivered during FY 2020, which corresponds to an effect of reducing CO₂ emissions during product use, 98% was shared by the Energy & Lifeline segment. We are promoting these activities by recognizing improvements in contribution levels as well as developing technology developments as important business strategies to mitigate climate change, not only in the Energy & Lifeline segment but also in other product segments.

Mechatron Industria chinery Logistics 8 struction Energy & Total



FY 2020 - 2023* Total CO₂ emission reduction considering response to the climate change

(During manufacturing and use of products)

6th Medium-Term Environmental Plan



2025

Excellent

Eco

Factory

(Unit: 10.000 t-CO₂) Amount contributed to CO₂ reduction through products (Main products delivered during FY 2020)

nt	reducing CO ₂ emissions in the product life cycle (based on design stan- dard)	Basis for calculation	Products
iics	31.6	Enhancement of energy savings and efficien- cy based on model changes	Transmission and reduc- tion gears, motors
ma-	21.0	Enhancement of energy savings and efficiency based on model changes	Plastic injection molders, precision vacuum pumps
Con-	36.0	Fuel-efficiency improvement, use of regener- ative energy, and efficiency enhancements based on model changes	Hydraulic excavators, fork- lifts
Life-	4,398.0	Enhanced reduction & efficiency using bio- mass, improved fuel efficiency and propul- sion performance based on model changes	CFB boilers, Aframax tank- ers, stirring machines
	4,486.5		

Environmental Targets (Medium-Term Plan) and Accomplishment

General Overview of Activities in FY2020

Achieved 9 out of 17 targets

The achievement statuses of targets and activities in FY2020 and in the 6th Medium-Term Environmental Plan are as follows.

• Environmental incidents: There was a significant shortfall in the goal for the initial year of the 6th Medium-Term Environmental Plan because a serious environmental incident occurred, along with other six other minor incidents in FY2020. We provide education and information to employees about managing liquid leaks, especially oil, wastewater management, and inadequate notification. Water quality is monitored as part of water quality management by installing effluent processing equipment at each Works in order to monitor the quality of wastewater discharged into public waterways. We constantly review how to deal with aging equipment, such as including it in capital investment plan.

• Total CO₂ emissions: Even though the target was achieved, our analysis has revealed it virtually insufficient because it largely depended on reductions in manufacturing volumes under the impact of the coronavirus pandemic. We will work on introducing renewable energy and develop an aggressive equipment renewal plan.

• Energy productivity: As mentioned above, the goal was not achieved due to the effect of higher fixed electric power consumption associated with installation of a clean room and expansion of airconditioning equipment, in addition to reduced sales, even though total CO₂ emissions fell. While these measures are indispensable for carrying out business, such as improving work environments and assuring quality, reductions through operations management seems to be reaching its limit. Therefore, we will consider measures such as capital investment plans for this point as well.

• Green logistics: The target was not achieved due to the effect of increased shipping distances arising from a higher domestic delivery ratio. We continue to move ahead with CO₂ emission reductions during transportation by taking measures such as modal shift and improvement of loading ratio.

 Waste: This target was not achieved owing to lower sales and unexpected one-time disposal of scrap. We are pushing forward with waste reduction by scheduled disposal of disused articles and sorting of waste and recyclable items at all points.

Benchmark	ltem	Basic year	Target for FY2020	Accomplishment in FY2020	Evaluation for FY2020
For design and all and a second second	Serious environmental incidents	_	0	1 case	×
Environmental management	Environmental incidents	—	No more than 3 cases	6 cases	×
	Total CO ₂ emissions (in Japan)	FY2019	Reduced by 1% compared to FY2019	Reduced by 4.1%	0
Despense to climate change	During manufacturing / Energy productivity (in Japan)	FY2019	Improved by 1% com- pared to FY2019	Reduced by 0.049%	×
Response to climate change	During manufacturing / Energy productivity (Over- seas)	FY2019	Improved by 1% com- pared to FY2019	Reduced by 11.4%	×
	During transportation / Green logistics (in Japan)	FY2019	Maintained the FY2019 level	Increased by 6.8%	×
	Reduction of waste generation per basic unit (in Japan)	FY2017 to 2019	Maintained the average level during the period from 2017 to 2019	Increased by 5.6%	×
	Reduction of waste generation per basic unit (Over- seas)	FY2019	Reduced by 1% compared to FY2019	Increased by 5.2%	×
	Zero-emission waste landfill rate (in Japan)	—	Less than 0.5%	0.052%	0
Promotion of recycling to conserve resources	Reduction of product packing materials (Per basic unit in Japan)	FY2017 to 2019	Maintained the average level during the period from 2017 to 2019	Reduced by 4.2%	0
	Reduction of water consumption (in Japan)	FY2017 to 2019	Maintained the average level during the period from 2017 to 2019	Reduced by 1.2%	0
	Reduction of water consumption per basic unit (Overseas)	FY2019	Maintained the FY2019 level	Increased by 5.9%	×
Prevention of environmental	VOC reduction (in Japan)	FY2019	Maintained the FY2019 level	Reduced by 9.4%	0
pollution	VOC reduction (Per basic unit in Japan)	FY2019	Maintained the FY2019 level	Reduced by 7.9%	0
	Expansion of "Sustainability Plus Products"	FY2009	Number of products: No fewer than 23	33 cases	0
Environmentally friendly products	Proportion of sales that comprised "Sustainability Plus Product" candidate products	FY2009	Proportion of sales: No less than 42%	46%	0
	Proportion of sales that comprises "Sustainability Plus Products"	FY2009	Proportion of sales: No	34.0%	0

Evaluation: O Achieved riangle Achievement rate of 90% or higher imes Achievement rate of less than 90%





Steam turbine









*1 PRTR: Pollutant Release and Transfer Register *2 VOC: Volatile Organic Compounds



Crawler crane [SCX550-3]

Environmental Management System

Sumitomo Heavy Industries Group Environmental Policy

Revision of the Environmental Policy

Sumitomo Heavy Industries Group revised its Environmental Policy in December 2021, with the intention to work further on "Environmental load reduction across all business activities, including the entire product life cycle" as a countermeasure to mitigate pressing issues such as climate change.

Basic Concept of the Environmental Policy

Recognizing that acting on global-scale environmental conservation and climate change problems is crucial, the Sumitomo Heavy Industries Group is striving to reduce our environmental loads in all business activities, including the entire product life cycle, based on our fundamental sustainability policy.

Environmental Policy

- 1. Strive to prevent environmental pollution while working to conserve the global environment.
- 2. Work on activities to reduce our environmental burden, such as reduction of CO₂ emissions and wastes, reuse and recycle of resources, and efficient use of energy, with the aim of achieving a decarbonized / recycling-oriented society.
- 3. Make efforts to preserve biodiversity, considering impacts on nature and ecosystems associated with our business activities.
- 4. Operate and improve the environmental management system on a continuing manner by enhancing the environmental management structure.
- 5. In addition to compliance with environment relevant laws and regulations, operate and evaluate voluntary standards established as required.
- 6. Pursue improvement of environmental awareness among all staff members involved in our business activities through ongoing environmental education and enlightenment activities.
- 7. Share the Environmental Policy with all stakeholders and make it public.

Sumitomo Heavy Industries, Ltd. December 1, 2021

Environmental Management System

Environmental activity management for our entire Group takes place under the leadership of the General Manager of the Administration and Environmental Management Division, supervised by a director in charge of general affairs designated by the President. The Sumitomo Heavy Industries Group's Environmental Policy is approved and determined by the President in the capacity of CEO.

Environmental management audits are conducted



to check the management status against the local situation at each manufacturing site, including affiliated companies. Reported results of activities and problems are shared at the environmental management meetings. The SHI Group's Environmental Policy, targets and initiatives have been well recognized by employees through environmental education.

<Details of Activities>

• Environmental management audits (annual)

Audits are performed on manufacturing bases in Japan as well as China and Southeast Asia to assess overall environmental management from perspectives of environmental incident prevention, compliance with laws and regulations, and global warming prevention. To improve the level of environmental management, the audit results are evaluated on a five-point scale for each department based on our own evaluation criteria. The results are reported at executive meetings.

