Environment

Environmental management

Environmental policy promotion system

Toward achievement of YKK Sustainability Vision 2050, we established the YKK Sustainability Committee under the Management Strategy Committee. With the company president as its chair, the Committee is addressing environmental issues, such as climate change. The Committee is doing so by determining policies and strategies as well as by building a global sustainability promotion structure.

Environmental management system

YKK builds an environmental management system in each company that follows the ISO 14001 international standard and promotes continuous environmental activities.

Furthermore, YKK has formulated the YKK Global Criteria of Compliance (YGCC), which is based on internal rules related to working conditions, health and safety, the environment, and fair business practices. Self-checks are carried out once a year in addition to periodic external audits.

Environmental objectives and targets

YKK has established a mid-term environmental management policy and measures are analyzed every four years to fit the mid-term management policy. In the 6th mid-term environmental management policy, starting from FY2021, we are carrying out activities to achieve a sustainable society focusing on the concept of "Technology-oriented value creation" and with the aim of becoming a company for the social good that is in harmony with the environment. Activities are being carried out after formulating environmental objectives each year toward achievement of the environmental management policy.

YKK 6th Mid-term Environmental Policy (FY2021-FY2024)

Under the 6th Mid-term Management Vision, "Technology Oriented Value Creation," YKK will promote sustainability through its business activities and products, harmonize with the environment, continue to be a company for the social good, and contribute to society.

Guidelines for Action

- In accordance with YKK Sustainability Vision, we will strengthen our environmental management system and carry out continuous improvement to ensure environmental compliance and reduce environmental impacts.
- In order to achieve climate neutrality by 2050, we will reduce CO_2 and other greenhouse gas emissions over the long-term.
- We will reduce environmental impacts throughout the product life cycle and promote the transition to sustainable energy and materials.
- We will reduce our impacts and loads on the environment by reducing the use of water and chemical substances for the preservation of ecosystems and enrichment of life.

April 1, 2021
Hiroaki Otani
President, YKK Corporation

FY2022 YKK Environmental Objectives

Contribute to the society in harmony with environment

1 Response to climate change

- Scope1 & 2 emissions — 16.8% CO_2 emission reduction from 2018 (50% reduction by 2030)
- Scope 3 emissions — 10.0% CO_2 emission reduction from 2018 (30% reduction by 2030)

2 Reduce environmental impact

- Waste
  - Target waste recycling rate of 87% or more (90% by 2030 → 90% by 2025)
  - Reduce the total amount of waste by 2% from 2018 (20% reduction by 2030)
  - Switch plastic packaging and packing materials to sustainable materials
- Target water consumption (water intake) amount of 14% from 2018 (20% reduction by 2030)
- Promote appropriate management and reduction of chemical substances

3 Provide and propose environmentally friendly products

- Ensure the implementation of environmentally friendly themes in the development of products and equipment

4 Ensure compliance

- Continue to achieve zero environmental compliance violations and zero environmental accidents
  - Foster environmental human resources through environmental education
  - Strengthen environmental management system

Climate Change

Basic Philosophy

In March 2020, YKK signed the Fashion Industry Charter for Climate Action aimed at achieving the objectives of the Paris Agreement, to enable the company to achieve "Climate Neutral" by 2050. Further, in March 2021, we set a CO_2 reduction target of limiting the average worldwide temperature increase to 1.5°C (objective approved by the SBT), and we are working to implement energy conservation and renewable energy, in an aim to reduce CO_2 emissions at each of our business sites around the world.

FY2021 Initiatives

Despite the impact of the worldwide COVID-19 pandemic, we increased production volume over the previous fiscal year in FY2021 while achieving our target of reducing GHG emissions by 12.6% for FY2021 compared to FY2018. (Actual: 18.2% reduction from FY2018)

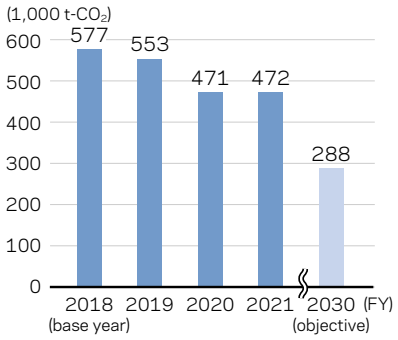
The entire Group is moving forward with renewable energy procurement, and eleven of our plants around the world have achieved procurement of 100% of their used power as renewable energy.

In addition, we are also creating renewable energy, including the operation of solar power generation equipment to newly generate 2,144 kW of power in China.

Changes in CO_2 emissions

YKK received an approval for its reduction target of 1.5°C from the Science Based Targets initiative in March 2021.
We will aim for a 50% reduction (compared to FY2018) of greenhouse gases in Scope 1 and 2, and a 30% reduction (compared to FY2018) in Scope 3 by 2030.