• General Manager of the Administration Division's Diagnosis (As required)

General Manager of the Administration Division conducts and provides guidance on the General Manager of the Administration Division's Diagnosis together with environmental management audits for departments that the General Manager considers it necessary (those that experienced environmental incident(s) in the previous fiscal year, and those that performance was far below their environmental targets).

• Environmental management meeting (biannual)

"Environmental management meetings" take place for individual domestic works and affiliated companies to report activities results and share problems. A Chinese environmental management meeting is also held for affiliated companies in China, with the aim of improving the level of environmental activities performed by each company.

Global Warming Prevention Activities

The SHI Group has been working on reducing CO₂ emissions as the primary issue among our strategies to cut back on our environmental load across all business activities, including the entire product life cycle.

Promotion of Environmental Management

Promotion of full-participation efforts

Recognizing that activities to prevent global warming form a part of environmental management, results in each of the SHI Group's business divisions are managed monthly by Environmental Management Department and fed back to the people in charge of relevant business operations. The results are also reported to management three times a year at executing meetings.

Each of the SHI Group's divisions works on "fullparticipation" projects and "visualization" activities, as well as various process improvement initiatives, to further improve efficient energy use to promote global warming prevention activities.

Reduction of CO₂ Emissions Emissions have fallen due to the effect of the coronavirus pandemic.

CO₂ emissions from the entire SHI Group in FY 2020 declined by 4.1% compared to FY 2019. Even though we achieved the target, the outcome was essentially moot because it was largely assisted by the decrease in production volume resulting from the coronavirus pandemic. The target was further impacted by planned ongoing projects that may become factors which increase electric power consumption (constant-temperature room, clean room, commissioning, etc.) associated with research and development that ensures product quality, as well as air-conditioning to prevent heatstroke in workers. We will endeavor to introduce renewable energy and develop aggressive equipment renewal plans.



* Used a Japan conversion factor of 0.462 g-CO₂/kWh as a fixed value.



* Calculated using location-based CO₂ emission factor of 0.462 g-CO₂/kWh.

Activities to Introduce Renewable Energy Promotion of activities to introduce renewable energy

The SHI Group has been promoting introduction of renewable energy such as photovoltaic power generation in order to reduce CO_2 emissions. PPAtype photovoltaic generation equipment has been introduced for the first time in the SHI Group at the PTC No. 2 Plant, which opened at the Nagoya Works in 2020. It provides 50% of the power consumed by the plant. It has increased the ratio of renewable energy use to the entire SHI Group's total electric power consumption to 0.15%, up from 0.04%. With the aim of achieving carbon neutrality in 2050, we are pushing forward with measures to cut CO_2 emissions mainly by making efforts on introduction of photovoltaic generation facilities at new buildings.



Full view of PTC No.2 plant



Installation status of photovoltaic panels at PTC No. 2 plant

Global Warming Prevention Activities

Improvements in Energy Productivity

Targets were achieved neither in Japan nor overseas.

In relation to production activities accounting for a majority of CO₂ emissions in SHI Group, monthly management and operation of each BU (business unit) is carried out based on energy productivity (sales/ CO₂ emissions: Inverse of basic unit). As a result of activities in FY2020, when there was a target of 1% improvement compared to FY2019, the target was not achieved at the main domestic manufacturing sites. The actual result was a 0.049% decrease affected by lower sales associated with reduced production stemming from the coronavirus pandemic.

At overseas production bases as well, we promoted activities to reach the 1% improvement target compared to FY2019, but in FY 2020 fell short of the target by 11.4%.

We will continue to promote the following measures.

- Setting up and practicing of non-operating days
- **2** Reducing standby power of equipment or facilities
- Operating equipment and facilities more efficiently Outting energy consumption by reducing
- production lead time



Promotion of Green Logistics

Promotion of loading-ratio improvement as well as effective use of modal shift and consolidated cargo

We have been working on reducing CO₂ emissions by eliminating wastes and streamlining logistics. Even though activities such as load factor improvement, modal shift, and effective use of modal mixes were continued in FY 2020 to maintain a level no greater than that in FY 2019 per basic unit of shipping (t-CO₂/weight), the target was not achieved, resulting in an increase by 6.8%. However, work on these activities—including promotion of modal shift and load factor improvement based on scheduled production continues apace.



Amount contributed to CO₂ reduction during use of SHI Group products by customers

Calculation of amount contributed to reducing CO₂ during use of SHI products

Under the 6th Medium-Term Environmental Plan, amount contributed to reducing CO₂ emissions during product use is calculated for each business division, and the result is disclosed. Amount contributed to reducing CO₂ emissions during use of products sold in FY 2020 was 44.865 million tons - CO₂. 98% of the amount is shared by the Energy & Lifeline segment, and amounts to about 485 times the total CO₂ emissions during manufacturing in the SHI Group. We promote these activities based on the recognition that raising the amount contributed as well as technological developments not only in the Energy & Lifeline segment, but also in other segments, are important business problems to resolve in light of climate change.



Sustainability Plus Products

Shift from Environment Friendly Products to Sustainability Plus Products

To date, the SHI Group has been certifying Environment Friendly Products using our unique evaluation scheme. With the aim of improving product competitiveness, we replaced the term Environment Friendly Products with Sustainability Plus Products from FY2021. This is to highlight the environmental performance (resource circulation, capability to mitigate global warming and environmental risk) and sociality of our sustainable products to the market and publicize the SHI Group's CSV^{*} endeavors. *CSV: Creating Shared Value

In addition to existing evaluation items to improve recycling at the time of disposal for resource circulation, such as simplifying sorting processes and implementing easy-to-recycle design, "sociality (automatization, laborsaving)" and "sociality (safety measures)" were added to the items in FY2019 and 2020, respectively. Furthermore, Sustainability Plus Products are evaluated using scores

Evaluation items

		Droduct status	Improvement of product quality to first-class level				
		Product status	Differentiation				
		1. Resource saving	Environment	Environmental risk	8. Environmental conservation		
	Resource circulation	2. Improvement of recycling at the time of disposal (Simplification of sorting processes)		Others	9. LCA (Life cycle assessment)		
		3. Extension of service life					
wironment		4. Packaging / Packing			10. Safety		
		5. Information provision 11.			11. Labor-saving		
		6. Resource-saving measures during product use	Society	-	12. Reduction of rare elements, rare metals		
	Global Warming	7. Energy-saving measures during use			and conflict minerals (Expected to be added in FY2021)		

As a result of certification in FY2020, 5 and 28 models have been certified as Super Sustainability Products (score of 90 or higher) and Sustainability Plus Products, respectively, showing year-by-year increases in the entry number in each segment. Sustainability Plus Products account for 34% of sales across the entire SHI Group, a 126% increase compared to FY2019. In case of Sustainability Plus Products, we have EOL manuals in place for equipment disposal and provide them to clients

List of typical models of Sustainability Plus Products

			Evaluation items				
Segment	Product name	Registration category		Environment		Society	
			Resource circulation	Global Warming Countermeasures	Environmental risk	Automatization / Labor-saving	
Mechatronics	High-Efficiency Motor: IE3 Motor (New model)	Sustainability Plus Products		O	O		
	Electric Injection Molding Machine SE-EV series	Sustainability Plus Products		0	O	0	
Industrial machinery	Forging Servo Press (FPS)	Sustainability Plus Products	0	O	O		
	Bag Filter Dust Collector Ecopulser	Sustainability Plus Products		O	0	0	
	Ion Implanter S-UHE14	Sustainability Plus Products		O	O	0	
	Rolling Roll (SIP Ductile)	Sustainability Plus Products	0	O	O	—	
	Reach-type Electric Vehicle	Sustainability Plus Products		O	O	\bigtriangleup	
Logistics & Construction	Hydraulic Excavator LEGEST model 7	Super Sustainability Plus Product		O	O	0	
	Crawler Crane SCX, HSL, HLX	Sustainability Plus Products		O	O	O	
	Biomass Boiler	Super Sustainability Plus Product		0	O		
	Vertical Split-type Distillation Column (DWC)	Sustainability Plus Products		O			
Energy & Lifeline	Sand-lifting Device SUMIJETTER	Super Sustainability Plus Product	0	O	0		
	Steam Turbine (Long-blade high-efficiency machine, etc.)	Sustainability Plus Products	0	0			
	Functional Tank	Sustainability Plus Products		O	O		

* The list of Sustainability Plus Products in FY2020 is posted on our Website.





Cryo Pump [SICERA® Ultra]

Biomass power station (Kanda Biomass Energy Co., Ltd.)

for the 11 items in total, allowing for additional scores depending on external commendations.

As consideration of items to be added about "sociality (reduction of rare elements, rare metals, and conflict mineral substances)" is underway, we have decided to put sustainable products into the market from now on to further help to solve social problems.

in order to reduce environmental loads through the entire product life cycle. Equipping our construction machines, such as power excavators and cranes, with a field-of-view monitor has improved safety for surrounding workers. In the medical device development/ manufacturing divisions, collaborative research on therapeutic methods and drugs have taken place with external institutions such as healthcare facilities and universities.





Boron-neutron capture therapy (BNCT) system

Recycling-Oriented Society Activities

We have been striving to minimize waste substances discharged through business activities and boost recycling and effective resource use.

Efforts to Reduce Environmental Loads

Building a recycling-oriented society

To build a recycling-oriented society. SHI Group has been endeavoring to reduce environmental loads through our business activities while working to minimize, recycle, and effectively use waste discharged from these activities.

Minimizing Waste Generation and Reducing **Disposal Volumes**

Targeted amounts of waste generated per basic unit of sales have not been achieved either in Japan or overseas.

The amount of waste generated per basic unit of sales in FY2020 increased by 5.6% in Japan compared to a target of keeping it at the average level during the period from FY2017 to 2019. The goal was not achieved due to lower sales associated with reduced production volumes affected by the coronavirus pandemic, as well as the unexpected one-time disposal of scrap. We are pushing forward with waste reduction by scheduled disposal of disused articles and sorting of waste and recyclable items at all points. Overseas, where there was a reduction target of 1% per basic unit compared to FY2019, the result was a 5.2% increase in FY2020.





Zero emissions

All SHI Group companies have continued to reach zero emissions goals in FY2020 too.

The SHI Group has been promoting such activities in Japan since FY2005, applying the definition that a plant with a landfill disposal volume to waste discharge volume (landfill rate) rate of less than 0.5% is a zero-emission

plant. As the landfill rate of all domestic Works (six Works and seven plants) and group businesses other than Works (nine companies) was 0.052% in FY2020, zero emissions have been achieved continuously since FY2011. Overseas, where business activities are carried out with a non-landfill target rate of at least 95%, the target was achieved in FY2020 by reaching 96%, resulting in a combined domestic and overseas waste landfill rate of 2%.

Recycling through waste sorting is important for achieving zero emissions. To maintain zero emissions in the future, we are pushing our plants to contribute to a recyclingoriented society based on continued strict waste sorting.



Reducing Water Consumption

The water consumption target was achieved in Japan but not overseas.

In the SHI Group, since unnecessary water consumption was judged to have been almost eliminated as a result of ongoing water consumption cuts, in Japan the target for maintaining average water consumption during the previous Medium-Term Plan (from 2017 to 2019) or less has been set in the 6th Medium-Term Environmental Plan.

The target was achieved in FY2020, realizing at 1.2% reduction compared to the target by preventing leakage through utilizing a monitoring device, and reducing water consumption by using circulating water in test devices. We aim to achieve the target through continued waste elimination measures. In the case of overseas operations, on the other hand, the target was not achieved because the amount per basic unit of sales increased by 5.9% compared to the target to keep the level to that of FY2019 or lower.



Chemical Management Activities

We manage chemicals to promote prevention of environmental pollution.

Complete elimination of organochlorine chemical use

Continuing complete elimination of use

Complete abolishment of use of substances subject to the Soil Contamination **Countermeasures Act**

We have been continuing to completely eliminate the of use of organic chemicals subject to the Soil Contamination Countermeasures Act, namely dichloromethane, tetrachloroethylene, and trichloroethylene.

Complete abolishment of use of ozone-depleting substances

We have completely eliminated (and will continue to ban) the use of ozone-depleting substances HCFC-225 and HCFC-141b since FY2008 and FY2010, respectively, and the scheme remains in place. We have been promoting scheduled renewal of R-22, production of which was discontinued in FY2020.

Emission control of VOC substances

Domestically, emissions have been reduced by 9.4% from the target to maintain FY2019's level, which corresponds to a 7.9% reduction per basic unit of sales.

Toluene, xylene, and ethyl benzene contained in paint solvents account for at least 90% of the VOC substances used by the SHI Group. The 6th Medium-Term Environmental Plan has set a target for these emissions to be maintained at the FY2019 level or lower.

In FY2020, we achieved a 9.4% reduction compared to FY2019 by introducing powder coating, adopting low-solvent paints and VOC-free cleaning agents, and reducing paint consumption through improvements to painting efficiency. In addition, we also achieved a 7.9% reduction per basic unit of sales. The SHI Group will continue to reduce emissions by taking measures such as expanding the scope for adopting low-solvent paints and VOCfree cleaning agents as well as powder coating, and cut paint consumption through further improvements to painting efficiency. For companies overseas that have been initiating the activities since FY2012, the 6th Medium-Term Environmental Plan has also set a target for emissions per basic unit to be maintained at the FY2019 level or lower. Owing to the decline in emissions reduction per basic unit caused by the lower sales brought on by the coronavirus pandemic, the FY2020 target has not been achieved.



Emissions and transfer volume of PRTR substances

Reduced by 9% and 5% per basic unit of sales compared to FY2019

At least 90% of PRTR substances are paint solvents (toluene, xylene, and ethyl benzene). The 6th Medium-Term Environmental Plan has set a target for emissions and emissions per basic unit to be maintained at the FY2019 level or lower. In FY2020, we achieved a 9% reduction compared to FY2019. In addition, we also achieved a 5% reduction per basic unit of sales. We will endeavor to reduce emissions and transfer volume further by establishing and expanding solvent recovery and removal equipment or facilities while maintaining quality and expanding the adoption of low-solvent paints.

Emissions and transfer volume of Class I Designated Chemical Substances under the PRTR Law in FY2020 (Substances subject to reporting) (Unit: kg)

(0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0											
Substance	Substance designation	Emissio	ons + transfe	er volume							
No.	Substance designation	FY2018	FY2019	FY2020							
53	Ethylbenzene	218,658	221,964	233,310							
80	Xylene	498,744	392,357	342,269							
240	Styrene	2,050	1,561	975							
296	1,2,4-Trimethylbenzene	16,901	18,843	17,915							
297	1,3,5-Trimethylbenzene	5,559	5,389	4,594							
300	Toluene	156,262	141,755	122,357							
374	Hydrogen fluoride and water-soluble salts	17,555	22,381	12,017							
384	1-Bromopropane	11,122	11,474	7,934							
392	n-Hexane	866	321	105							
405	Boron and its compounds	1,618	1,155	1,778							
412	Manganese and its compounds	12,366	12,011	10,743							
420	Methyl methacrylate	1,366	564	232							

* Value of emissions + transfer volume indicates total amount from SHI and all its Group companies combined



Control of PCB and complete abolition of devices using it Gradual replacement/detoxification of stabilizers containing PCB

All of the devices containing high concentrations of PCB have been registered earlier with the Japan Environmental Storage & Safety Corporation, which is a waste-disposal company, and are detoxified in a planned manner based on the Act on Special Measures Concerning Promotion of Proper Treatment of PCB Waste. Transformers containing PCB and stabilizers for lighting equipment containing PCB are replaced. detoxified in sequence, and some Works and affiliated companies have completed all disposal. Moreover, upon completion of a survey of equipment containing low concentrations of PCB, we have been working on detoxifying such equipment in sequence by the deadline.

Non-financial Data List

[Scope of subjects] The subjects are Sumitomo Heavy Industries Ltd., 142 consolidated subsidiary companies (39 domestic and 103 overseas companies) and 6 equity method affiliates (1 domestic and 5 overseas companies). If the subject is different, it is described accordingly.