Scope 1, 2 * Calculated using the YKK Group GHG calculation rules (CO_2 conversion factor fluctuation of electricity)

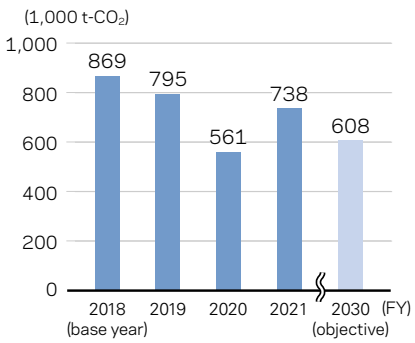


CO_2 emissions in FY2021 was reduced by 18.2% compared to FY2018

(1,000 t-CO_2)

	2018	2019	2020	2021
Japan	79	71	58	67
Americas	41	43	33	33
Europe	28	28	25	21
ISAMEA	46	46	35	47
ASEAN	226	215	178	169
China	157	150	142	133

Scope 3 * Calculated using the Scope 3 calculation method noted later (P.14)



CO_2 emissions in FY2021 was reduced by 15.1% compared to FY2018

(1,000 t-CO_2)

	2018	2019	2020	2021
Japan	230	197	116	147
Americas	106	91	62	88
Europe	41	41	32	43
ISAMEA	57	59	43	49
ASEAN	238	224	157	217
China	198	183	151	194

Breakdown of CO_2 emissions from the entire supply chain* (FY2021 results)

(1,000 t-CO_2)

			Region Total	Japan	Americas	Europe	ISAMEA	ASEAN	China
Scope1	Direct emissions from fuels burned on-site, etc.		89	11	11	17	10	25	15
Scope2	Indirect emissions from purchased power and the use of heat		383	56	22	5	37	145	118
Scope3	Category 1	Purchased Goods and Services	474	100	52	16	15	151	139
	Category 2	Capital Goods	73	24	6	10	8	18	7
	Category 3	Fuel- and Energy-Related Activities Not Included in Scope 1 or Scope 2	50	10	5	5	5	16	10
	Category 4	Upstream Transportation and Distribution	54	4	16	7	9	7	10
	Category 5	Waste Generated in Operations	1	0	0	0	0	0	0
	Category 6	Business Travel	1	0	0	0	0	0	0
	Category 7	Employee Commuting	9	5	1	1	0	2	0
	Category 8	Upstream Leased Assets	–	–	–	–	–	–	–
	Category 9	Downstream Transportation and Distribution	–	–	–	–	–	–	–
	Category 10	Processing of Sold Products	0	0	0	0	0	0	0
	Category 11	Use of Sold Products	–	–	–	–	–	–	–
	Category 12	End-of-Life Treatment of Sold Products	76	3	8	5	11	22	27
	Category 13	Downstream Leased Assets	–	–	–	–	–	–	–
	Category 14	Franchises	–	–	–	–	–	–	–
	Category 15	Investments	–	–	–	–	–	–	–
		Other	–	–	–	–	–	–	–
	Scope 3 Total		738	147	88	43	49	217	194
Scope 1, 2, and 3 Total			1,209	214	122	64	96	387	327

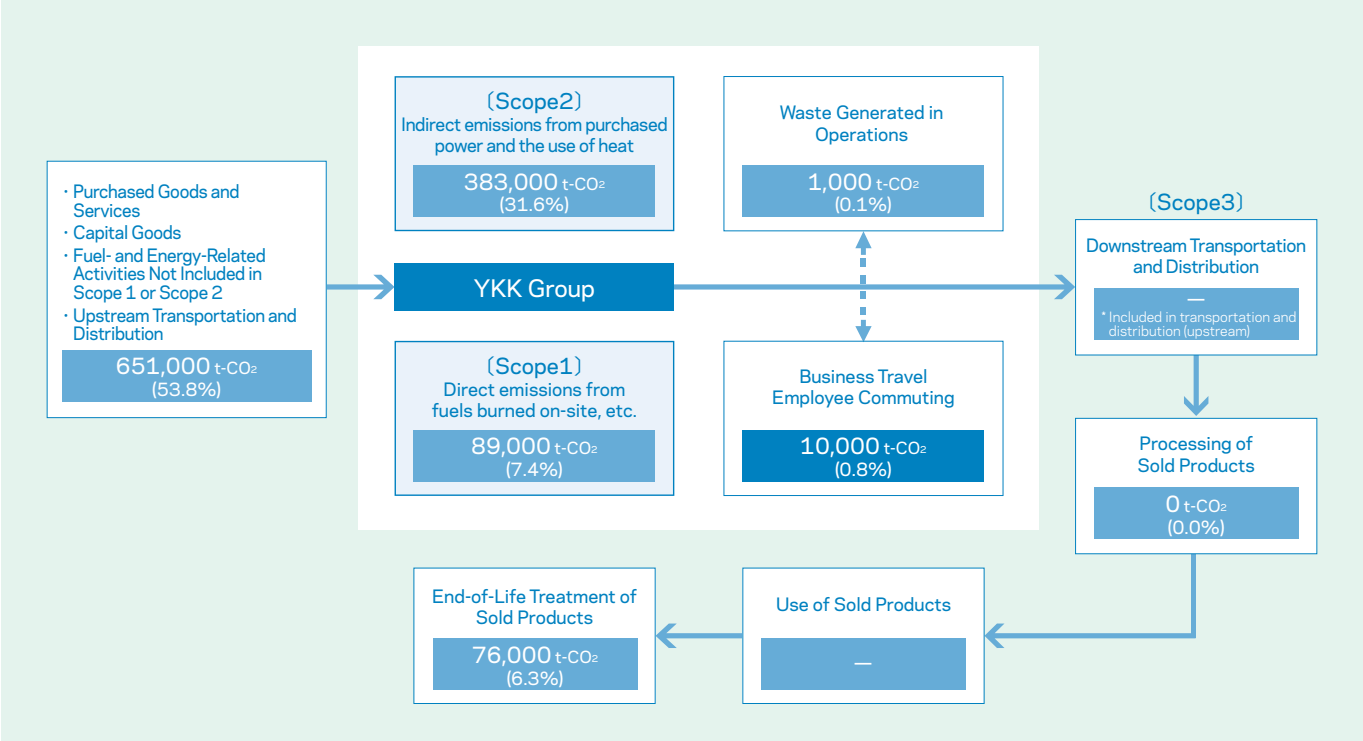
* Calculated using the YKK Group GHG calculation rules (CO_2 conversion factor fluctuation of electricity) and the Scope 3 calculation method noted later