Response to climate change

Evaluation items (Small category)		Unit	2016	2017	2018	2019	2020	Remarks	
<u> </u>		Domestic	10,000 t-CO2	8.9	9.2	9.5	9.4	9.1	
CO2 emissi	ons	Overseas	10,000 t-CO2	6.1	6.7	7.8	8.6	8.3	
		Domestic	t-CO ₂	18,329.0	18,927.5	18,456.3	18,213.4	16,930.4	
	Scope 1 (Location)	Overseas	t-CO ₂	15,910.2	17,187.5	20,102.6	22,691.2	20,733.8	
		Total	t-CO ₂	34,239.1	36,115.0	38,558.9	40,904.6	37,664.2	
	Data coverage rate		%	86.0	81.2	80.1	85.9	85.9	
	Scope 2 (Location)	Total	t-CO ₂	116.129.7	122.201.9	135.069.1	139,140,6	135.782.8	
		Domestic	t-CO ₂	83.771.0	86.323.2	90.975.6	88.599.2	85.802.3	
	Scope 2 (Market)	Overseas	t-CO2	45 112 1	49 382 2	58 183 1	62 936 0	61 995 1	
	scope 2 (married)	Total	t-CO2	128 883 1	135 705 5	149 158 7	151 535 3	147 797 4	
	Data coverage rate	. otat	%	86.0	81.2	80.1	85.9	85.9	
	Scope 1+2	Location	t-CO2	150 368 8	158 316 9	173.628.0	180.045.2	173 / /7 0	
	Data coverage rate	Location	04	86.0	81.2	80.1	85.0	85.0	
	Scope 2	Total	/0 + CO2	276.916	221.017	50.045.006	50 462 190	125 794 414	
	Scope S	TOLAL	1-CO2	270,010	551,917	59,945,090	59,402,109	7()	Cat 11 alana
	Data coverage rate		%	04.0	212 (71	00.0	/ 3.0	70.2	Cal-11 alone
	Cat-UT Raw material	S	t-CO2	258,127	313,671	312,242	313,670	356,805	
	Cat-02 Capital good	s	t-CO2	-	-	143,234	165,/51	128,805	
	Cat-03 Energy consu	Imption	t-CO ₂	-	-	9,949	20,162	20,280	
	Cat-04 Logistics (Up:	stream)	t-CO2	9,113	9,841	10,192	10,179	9,970	
	Cat-05 Waste dispos	sal	t-CO ₂	9,576	8,405	8,679	6,958	5,767	
	Cat-06 Business trav	el	t-CO ₂	-	-	1,962	2,120	2,171	
	Cat-07 Commuting		t-CO ₂	-	-	5,723	6,006	6,179	
	Cat-08 Lease asset (Upstream)	t-CO ₂	0	0	0	0	0	
Cat-09 Logistics (Downstream)		t-CO ₂	0	0	0	0	0	Included in Cat-04	
Processing of Cat-10 Products		t-CO ₂	0	0	0	0	0		
	Use of Cat-11 Products		t-CO ₂	—	_	59,453,115	58,937,343	135,254,436	
	Disposal of Cat-12 P	roducts	t-CO ₂	0	0	0	0	0	
	Cat-13 Lease asset (Downstream)	t-CO ₂	0	0	0	0	0	
Amount co	ntributed to reduction in	n product use	10,000 t-CO2	_	_	927.7	1,151.0	4,482.4	
CO₂ emissi	ons per basic unit		Million yen/CO2-t	4.48	5.00	5.20	4.80	4.90	
_	1	Domestic	Million yen/CO2-t	5.6	5.9	6.1	5.8	5.8	
Energy pro	ductivity	Overseas	Million yen/CO ₂ -t	2.1	2.6	3.2	3.0	2.7	
		Domestic	MWh	89,113.2	92,987.0	91,168.8	90,386.3	85,014.1	
	Fuel consumption	Overseas	MWh	84,310.8	91,889.2	106,655.2	120,823.5	110,345.1	
		Total	MWh	173.424.0	184.876.2	197.824.0	211.209.8	195.359.2	
		Domestic	MWh	153,369,8	157.228.1	165,976,8	164,552,2	159.322.8	
	Electric power	Overseas	M\/h	99 733 0	106 222 0	124 509 4	131 085 2	129 930 1	
Energy	consumption	Total	MW/h	253 102 8	263,450,2	290 486 2	295 637 4	289 252 9	
consumption		Domestic	M\A/b	1 065 0	1 195 0	1 356 7	1 202 9	1 196 9	
	Cold/Warm water	Overseas	M\A/b	1,005.0	0.0	9,836.0	5 378 9	8 1 1 0 0	
	Cold/ Walth Watch	Total	A\\/b	1.065.0	1 195 0	11 192 7	6 581 9	9 306 9	
	Total	TOLAL	/////h	427 501 0	440 521 4	400 502 0	512 420 0	402 010 0	
	Data covorago rato		0/	427,391.9	449,521.4	499,302.9	515,429.0	493,919.0	
	Data Coverage rate	Domostic	70 A4\A/b	247.1	222.4	225.6	222.4	1 222 2	
Dependence	anarry concurrentian	Domestic	/////	547.1	525.4	335.0	525.4	1,223.3	
Renewable	energy consumption	Overseas	/v\vvn	0.0	0.0	0.0	0.0	0.0	
			ivivvn	347.1	323.4	335.6	323.4	1,223.3	
		Domestic	%	0.08	0.07	0.07	0.07	0.28	
	Energy recycling rate	Overseas	%	0.00	0.00	0.00	0.00	0.00	
		Overall	%	0.05	0.04	0.04	0.04	0.15	
	Data coverage rate	1	%	86.0	81.2	80.1	85.9	85.9	
5 greenhouse	Total amount	Domestic	t-CO ₂	74.7	67.4	45.9	51.0	54.2	
gases	Methane (CH ₄)	Domestic	t-CO ₂	53.7	54.7	34.7	41.3	46.7	
	Dinitrogen monoxide (N2O)	Domestic	t-CO ₂	21.0	12.8	11.2	9.8	7.5	

Waste control

Evaluation items (Small category)		Unit	2016	2017	2018	2019	2020	Remarks	
		Domestic	t	29,345.0	28,809.4	31,918.5	30,080.1	30,159.4	
Amount of	waste generated	Overseas	t	15,868.0	18,625.0	23,038.0	34,085.0	30,707.0	
		Total	t	45,213.0	47,434.4	54,956.5	64,165.1	60,866.4	
Data coverage rate		%	85.7	81.0	83.6	85.6	85.5		
	Amount recycled	Domestic	t	29,253.0	28,805.9	31,905.3	24,860.1	29,685.7	Amount recycled, valuable resources
	Einal amount	Domestic	t	0.3	3.5	10.3	1.1	15.7	
disposed of	disposed of	Overseas	t	436.0	701.0	750.0	8,233.0	1,219.0	
		Total	t	436.3	704.5	760.3	8,234.1	1,234.7	
	Amount of hazardous waste generated	Domestic	t	325.6	287.3	4,079.4	303.2	817.6	Specially controlled industrial waste

Water resource conservation

Evaluation items (Small category)		Unit	2016	2017	2018	2019	2020	Remarks	
Water consumption		Domestic	thousand m ³	1,142.3	1,171.5	1,232.2	1,182.7	1,171.0	
		Overseas	thousand m ³	243.5	206.8	295.1	374.9	343.2	
		Total	thousand m ³	1,385.9	1,378.3	1,527.3	1,557.6	1,514.2	
Data coverage rate			%	79.6	76.4	79.9	80.6	77.1	
	Clean water	Domestic	thousand m ³	351.6	380.2	419.9	384.7	381.8	
	Industrial water	Domestic	thousand m ³	615.3	621.8	621.8	622.2	610.0	
	Underground water	Domestic	thousand m ³	175.4	169.5	190.6	175.8	179.2	

Chemicals

Evaluation items (Small category)		Unit	2016	2017	2018	2019	2020	Remarks	
VOC E X		Domestic	t	541.2	558.6	647.2	577.2	519.4	
	Total amount (emissions)	Overseas	t	109.3	84.8	88.4	108.0	170.7	
		Total	t	650.5	643.4	735.6	684.3	691.2	
	Data coverage rate		%	85.7	81.0	83.6	83.9	83.9	
	Ethylbenzene	Domestic	t	129.1	125.3	167.1	154.9	158.1	
	Xylene	Domestic	t	286.5	321.6	351.2	300.6	262.3	
	Toluene	Domestic	t	125.6	111.7	128.9	121.7	99.0	