Scope 3 calculation method (amount of activity x emission intensity)

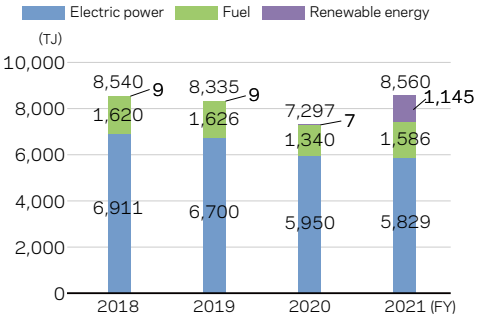
Categories		Calculation method	
		Amount of activity	Emission intensity
Category 1	Purchased Goods and Services	Weight of purchased raw materials	Intensity database (*1, *3)
Category 2	Capital Goods	Equipment investment value of capital goods	Intensity database (*1)
Category 3	Fuel- and Energy-Related Activities Not Included in Scope 1 or Scope 2	Amount of energy (electricity and fuel) consumption	Intensity database (*1, *2)
Category 4	Upstream Transportation and Distribution	Cargo owner's procurement ton-kilometers	Intensity database (*1, *2)
Category 5	Waste Generated in Operations	Amount of processed waste materials per type	Intensity database (*1, *2)
Category 6	Business Travel	Transportation allowance per transportation means	Intensity database (*1)
Category 7	Employee Commuting	Transportation allowance per transportation means	Intensity database (*1, *2)
Category 8	Upstream Leased Assets	We excluded emissions associated with the operation of the leased assets because they were included in Scope 1 and 2.	
Category 9	Downstream Transportation and Distribution	We excluded it because we included it in category 4 because the product is shipped directly to the customer.	
Category 10	Processing of Sold Products	Amount of production (duration and number of pieces)	Intensity per amount of production in YKK processing process
Category 11	Use of Sold Products	We excluded this because there are no use-stage emissions by the products we sold.	
Category 12	End-of-Life Treatment of Sold Products	Amount of production (weight)	Intensity database (*1, *3)
Category 13	Downstream Leased Assets	We excluded this because we do not lease to others.	
Category 14	Franchises	We excluded this because we are not franchise presidents.	
Category 15	Investments	We excluded it because we are not an investment business and not a financial services provider.	
	Other	We excluded this category because it is optional.	

*1 "Emission Intensity Database for Calculating Greenhouse Gas Emissions for Organizations through Supply Chains (Ver. 3.1)"
*2 "LCI Database IDEAv2 (for Calculating Greenhouse Gas Emissions for Supply Chains)"
*3 "GaBi Database"

CO_2 emissions in supply chains (FY2021 results)



Changes in energy consumption



(TJ)

		2018	2019	2020	2021
Electric power	Japan	1,090	1,067	863	1,067
	Americas	759	815	648	515
	Europe	393	316	288	74
	ISAMEA	474	517	442	609
	ASEAN	2,599	2,463	2,285	2,230
	China	1,596	1,522	1,424	1,334
Fuel	Japan	182	182	145	171
	Americas	229	212	153	204
	Europe	250	303	277	305
	ISAMEA	227	206	115	166
	ASEAN	451	461	382	439
	China	281	263	268	302
Renewable energy	Japan	3	3	2	8
	Americas	0	0	0	80
	Europe	0	0	0	99
	ISAMEA	4	3	2	54
	ASEAN	1	2	2	491
	China	1	1	1	413

* The graphs and tables have been created based on the combination of electricity, fuel and renewable energy. Fuel is the sum of A heavy fuel, kerosene, LPG, LNG, town gas, natural gas, diesel oil, gasoline, C heavy fuel, coal, and steam.

COLUMN

Introduction of the Internal Carbon Pricing Scheme

Example of installation of solar power generation equipment
YKK (U.S.A.) Inc. Anaheim Plant

In the previous fiscal year, YKK introduced an Internal Carbon Pricing Scheme (hereinafter, "ICP")* for in-house capital investment.

By using ICP to convert GHG emissions from new facilities into costs, and using them as a factor in investment decisions, we can encourage low-carbon investment, such as introducing low-energy facilities and renewable energy, and thereby promote carbon emission reductions in our business activities. In addition to introducing solar power facilities in 19 of our locations, we are pursuing low-energy strategies in our infrastructure and production facilities.

* ICP scheme: A mechanism to promote corporate action on climate change. A proprietary carbon price is set internally, and converted into costs for CO_2 emissions. These costs can be used as an incentive to reduce CO_2 emissions, to identify profit opportunities and risks, and as a guideline for investment decision making.

Internal carbon price	¥9,000/t-CO_2 (Common global price)
Target of the system	Capital investments that affect GHG emissions from business activities
Method of application	The internal carbon price is applied to GHG emissions from the relevant equipment investment plans and technology development plans, and the cost converted data is used as materials for assessing investments.