Environmental management

Eva	luation items (Small cat	egory)	Unit	2016	2017	2018	2019	2020	Remarks
Number of occurre	nces of serious environmental incidents	Company-wide	Number of cases	0	0	0	0	1	
Number of cases of seri	ous violation of environmental laws and regulations	Company-wide	Number of cases	0	0	0	0	0	
Number of cases in	which any penalty charge or fine was paid	Domestic	Number of cases	0	0	0	0	1	Cases in which at least US\$10,000 of penalty charges or fines were paid
Environment/	Environment-related	Company-wide	%	-	-	0.05	0.15	0.07	
energy-saving related capital	Energy-saving related	Company-wide	%	-	-	0.23	0.39	0.36	
investment	Total	Company-wide	%	-	-	0.28	0.54	0.43	
	CDP		_	В	C	B-	В	B-	
External	Buna-no-Mori (Beech	forest)	_	В	NA	В	В	A	
evaluation	Evaluation of energy-sav	ing scheme	_	В	S	S	S	S	
	Energy saving evaluation for specific tenants by the	Tokyo metropolitan government	—	_	AA	AA	AA	AA	
		Domestic	Number of cases	37	37	37	37	37	
Acquisition of ISO 14001		Overseas	Number of cases	18	18	18	19	21	
		Total	Number of cases	55	55	55	56	58	
	Acquisition rate		%	84.2	77.9	80.0	80.1	80.6	

Non-financial Data List

Environmental accounting in FY2020

The SHI Group conducts environmental accounting based on the "Environmental Accounting Guidelines 2005" from the Ministry of Environment as a criterion to determine investments costs / effectiveness related to environmental conservation.

(Unit: Million ven)

Costs for environmental conservation (Classified depending on the business activities)

Costs for environmental conservation Effectiveness of environmental c								al conservation				
	Classification	Main offerts	I	nvestmen	t		Cost	Economic effect		ect	Main offects	
	Classification	Main ellorts	FY2018	FY2019	FY2020	FY2018	FY2019	FY2020	FY2018	FY2019	FY2020	Main ellects
(1) bus	Costs within the iness area	Maintenance/depreciation of equipment or facilities that reduce environmental loads	483	8,697	1,241	796	1,648	840	314	233	225	
	(1) -1 Pollution preven- tion costs	Maintenance and management of equipment or facilities that prevent air and water pollution, and measurement of noise/vibra- tion	42	533	689	256	246	245	0	0	0	
Breakdowr	(1) -2 Global environ- mental conserva- tion costs	Investment in energy-saving measures (Power consumption monitoring, energy-saving devices, replace- ment of lighting, etc.)	430	8,162	515	58	55	40	44	57	25	Cost reduction by energy/resource saving and 3Rs
	(1) -3 Resource recy- cling costs	Reduction of waste, Investment in recycling (Recycling, Use of recycled resources)	11	2	37	482	1,347	554	270	176	200	Cost cutting by waste reduction Sales value of valu- able resources
(2)	Upstream/down- stream costs	Reduction of product packaging materials, recycling of home elec- tric appliances, and use of both sides of paper	1	1	0	1	2	0	0	0	0	
(3)	Management activ- ity costs	Maintenance and administration of ISO 14001 standards, and expansion of green spaces	14	890	1,352	154	702	125	_	_	_	Economic effects (substantial effects)
(4)	Research & devel- opment costs	(4) Research & development costs Research and development for reducing environmental im- pact of products, Research and development of environmental equipment	2,499	3,465	3,057	495	319	102	_	_	_	achieved by environ- mental conservation measures are shown in an appended table.
(5)	Social activity costs	Regional environmental conser- vation and greening activities	0	0	1	1	1	1	0	0	0	
(6)	Costs for dealing with environmen- tal damage	Levies on air pollution loads, and costs of green belts and pollution compensation	0	0		0	0	0	0	0	0	
	Total		2,998	13,053	5,651	1,447	2,672	1,068	314	233	225	

Table of environmental conservation cost transition during the last three years

(Unit: Million yen)				
	Details of effects	FY2018	FY2019	FY2020
Revenues	Business revenues obtained by recycling waste or used prod- ucts	270	176	200
		0	0	0
	Cutback on energy costs (electric power and fuel costs) based on saving energy	44	57	25
Cost savings	Cutback on waste disposal costs associated with resource saving or recycling	2	3	1
	Reduction of costs (maintenance and operation costs such as labor, materials, and repair costs)	0	0	0
Total			237	227

Table of environmental conservation cost transition during the last three years

		(Unit:	Million yen)
Details of effects	FY2018	FY2019	FY2020
Total cost of environmental conservation	4,444	15,725	6,719
Total investment	2,998	13,053	5,651
Total costs	1,447	2,672	1,068
Total research & development cost	2,994	3,784	3,159

Social Contribution Activities / Commendations

Yokosuka: Received the Minister of the Environment's 2020 Sound Material-Cycle Society Formation Promotion Award.

Sumitomo Heavy Industries Ltd., Yokosuka Works was recognized by the Minister of the Environment as a 3R Activity Top-Rated Company for its achievements in waste reduction, cyclical use and appropriate disposal by thorough sorting of waste associated with Zero Emission Activity, which have been implemented since 2004.

Tanashi: A letter of gratitude was received for the cooperation with the "Zero Emission Tokyo" When Sumitomo Heavy Industries Ltd. Tanashi Works provided the Tokyo metropolitan government with CO₂ reduction credits *established by Tokyo Cap-and-Trade Program in cooperation with the government's "Zero Emission Tokyo" initiative, a letter of gratitude was sent from Ms. Yuriko Koike, Governor of Tokyo. We will keep on pushing ahead with energy-saving activities to reduce our CO₂ emissions at all Works.

* CO₂ reduction credit: This refers to a certificate of tradable amount of greenhouse gas reduced, which corresponds to an amount of CO₂ emissions reduced exceeding the reduction target value.

Okayama: Plant tour by Tamashima Junior High School students

Sumitomo Heavy Industries Ltd. Okayama Works provided a plant tour for students from Kurashiki City Tamashima Junior High School in November 2020. After listening to a talk about Sumitomo Heavy Industries Finetech Ltd. and Sumitomo Heavy Industries Gearbox Ltd., they experienced actual operational work at both companies.



Student work experience at Sumitomo Heavy Industries Finetech Ltd.



Award given to Yokosuka



Award given to Tanashi



Student work experience at Sumitomo Heavy Industries Gearbox Ltd.

Environmental Load Data

Third-party certification of environmental load data

Sumitomo Heavy Industries Group (in Japan) has obtained a third-party certification by Bureau Veritas Japan for environmental load data (energy consumption in FY 2019 (crude oil equivalent) *1, energy-derived CO₂ emissions ^{*2}) associated with its business activities. *3

- *1: Energy consumption (crude oil equivalent): Electric power, city gas, LPG, heavy fuel oil A, gasoline, light oil, kerosene, warm/cold water
- *2: Energy-derived CO2 emissions: CO2 emissions derived from *1 energy for in-house use. *3: Exclude Tanashi Works, which has obtained certification
- based on Tokyo metropolitan ordinances.

Environmental Load Data

Environmental load data for Works^{*1} of Sumitomo Heavy Industries, its Group companies in Japan^{*2} and main overseas Group companies is as follows.