Material Resources

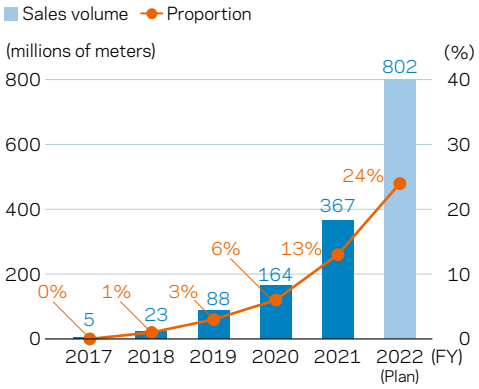
Basic Philosophy

Resources are crucial for monozukuri (manufacturing) companies, but the amount available is limited. In order to conduct sustainable business management, YKK is promoting efforts to achieve a circular economy. For example, we proactively research the use of recycled materials and plant-based materials and adopt and provide them in an aim to reduce waste throughout the lifecycle of our products. Meanwhile, we strive to recycle any generated waste materials as much as possible and to reduce the amount of waste that ends up in landfills.

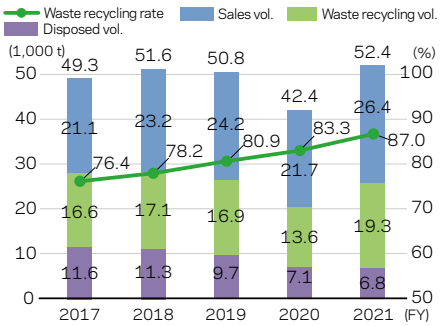
FY2021 Initiatives

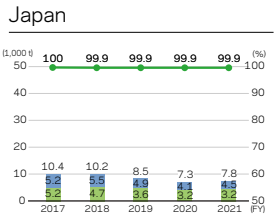
In "YKK Sustainability Vision 2050," YKK has set the target of "increasing the waste recycling rate to 90% by 2030." In FY2021, we conducted activities aimed at achieving a waste recycling rate of 81% or more. Thoroughly separating waste materials and strengthening reuse at each of our operating companies and improved waste processing technology in the Asia Region, and other factors, combined to result in a recycling rate of 87.0%, far exceeding the target. Meanwhile, the amount of waste is 2% higher than in FY2018, and waste materials tend to increase as production increases. As the world shows increasing interest in a circular economy, YKK is moving forward with efforts to recycle and reuse resources and reduce waste.

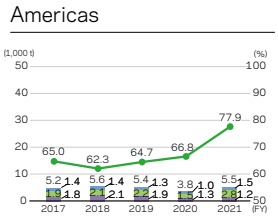
Volume and Proportion of Sustainable Materials Sales

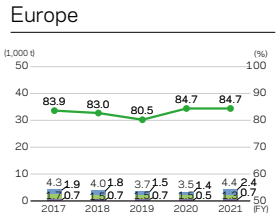


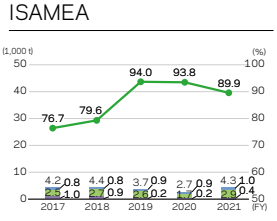
Changes in Waste Emissions, Waste Recycling Rates

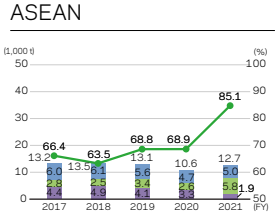


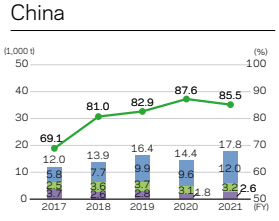












COLUMN

Switching to Sustainable Packaging Materials

30% biomass polyethylene inner packaging materials

YKK Zipper (Shenzhen) Co., Ltd. completed the change of part of its outer packaging materials to biodegradable biomass plastic materials in FY2021.

One of the five themes of the "YKK Sustainability Vision 2050" is "material resources." We are promoting efforts aimed at transitioning to a sustainable model by replacing all vinyl/plastic packaging materials used for our fastening products with sustainable packaging, including recyclable/reusable forms by 2030.

In FY2021, YKK Vietnam Co., Ltd. (Nhon Trach Plant) and YKK Japan Company (Kurobe Manufacturing Center) switched part of the plastic inner packaging of fastening products to sustainable materials.

We are promoting a switch to polyethylene containing 100% recycled materials at YKK Vietnam Co., Ltd. (Nhon Trach Plant) and 30% biomass material at the JAPAN Company (Kurobe Manufacturing Center). In FY2021 the switchover ratio was 19.2% and 38.9%, respectively.

In July 2022 at the JAPAN Company (Kurobe Manufacturing Center), the switch to biomass material for inner plastic packaging for fastening products, which was being gradually advanced since FY2021, was completed for main inner packaging.

Starting with the change to these inner packaging materials, YKK is moving forward with the transition from vinyl/plastic packing materials to sustainable materials at each of our fastening business sites around the world. The company will be unified in aiming to reach our targets by 2030.

Water Resources

Basic Philosophy

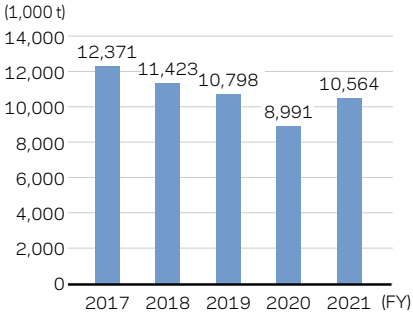
We believe that water is an important resource that is necessary for humans and other living organisms to continue living and a vital asset shared by the community. YKK strives to protect the community's water resources by implementing improvements to the manufacturing process and facilities for water recycling, thereby reducing water usage. In addition, we have implemented high-level processing of wastewater, and otherwise strive to reduce the environmental burden and prevent impact on the community's ecosystem.

FY2021 Initiatives

In FY2021, overall intake water globally was reduced by 7.5% (compared to FY2018), and the net sales intensity was reduced by 9.6% (compared to FY2020), which are significant decreases. Reasons include implementation of production facilities that can use water efficiently, development of technology for a process that enables manufacturing with less water, and promotion of implementation of water recycling technology.

In regard to efforts related to wastewater, globally, there was only one violation of the standard value for wastewater, which occurred at the Kurobe Manufacturing Center. In addition, we used online meetings to continue implementing wastewater processing diagnosis conducting engineer guidance for wastewater processing that was launched in 2014.

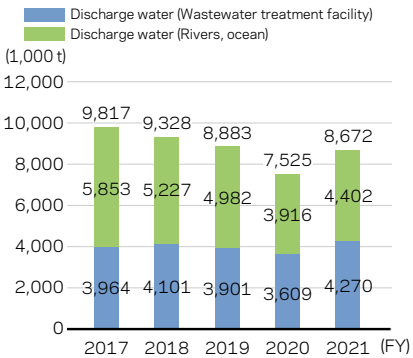
Changes in Intake Water (Total Amount)



Unit: 1,000 t

	2017	2018	2019	2020	2021
Japan	4,362	3,656	3,260	2,565	3,096
Americas	790	785	768	574	732
Europe	815	762	763	655	779
ISAMEA	808	778	856	638	927
ASEAN	3,511	3,399	3,325	2,957	3,126
China	2,085	2,043	1,826	1,602	1,904

Changes in Discharge Water (Total Amount)



Discharge water (Wastewater treatment facility) Unit: 1,000 t

	2017	2018	2019	2020	2021
Japan	23	25	24	14	20
Americas	522	586	643	488	555
Europe	410	398	381	365	445
ISAMEA	281	308	316	221	490
ASEAN	971	996	992	1,097	1,184
China	1,757	1,788	1,545	1,424	1,576

Discharge water (Rivers, ocean) Unit: 1,000 t

	2017	2018	2019	2020	2021
Japan	3,776	3,422	3,223	2,944	2,901
Americas	96	85	115	47	90
Europe	223	212	191	139	150
ISAMEA	59	59	59	47	205
ASEAN	1,699	1,449	1,394	739	1,056
China	0	0	0	0	0

COLUMN

Proactive Implementation of Water Recycling Technology

Water recycling at an overseas plant

YKK proactively strives to implement water recycling technology aimed at effective use of limited water resources. Currently, we recycle water at nine companies in Japan and overseas. At YKK Korea Co., Ltd., water used in metal zipper surface processing and water after wastewater processing is processed with an RO membrane and reused. Approximately 54,500 t of wastewater per year is recycled. In addition, at YKK do Brasil Ltda., factory wastewater that includes wastewater from multiple processes is processed using multiple membranes and reused. Approximately 37,000 t of wastewater per year is recycled. We will share cases in which it has already been implemented, laterally within the Group and proactively implement water recycling at sites where it has not yet been implemented, and design new water recycling technology, leading to reduction of intake water.

Water-related Initiatives at Kurobe

Investigation of aquatic organisms in a local river

YKK's technological headquarters Kurobe Manufacturing Center is located in a region with plentiful water resources, supported by the Northern Alps. Water used in the plant is cleaned in the company's wastewater processing facility, then released into a local river. We have set a voluntary management standard inside the company that is more stringent than the standard stipulated in governmental laws and regulations, and release water in strict compliance with that standard so that people's health and the living environment are not affected. In addition, YKK obtains the cooperation of specialists who work with our employees to investigate aquatic organisms in order to assess the amount of impact wastewater has on the ecosystem of the river where it is released. We have done this since 2001. In recent years, the results of the investigation have shown the presence of caddisflies and mayflies, which live in clean water. The presence of one of Toyama Prefecture's endangered species, the river sculpin, was also confirmed, indicating that there was little impact on the ecosystem where the water was released. We will continue to use water with consideration given to the local environment and ecosystem.

Chemical Management

Basic Philosophy

YKK works to maintain manufacturing and product safety through proper understanding and management of chemical substances and minimize environmental impacts by reducing the usage of chemical substances.

We comply with laws and agreements and also take action to mitigate environmental risks, such as by preserving the local environment including soil, ground water, air, and water, and are taking steps to prevent environmental accidents before they occur.

FY2021 Initiatives

In FY2021, we revised the YKK Restricted Substance List (YKK RSL) that was established based on laws, regulations, and industry standards for chemical substances related to fastening products to the FY2022 version and launched survey of suppliers for their compliance with the YKK RSL. Further, we standardized the process for confirming compliance of chemical substances at the time of new development and changes to materials and implemented it at each overseas company.

In addition, the development of paints that reduce the use of toluene and xylene for our main products was completed in July 2021, and we plan to switch one by one.

From the perspective of the environment, we compiled a record of the places where chemicals that can pollute the soil have been used, the method of use, and when they were used, etc.