*1: Including Group companies within Works

*2: Group companies excluding Works

Environmental load data for each Works

Tanashi Works



		Energy consump	otion	PRTR (kg/year)	Emissions
ug 1998)		Electric power (1,000 kWh)	7,837	Ethylbenzene	25.9
ug. 1990)		Gasoline (kL)	0.05	1,2-Epoxybutane	2.2
mont		Kerosene (kL)	0.60	Ferric chloride	0.0
Jinent		Light oil (kL)	0.51	Xylene	55.0
ed of	dfill rate	Heavy fuel oil A (kL)	0.00	Chromium and chromium (III) compounds	2.1
(%	()	LPG (t)	0.00	Hexavalent chromium compounds	0.2
-1	00	LNG (t)	0.00	Ethylene glycol monoethyl ether	22.7
		City gas (km ³)	1.96	acetate	22.7
-18	30	Water consumption (m ³)	12,344	Toluene	536.5
-6	50	Atmospheric disc	harge	Lead	0.0
		SOx (kg)	-	Lead compounds	0.0
-4	10	NOx (kg)	-	Nickel	0.0
	0			1-Bromopropane	3,824.2
74	20			Boron and its compounds	0.0
0)			Manganese and its compounds	0.0
20192020 (F	Y)				

Chiba Works

■ Established in 1965 ■ Site area: 297,039 m² ■ Building area: 111,684 m²

■ Main products: Plastic processing machines, metallic molds,

hydraulic excavators Amount of waste disposed of CO2 em ssions --- Energy productivity Amount of waste generated --- Waste landfill (t-CO₂) 20,000 million yen/t-CO₂) (t/year) 5,000 r ¬16 4,000 15,000 12 3,000 10,000 -8 2,000 5.000 1,000 2016 2017 2018 2019 2020 [F] 2016 2017 2018 2019 2020 (FY)

	Energy consumption					
	Electric power (1,000 kWh)	21,108	Z			
	Gasoline (kL)	147.95	E			
	Kerosene (kL)	0.65	X			
	Light oil (kL)	552.35	S			
	Heavy fuel oil A (kL)	0.00	S			
rate	LPG (t)	40.04	1			
	LNG (t)	0.00	1			
	City gas (km ³)	1,380.31	T			
	Water consumption (m ³)	70,666	Ν			
	Atmospheric disc	harge	Ν			
	SOx (kg)	-	H			
	NOx (kg)	228	D			
			Н			
			n			

100

60

40

20

0

0

PRTR (kg/year)	Emissions	Transfer volume
Zinc compounds (water-soluble)	209	36
Ethylbenzene	23,951	63,037
Xylene	28,745	53,130
Silver and its water-soluble compounds	0	0
Styrene	370	217
1,2,4-Trimethylbenzene	5,518	3,019
1,3,5-Trimethylbenzene	94	9
Toluene	10,727	2,073
Naphthalene	422	247
Nickel compounds	4	4
Hydrazine	5	0
Di-n-butyl phthalate	0	0
Hexamethylene diisocyanate	82	33
n-Hexane	0	0
Manganese and its compounds	7	7
Methyl methacrylate	136	80

210

0

ransfer volume 0.0

59.2 0.0

22.0 46.3

0.0

0.0 51.0 2.2 0.0 0.0

0.2

172.4

The last that

0





Energy consumption				
tric power (1,000 kWh)	39,663			
oline (kL)	27.31			
osene (kL)	0.00			
nt oil (kL)	212.80			
avy fuel oil A (kL)	0.00			
i (t)	10.36			
G (t)	0.00			
∕ gas (km³)	1,060.56			
ter consumption (m ³)	149,900			
Atmospheric disc	harge			
((kg)	-			
x (kg)	636			
charge into water o	atchments			
D (kg)	334.7			
ogen (kg)	190.7			
sphorus (kg)	68.5			

PRTR (kg/year)	Emissions	Transfer volume
Zinc compounds (water-soluble)	376	11
Methyl acrylate	0	0
Acetonitrile	0	13
o-Anisidine	0	0
Ethylbenzene	88,278	0
Ferric chloride	6	124
Cadmium and its compounds	0	15
Xylene	134,842	0
Silver and its water-soluble compounds	0	33
Glutaraldehyde	0	10
Chromium and chromium (III) compounds	0	20
Hexavalent chromium compounds	0	99
Chloroform	0	0
Cobalt and its compounds	1	0
Dichloromethane	0	0
N,N-Dicyclohexylamine	0	0
N,N-Dimethylformamide	0	0
Mercury and its compounds	0	12
Copper salts (water-soluble, except complex salts)	0	4
1,2,4-Trimethylbenzene	36	0
1,3,5-Trimethylbenzene	13	0
Toluene	36,752	85
Lead compounds	0	0
Nickel	0	3
O-Nitroanisole	0	0
Carbon disulfide	0	4
Vanadium compounds	0	0
Polycarbonate	0	0
Arsenic and its inorganic compounds	0	0
Hydroquinone	0	9
Pyridine	0	0
Phenol	428	0
Hydrogen fluoride and water-soluble salts	9	9,440
1-Bromopropane	2,999	1,111
Hexamethylene diisocyanate	0	3
n-Hexane	4	96
Water-soluble salts of peroxodisulfuric acid	0	0
Benzene	0	0
Boron and its compounds	3	32
Poly (oxyethylene) nonylphenyl ether	7	130
Manganese and its compounds	926	8,620
Molybdenum and its compounds	0	0
Tritolyl phosphate	0	1,786
Triphenyl phosphate	1	17

Energy consumption						
tric power (1,000 kWh)	23,229					
soline (kL)	39					
osene (kL)	0.31					
nt oil (kL)	150					
avy fuel oil A (kL)	-					
i (t)	6.2					
G (t)	0.0					
/ gas (km³)	1,066.12					
ter consumption (m ³)	130,703					
Atmospheric disc	harge					
< (kg)	-					
x (kg)	26					
charge into water catchment						
D (kg)	584.9					
rogen (kg)	57.7					
sphorus (kg)	2.4					

PRTR (kg/year)	Emissions	Transfer volume
Acrylic acid and its solutions	3	0
Ethylbenzene	7,888	0
Xylene	8,901	0
Cumene	0	0
Cobalt and its compounds	0	0
Styrene	125	0
1,2,4-Trimethylbenzene	218	14
1,3,5-Trimethylbenzene	223	342
Tolylene diisocyanate	0	0
Toluene	6,857	0
Naphthalene	0	0
Nickel	0	0
Water-soluble salts of peroxodisulfuric acid	0	0
Benzene	1	0
Boron and its compounds	0	0
Poly (oxyethylene) = alkyl ether (alkyl C=12-15)	1	0
Manganese and its compounds	0	0
n-Butyl methacrylate	0	0
Methyl methacrylate	13	0
α -Methylstyrene	125	0
1-Methyl-1-phenylethyl hydroperoxide	3	0
Methylenebis (4,1-phenylene) = diisocyanate	0	4
Molybdenum and its compounds	284	0

Environmental load data for each Works

Okayama Works

 ■ Established in 1948
■ ISO 14001 (obtained in Aug. 1998)
■ Site area: 425,000 m²
■ Building area: 78,000 m² ■ Main products: Gear boxes, machine tools, coolant systems



	Gasoline (kL)	0.24	
	Kerosene (kL)	0.00	
	Light oil (kL)	4.72	-
	Heavy fuel oil A (kL)	0.00	
ate	LPG (t)	89.58	
arc	LNG (t)	0.00	
	City gas (km ³)	0.00	
	Water consumption (m ³)	11,111	
	Atmospheric disc	harge	
	SOx (kg)	-	
	NOx (kg)	601	
	Discharge into water of	catchments	
	COD (kg)	41.8	
	Nitrogen (kg)	197.3	
	Phosphorus (kg)	1.0	

Energy consumption

Electric power (1,000 kWh) 22,492

6.10

Energy consump Electric power (1,000 kWh)

tion	PRTR (kg/year)	Emissions	Transfer volume
4,521	Ethylbenzene	1,180	0
0.24	Xylene	1,961	0
0.00	1,3,5-Trimethylbenzene	1	0
4.72	Toluene	4,141	0
0.00			

3	3,000	-		
2	2,500	- (
2	2,000	-		
1	,500	-		
1	,000	$\left \right $		
	500	$\left \right $		
	0			
	0	2	<u>^1</u>	0
		1	υI	n

Environmental load data for Group companies in Japan (excluding Works)

Shin Nippon Machinery Co., Ltd. Main products: Turbines, pumps



Nihon Spindle Mfg. Co., Ltd.