In FY2022, we will take into consideration changes/additions to restrictions, laws, and regulations and industry standards related to chemical substances and make revisions annually in preparation to expand the scope of application of entry control based on the YKK RSL.

COLUMN

AcroPlating® New Plating Technology

Plating with AcroPlating®

AcroPlating® technology is a new surface finishing technology for brass materials with cyanogen, chromium, selenium, and other toxins removed 100%, and which does not use any chemicals used with conventional electroplating. YKK has acquired patents for the manufacturing method in multiple countries, including Japan. In addition to reducing the environmental burden by removing 100% of toxins, we reduced the GHG emitted in the manufacturing process by 96%, water usage by 66%, and electric power usage by 69%.* Further, cyanogen, chromium, and selenium are said to adversely affect the human body and health of biological organisms as well, so using AcroPlating® technology, which has 100% of those substances removed, will also lead to improvement of the manufacturing process work environment.

* Comparison of conventional plating and AcroPlating® technology on the 3Y GSBN8 NH3 product produced at the YKK Kurobe Manufacturing Center

AcroPlating®

Biodiversity

Basic Philosophy

YKK believes that our most precious stakeholder is nature and strives to become a company that can coexist and prosper together with nature. We thoroughly manage the chemicals and facilities, etc., that we use, and strive to prevent environmental accidents, in order to protect the ecosystem. In addition, we conduct tree-planting activities, etc., to protect the good local environment. Inside the Kurobe Manufacturing Center in particular, we are creating a forest and a waterside with the aim of achieving YKK founder Tadao Yoshida's ideal of a "factory in a forest."

FY2021 Initiatives

In FY2021, we continued to implement tree-planting activities and cleaning activities involving the community that we have been working on at each company around the world since before FY2020, as initiatives that take into consideration the ecosystem. We have conducted tree-planting activities at 16 business sites, for a total of approximately 5,160 trees planted. As for cleaning activities, a total of five sites cleaned beaches with members of the community in order to remove plastic waste and cleaned the neighboring areas.

Main Ecosystem Conservation Activities (FY2021)

Activity details	Activity location	Number of countries where implemented	Objective
Tree-planting activities	Around the factory	9	Absorption of GHGs by plants and maintenance of the ecosystem
	Community (kindergartens, parks, etc.)	4	
	Land affected by forest fires	1	Regrowth of forests on land that suffered damage from major forest fires in Turkey (5,000 trees planted)
Cleaning activities	Cleaning nearby beaches	1	Maintenance of the ocean's ecosystem through removal of plastic waste

COLUMN

YKK Center Park's "Furusato-no-Mori" (Hometown Forest) Earns the Highest Grade Certification from SEGES

YKK Center Park (Kurobe City, Toyama Prefecture)

Since 2008, the grounds of YKK's Kurobe Manufacturing Center have been home to a forest and waterside called "Furusato-no-Mori" (Hometown Forest) and "Furusato-no-Mizube" (Hometown Waterside), respectively. They are a revival of the natural scenery of Kurobe, and were created with the aim of achieving YKK founder Tadao Yoshida's ideal of a "factory in a forest" in 2034, the 100th anniversary of YKK's founding.

The Kurobe Manufacturing Center had been certified at the "Sodateru Midori" (Nurtured Greenery) Stage by the Social and Environmental Green Evaluation System (SEGES)* since 2016, but in March 2022, it was raised to the "Superlative Stage," which is the highest stage.

Materialization of the effects of green spaces through verification testing of the visualization of the amount of CO_2 absorption from green spaces that we have been working on in partnership with SoftBank Corporation since 2020 and the promotion of efforts for specialists to study dragonflies in Toyama Prefecture and other efforts to monitor the ecosystem garnered high praise. We will continue to utilize greenery for the next generation of environmental education and prepare to expand green spaces.

* Social and Environmental Green Evaluation System (SEGES): A system for evaluation of green spaces stipulated in the guidelines, etc., of the Ministry of Land, Infrastructure, Transport and Tourism and the Ministry of the Environment

Environmental Contribution Activities

Basic Philosophy

Under founder Tadao Yoshida's philosophy of "becoming part of the local community," YKK keeps in mind achieving prosperity together with the community, and places value on the connection with the local community as a member of society. Each business site conducts cleaning activities and other environmental contribution activities based on that thinking. In addition, we believe that teaching the children who are the next generation is crucial to solving environmental issues, so we host environmental learning at many business sites.

FY2021 Initiatives

In order to build a sense of unity in environmental activities around the world, business sites in Japan and overseas participated in "Earth Hour," a worldwide event to turn off lights hosted by the World Wildlife Fund (WWF). The event consisted in turning off lights at the same time on the same day all around the world. YKK turned off logo signs, indoor lighting, and outdoor lights, etc., for an hour as the relay of turning off lights made its way around the world.

In addition, because we believe that it is important to consider the environment not only at work but also at home, we hosted an event to implement efforts to reduce CO_2 emissions at home in an aim to cultivate an awareness of the environment in each employee.

Main Environmental Contribution Activities (FY2021)

Activity details	Number of countries where implemented	Remarks
Activities to turn off lights	24 (32 sites)	Participation in "Earth Hour," a worldwide event hosted by the WWF
Cleaning activities	4	Cleaning areas around the premises, nearby bus stops, etc.
Environmental education for the next generation	3	Introduce environmental issues and YKK's environmental activities to children in the community and teach them the importance of environmental protection
Collaboration with the government	1	Participation in the CSR activities of the Department of Industrial Works of the Ministry of Industry of Thailand
Lecture activities *Japan only calculated	1 (6 times)	Lectures on YKK's environmental activities at community groups, universities, environmental events, etc.

COLUMN

Promotion of Environmental Education and Activities to Raise Awareness in India

A scene of environmental education for children

YKK India Pvt. Ltd. is working proactively on activities to raise awareness of social and environmental issues.

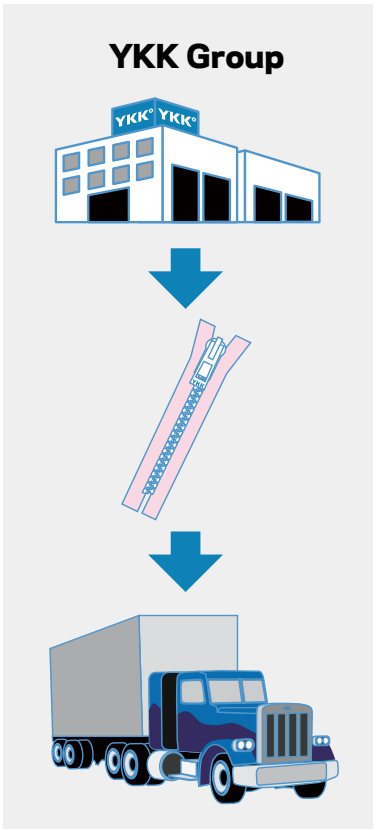
Although activities were not possible for two years due to COVID-19, the company implemented initiatives to raise environmental awareness and hosted an art contest related to environmental issues for 160 students at three nearby village schools each year. Environmental issues are one of the main concerns in the world. We will continue providing education and awareness activities for children to enable them to think about environmental issues and protect the global environment.

[Reference] Fastening Business and Other Businesses Related to Business Operations (Japan)

Environmental impact mass-balance (FY2021 results)

INPUT

Electric power (electric power purchased from power companies)	109.3 million kWh
Fuel (heavy fuel oil, kerosene, gas, light oil, gasoline)	Energy equivalent: 171 TJ
Water (not including reused water)	3.1 million t
Chemical substances (PRTR substances)	506.1 t
Raw materials (metal, resin, etc.)	32,683 t



OUTPUT

CO_2	67,000 t-CO_2
Estimated amount of fluorocarbons leaked	85.2 t-CO_2
NOx	8.9 t
SOx	2.9 t
Wastewater	2.92 million t
BOD	15.7 t
Amount of waste disposed	7,755.3 t
Amount of waste recycled (recycling rate)	7,749.3 t 99.9%

■ Violations of environmental laws and regulations

We have not had any administrative actions or fines imposed related to environmental laws and regulations in the past five years.

Status of Compliance at YKK Corporation and YSF (results)

Air Pollution Control Act: Exhaust gas (Production sites in Japan, FY2021 results)

Equipment	Plant	Soot and dust (g/Nm³)					Nitrogen oxide (ppm)				
		National emissions standard	Municipal agreed value	Highest value measured in FY2021	Assessment	(Reference) Voluntary emission standard	National emissions standard	Municipal agreed value	Highest value measured in FY2021	Assessment	(Reference) Voluntary emissions standard
Boilers	YKK Corporation	0.30	–	Below 0.01	Acceptable	0.05	180	–	83	Acceptable	80
	YSF	–	–	–		–		–	–		–

Water Pollution Prevention Act: Wastewater (Production sites in Japan, FY2021 results)

Unit: mg/l (except pH)

Item	Plant	National emissions standard	Prefectural water emissions standard	Municipal agreed value	Highest value measured in FY2021	Assessment	(Reference) Voluntary management standard
pH	YKK Corporation	5.8~8.6	5.8~8.6	5.8~8.6	Min.: 6.6 Max.: 7.5	Acceptable	6.0~8.4
	YSF	–	–	5.0~9.0	Min.: 6.6 Max.: 7.2	Acceptable	5.8~8.8
BOD	YKK Corporation	120	15	15	32.0	Not acceptable	5
	YSF	–	–	600	131.0	Acceptable	200
COD	YKK Corporation	–	–	–	8.3	Acceptable	12
	YSF	–	–	–	–	Acceptable	–
Suspended solids	YKK Corporation	150	90	50	5.0	Acceptable	10
	YSF	–	–	600	78.0	Acceptable	120
Oil	YKK Corporation	5	–	3	Less than 0.5	Acceptable	1
	YSF	–	–	35	27.0	Acceptable	18
Cyanide	YKK Corporation	1	–	0.1	Less than 0.01	Acceptable	0.02
Hexavalent chromium compound	YKK Corporation	2	–	0.1	Less than 0.02	Acceptable	0.03

* YKK Corporation discharged into a river, and YSF discharged into a wastewater treatment facility.