Main products: Industrial instruments, environmental equipment



Sumitomo Heavy Industries Ion Technology Co., Ltd. Main products: Ion implanters



Sumitomo NACCO Forklift Co., Ltd. Main products: Forklifts



Ehime Works (Niihama plant)

Established in 1888 ISO 14001 (obtained in Aug. 1998)

- Site area: 418,000 m² Building area: 203,000 m² Main products: Forging machinery, ion accelerators, transportin
- machines, parking systems, rolling machines



	Kerosene (kL)	0.60	
IS .	Light oil (kL)	90.81	
	Heavy fuel oil A (kL)	352.00	
dfill rate	LPG (t)	521.86	
6)	LNG (t)	303.69	
100	City gas (km ³)	0.00	
00	Water consumption (m ³)	638,524	
80	Atmospheric discharge		
60	SOx (kg)	453	
40	NOx (kg)	1,443	
40	Discharge into water of	atchments	
20	COD (kg)	172.8	
•	Nitrogen (kg)	550.1	
D EV	Phosphorus (kg)	12.1	

Gasoline (kL)

PRTR (kg/year)	Emissions	Transfer volume
Zinc compounds (water-soluble)	0	0
Acetonitrile	0	169
Antimony and its compounds	0	0
4,4' – Isopropylidenediphenol (bis-phenol A)	0	0
Ethylbenzene	23,475	2,039
Ferric chloride	0	0
1-Octanol	0	0
Xylene	34,353	3,222
Cumene	0	0
Chromium and chromium (III) compounds	0	153
Hexavalent chromium compounds	0	0
Cobalt and its compounds	0	1
Ethylene glycol monoethyl ether acetate	0	0
Styrene	6	0
Copper salts (water-soluble, except complex salts)	0	0
Triethylenetetramine	0	0
3,5,5-Trimethyl-1-hexanol	0	0
1,2,4-Trimethylbenzene	83	3
1,3,5-Trimethylbenzene	15	0
Toluene	22,798	2,512
Naphthalene	88	1
Nickel	0	63
Nonylphenol	641	0
Di-n-butyl phthalate	39	3
n-Butyl benzyl phthalate	0	0
Hydrogen fluoride and water-soluble salts	3	0
Hexamethylene diisocyanate	28	0
n-Hexane	5	0
Water-soluble salts of peroxodisulfuric acid	0	0
Boron and its compounds	9	88
Manganese and its compounds	247	695
n-Butyl methacrylate	0	0
1-Methyl-1-phenylethyl hydroperoxide	0	0
Molybdenum and its compounds	0	19

Ehime Works (Saijo plant)

■ Established in 1973 ■ ISO 14001 (obtained in Aug. 1998) ■ Site area: 535,036 m² ■ Building area: 83,104 m² ■ Main products: Pressure vessels, agitating and mixing equipment,

transporting machines, parking systems, steel structures





100

80

60

Energy consumption

	PRTR (kg/year)	Emissions	Transfer volume
229	Ethylbenzene	1,936	1,579
7.46	Xylene	7,238	6,140
0.00	Styrene	5	6
1.45	1,2,4-Trimethylbenzene	125	107
3.63	1,3,5-Trimethylbenzene	37	43
5.87	Toluene	3,370	2,325
0.00	Naphthalene	14	17
0.00	Phenol	36	13
385	Hexamethylene diisocyanate	6	6

Energy consumption		
tric power (1,000 kWh)	4,183.7	
oline (kL)	0.0	
osene (kL)	191.9	
nt oil (kL)	3.1	
avy fuel oil A (kL)	0.0	
i (t)	5.5	
/ gas (km³)	0.1	
ter consumption (m³)	20,716	
Atmospheric disc	harge	
(kg)	14	
< (kg)	395	
charge into water o	atchments	
D (kg)	-	
ogen (kg)	-	
sphorus (kg)	-	

PRTR (kg/year)	Emissions	Transfer volume
2-Aminoethanol	12	1
Antimony and its compounds	8	1
Ethylbenzene	731	80
Kylene	2,431	263
Cumene	56	6
Chromium and chromium (III) compounds	13	1
Cobalt and its compounds	72	8
Styrene	1	0
1,2,4-Trimethylbenzene	2,023	225
1,3,5-Trimethylbenzene	643	71
Toluene	512	52
Naphthalene	0	0
Nickel compounds	0	0
Vanadium compounds	2	0
Di-n-butyl phthalate	0	0
n-Butyl benzyl phthalate	0	0
Hexamethylene diisocyanate	0	0
Nanganese and its compounds	8	1
n-Butyl methacrylate	1	0

Energy consumption		
Electric power (1,000 kWh)	1,465.2	
Gasoline (kL)	2.2	
Kerosene (kL)	0.0	
Light oil (kL)	0.0	
Heavy fuel oil A (kL)	0.0	
LPG (t)	0.0	
City gas (km ³)	27.3	
Water consumption (m ³)	11,007	
Atmospheric discharge		
Sox (kg)	-	
Nox (kg)	-	

So) No

PRTR (kg/year)	Emissions	Transfer volume
Ethylbenzene	223	223
Xylene	374	358
Hexavalent chromium compounds	0	0
Cobalt and its compounds	0	0
Styrene	0	0
1,2,4-Trimethylbenzene	11	7
1,3,5-Trimethylbenzene	4	4
Toluene	888	502
Naphthalene	0	0
Vanadium compounds	2	2
Benzene	0	0
Formaldehyde	0	0
,		

Energy consumption			
Electric power (1,000 kWh)	12,350.2		
Gasoline (kL)	-		
Kerosene (kL)	-		
Light oil (kL)	-		
Heavy fuel oil A (kL)	-		
LPG (t)	-		
City gas (km ³)	-		
Water consumption (m ³)	16,914		
Atmospheric discharge			
Sox (kg)	-		
Nox (kg)	-		

PRTR (kg/year)	Emissions	Transfer volume
2-Aminoethanol	0.000	0.000
Antimony and its compounds	0.000	0.369
thylene glycol monomethyl ther(2-Ethoxyethanol)	0.000	0.600
oluene	0.000	10.440
Arsenic and its inorganic compounds	0.000	0.968
lydrogen fluoride and water-soluble salts	0.000	6.000
Boron and its compounds	0.000	1.630
Aolybdenum and its compounds	0.000	0.000

Energy consumption		
tric power (1,000 kWh)	2,779.9	
soline (kL)	5.1	
osene (kL)	0.0	
nt oil (kL)	12.3	
avy fuel oil A (kL)	0.0	
i (t)	0.0	
∕ gas (km³)	250.0	
ter consumption (m³)	16,802	
Atmospheric disc	harge	
(kg)	-	
k (kg)	-	

PRTR (kg/year)	Emissions	Transfer volume
Zinc compounds (water-soluble)	0.00	16
Ethylbenzene	7,714.33	6,472
Ethylene glycol monomethyl ether(2-Ethoxyethanol)	61.82	53
Ethylenediamine	30.89	26
Xylene	16,209.66	13,652
Cumene	82.08	67
Ethylene glycol monoethyl ether acetate	149.53	129
Styrene	4.18	4
1,2,4-Trimethylbenzene	2,320.10	1,904
1,3,5-Trimethylbenzene	1,313.70	1,060
Toluene	5,529.41	4,597
Naphthalene	209.21	149
Nickel compounds	6.85	5
Di-n-butyl phthalate	0.57	1
Hexamethylene diisocyanate	11.12	9
Boron and its compounds	893.33	745
Formaldehyde	14.88	11
Manganese and its compounds	10.27	8
n-Butyl methacrylate	110.04	90
Methyl methacrylate	0.47	0
α-Methylstyrene	0.48	0

Environmental load data for Group companies in Japan (excluding Works) insfer volume 101 Energy

Electric power (

Heavy fuel oi

Atmosp



			- · ·	T ()
consump	otion	PRIR (kg/year)	Emissions	Transfer volume
1,000 kWh)	4,571.0	Ethylbenzene	51	101
	0.8	Ethylene glycol monoethyl ether	13	26
)	0.9	(2-Ethoxyethanol)		
	1.5	Xylene	95	192
l A (kL)	0.0	Styrene	0	3
	8.4	1,3,5-Trimethylbenzene	5	10
)	108.0	Toluene	3,313	6,627
ption (m ³)	10,204	Lead	18	35
heric disc	harge	Hexamethylene diisocyanate	2	4
	-	Methyl methacrylate	0	3
	652			

Sumitomo Heavy Industries Modern, Ltd. Main products: Plastic extrusion molding machines



	Energy consump	otion	
	Electric power (1,000 kWh)	1,328.4	Ethylben
	Gasoline (kL)	0.0	Xylene
	Kerosene (kL)	0.0	Cumene
P	Light oil (kL)	23.4	1,2,4-Trir
	Heavy fuel oil A (kL)	0.0	1,3,5-Trir
	LPG (t)	0.4	Toluene
	City gas (km ³)	0.0	Di-n-buty
	Water consumption (m ³)	2,155	
	Atmospheric disc	harge	
	Sox (kg)	-	
	Nov (kg)		

	PRTR (kg/year)	Emissions	Transfer volum
8.4	Ethylbenzene	853	0
0.0	Xylene	1,082	0
0.0	Cumene	4	0
3.4	1,2,4-Trimethylbenzene	184	0
0.0	1,3,5-Trimethylbenzene	76	0
0.4	Toluene	3,950	0
0.0	Di-n-butyl phthalate	22	0
55			

Izumi Food Machinery Co., Ltd. Main products: Food processing machinery



	Gasoline (kL)	0.0	>
	Kerosene (kL)	0.0	Ē
ndfill rate	Light oil (kL)	0.0	C
%)	Heavy fuel oil A (kL)	0.3	T
100	LPG (t)	0.0	1
00	City gas (km ³)	5.8	1
00	Water consumption (m ³)	2,944	T
60	Atmospheric disc	harge	Ē
10	Sox (kg)	-	
40	Nox (kg)	-	H
20			r
			1
0			h

Energy consumption

Electric power (1.000 kWh) 424

	PRTR (kg/year)	Emissions	Transfer volume
0	Ethylbenzene	0	0
0	Xylene	0	0
0	Hexavalent chromium compounds	0	0
0	Cobalt and its compounds	0	0
3	Triethylenetetramine	0	0
0	1,2,4-Trimethylbenzene	0	0
8	1,3,5-Trimethylbenzene	0	0
4	Toluene	0	0
	Lead compounds	0	0
	Di-n-butyl phthalate	0	0
	Hydrogen fluoride and water-soluble salts	3	0
	n-Hexane	0	0
	1-Methyl-1-phenylethyl hydroperoxide	0	0

SFK Co., Ltd. Main products: Bolts, nuts, precision screws



Energy consump	otion
Electric power (1,000 kWh)	730.4
Gasoline (kL)	0.4
Kerosene (kL)	7.8
Light oil (kL)	0.0
Heavy fuel oil A (kL)	0.0
LPG (t)	0.7
City gas (km ³)	0.0
Water consumption (m ³)	577
Atmospheric disc	harge
Sox (kg)	-
Nox (kg)	-
Discharge into water of	atchments
COD (kg)	3.8
Nitrogen (kg)	-
Phosphorus (kg)	-

100

80

60 40

20

Complete elimination of PRTR substances

[Environmental load data for main overseas Group companies]

Sumitomo (SHI) Cyclo Drive (Tangshan), Ltd. / Country: China Main products: Power transmission and controls



Sumitomo (SHI) Cyclo Drive China, Ltd. / Country: China Main products: Power transmission and controls



Ningbo Sumiju Machinery, Ltd. / Country: China Main products: Plastic injection molding machines, components for power transmission equipment



Sumitomo (S.H.I.) Construction Machinery (Tangshan) Co., Ltd. / Country: China Main products: Hydraulic excavators, road machinery



Sumitomo Heavy Industries (Vietnam) Co., Ltd./ Country: Vietnam Main products: Power transmission and controls, motors



Energy consumption 663 Electric power (1,000 kWh 9,687 Gasoline (kL) Heavy fuel oil (k Light oil (kL) LPG (t) Natural gas (km³) 22,559 Water consumption (m³

Atmospheric discharge	
/OC emissions (t/year)	0.087
Ox emissions (t/year)	0.021
NOx emissions (t/year)	1.942

Energy consumption	
er (A4 1,000 sheets)	1,008
ctric power (1,000 kWh)	4,280
soline (kL)	-
avy fuel oil (kL)	-
nt oil (kL)	164
6 (t)	-
tural gas (km³)	-
ter consumption (m ³)	19.562

Atmospheric discharge	
VOC emissions (t/year)	1.473
SOx emissions (t/year)	0.004
NOx emissions (t/year)	0.090

Energy consumption	
er (A4 1,000 sheets)	467
ctric power (1,000 kWh)	4,585
soline (kL)	-
avy fuel oil (kL)	-
nt oil (kL)	13
i (t)	-
tural gas (km³)	-
iter consumption (m³)	15,442

Atmospheric discharge		
VOC emissions (t/year)	1.339	
SOx emissions (t/year)	-	
NOx emissions (t/year)	-	

Energy consumption	
er (A4 1,000 sheets)	960
ctric power (1,000 kWh)	14,926
oline (kL)	-
avy fuel oil (kL)	-
nt oil (kL)	35
i (t)	31
:ural gas (km³)	1,542
ter consumption (m ³)	62,729

Atmospheric discharge	
VOC emissions (t/year)	32.620
SOx emissions (t/year)	0.400
NOx emissions (t/year)	3.970

Energy consumption	
er (A4 1,000 sheets)	5,087
ctric power (1,000 kWh)	21,051
soline (kL)	-
avy fuel oil (kL)	-
nt oil (kL)	-
5 (t)	555
:ural gas (km³)	-
ter consumption (m³)	29,290

Atmospheric discharge	
OC emissions (t/year)	1.055
Ox emissions (t/year)	-
IOx emissions (t/year)	-

[Environmental load data for main overseas Group companies]

SHI Manufacturing & Service (Philippines) Inc. / Country: Philippines Main products: Precision parts and components



Energy consumption	
Paper (A4 1,000 sheets)	564
Electric power (1,000 kWh)	2,174
Gasoline (kL)	4
Heavy fuel oil (kL)	7
Light oil (kL)	-
LPG (t)	1
Natural gas (km³)	-
Water consumption (m ³)	16,199

Atmospheric discharge	
VOC emissions (t/year)	1.722
SOx emissions (t/year)	-
NOx emissions (t/year)	-

Link-Belt Cranes, L.P., LLLP / Country: US Main products: Construction cranes



Energy consumption	
Paper (A4 1,000 sheets)	1,068
Electric power (1,000 kWh)	14,562
Gasoline (kL)	-
Heavy fuel oil (kL)	-
Light oil (kL)	-
LPG (t)	-
Natural gas (km³)	1,456
Water consumption (m ³)	22,540

Atmospheric discharge	
VOC emissions (t/year)	25.523
SOx emissions (t/year)	0.022
NOx emissions (t/year)	2.615

Sumitomo Machinery Corporation of America / Country: US Main products: Power transmission and controls



Energy consumption	
Paper (A4 1,000 sheets)	732
Electric power (1,000 kWh)	6,149
Gasoline (kL)	-
Heavy fuel oil (kL)	-
Light oil (kL)	-
LPG (t)	6
Natural gas (km³)	130
Water consumption (m ³)	2,339

Energy consumption

4.243

7,201

1

173

387

9,422

Paper (A4 1.000 sheets)

Gasoline (kL)

Light oil (kL)

LPG(t)

Heavy fuel oil (kL)

Natural gas (km³)

Water consumption (m³)

Electric power (1,000 kWh)

Atmospheric discharge	
VOC emissions (t/year)	0.918
SOx emissions (t/year)	-
NOx emissions (t/year)	-

Atmospheric discharge

7.100

VOC emissions (t/year)

SOx emissions (t/year)

NOx emissions (t/year)

Sumitomo (SHI) Demag Plastics Machinery GmbH / Country: Germany Main products: Plastics molding machines



Hansen Industrial Transmissions NV / ${\rm Country:}\ {\rm Belgium}\ {\rm Main\ products:}\ {\rm Power\ transmission\ and\ controls}$



Energy consumption	
Paper (A4 1,000 sheets)	542
Electric power (1,000 kWh)	7,374
Gasoline (kL)	-
Heavy fuel oil (kL)	-
.ight oil (kL)	-
_PG (t)	-
Natural gas (km³)	723
Water consumption (m³)	3,866

Atmospheric discharge	
VOC emissions (t/year)	4.159
SOx emissions (t/year)	-
NOx emissions (t/year)	1.030