Water Pollution Prevention Act: Ground water (Production sites in Japan, FY2021 results)

	Substance	Unit	Environmental standard*	Measurement results for FY2021	Assessment
Volatile organic compounds	Dichloromethane	mg/l	0.02 or less	Less than 0.002	Acceptable
	Carbon tetrachloride	mg/l	0.002 or less	Less than 0.0002	Acceptable
	1,1-Dichloroethylene	mg/l	0.1 or less	Less than 0.002	Acceptable
	Cis-1,2-Dichloroethylene	mg/l	0.04 or less	Less than 0.004	Acceptable
	1,1,1-Trichloroethane	mg/l	1 or less	Less than 0.0005	Acceptable
	Trichloroethylene	mg/l	0.01 or less	Less than 0.002	Acceptable
	Tetrachloroethylene	mg/l	0.01 or less	Less than 0.0005	Acceptable
Heavy metals	Cadmium	mg/l	0.003 or less	Less than 0.001	Acceptable
	Cyanide	mg/l	Not detected	Less than 0.1	Acceptable
	Lead	mg/l	0.01 or less	Less than 0.005	Acceptable
	Hexavalent chromium	mg/l	0.05 or less	Less than 0.005	Acceptable
	Selenium	mg/l	0.01 or less	Less than 0.002	Acceptable
	Fluorine	mg/l	0.8 or less	0.1	Acceptable
	Boron	mg/l	1 or less	Less than 0.1	Acceptable

* Environmental standard: Keeping the amount below this standard is desirable for protection of human health and preservation of the living environment.

Noise Regulation Act: Noise (Production sites in Japan, FY2021 results)

Unit: db

Plant	Type	Prefectural standard	Municipal agreement on pollution control	Highest value measured in FY2021	Assessment	(Reference) Voluntary standards
YKK Corporation	Daytime (8:00 A.M. to 7:00 P.M.)	70	60	58	Acceptable	60
YKK Corporation	Morning (6:00 A.M. to 8:00 A.M.) Evening (7:00 P.M. to 10:00 P.M.)	65	55	51.6	Acceptable	55
YKK Corporation	Late night (10:00 P.M. to 6:00 A.M.)	63	50	50	Acceptable	50
YSF	Daytime (8:00 A.M. to 7:00 P.M.)	70	70	64	Acceptable	70
YSF	Morning (6:00 A.M. to 8:00 A.M.) Evening (7:00 P.M. to 10:00 P.M.)	65	65	57	Acceptable	65
YSF	Late night (10:00 P.M. to 6:00 A.M.)	60	60	54	Acceptable	60

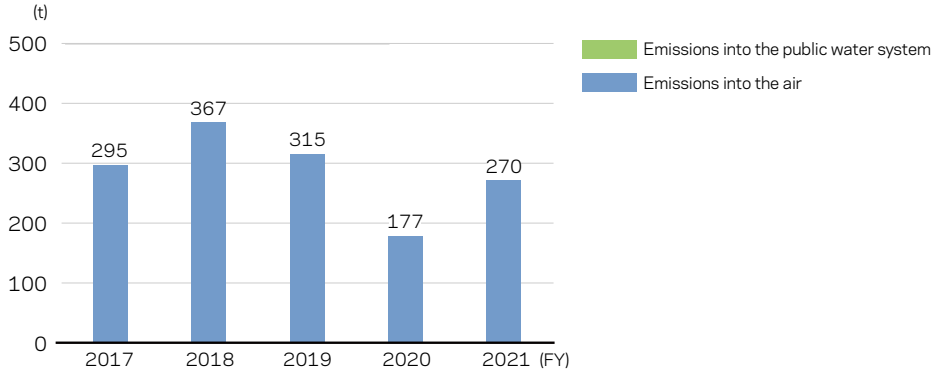
PRTR method: PRTR calculations (Production sites in Japan, FY2021 results)

Unit: t

Substance number	Substance	Volume handled	Emissions				Transfer amount to sewer system	Transfer amount		Consumption
			Atmospheric emissions	Public water emissions	Soil emissions	Landfill volume		Waste materials	Sewage	
1	Zinc compounds (water-soluble)	2.58	Less than 0.01	0.00	–	–	0.02	0.08	–	2.48
53	Ethylbenzene	3.61	3.51	0.00	–	–	0.00	0.05	–	0.00
71	Ferric chloride	8.90	0.00	0.00	–	–	8.90	0.00	–	0.00
80	Xylene	34.34	6.51	0.00	–	–	3.24	0.33	–	4.84
144	Inorganic cyanide compounds	25.67	0.05	0.03	–	–	5.12	20.38	–	0.10
232	N,N-dimethylformamide	150.17	150.17	0.00	–	–	0.00	0.00	–	0.00
296	1,2,4-Trimethylbenzene	17.63	6.18	0.00	–	–	4.42	0.00	–	7.02
300	Toluene	115.98	103.65	0.00	–	–	7.60	1.92	–	0.00
308	Nickel	64.15	0.01	0.00	–	–	0.00	6.83	–	56.16
395	Water-soluble salts of peroxydisulfuric acid	3.68	0.00	0.00	–	–	3.68	0.00	–	0.00
412	Manganese and manganese compounds	55.64	0.06	0.00	–	–	0.00	0.00	–	51.46
438	Methylnaphthalene	23.73	0.00	0.00	–	–	0.00	0.00	–	23.73

* Aggregated substances of which we handle 1 t or more (0.5 t or more per year for Class1 Designated Chemical Substances) per year at our domestic production locations
* Consumption: The amount consumed as raw materials, the amount contained in products, or the amount recycled by being sold
* Transformed amount: The amount that has been transformed into other substances by incineration, reactive processing, etc.

Changes in Emissions of PRTR Substances (Production sites in Japan)



Environmental accounting

Actual environmental conservation costs (YKK alone, FY2021 results)

Unit: ¥1 million/year

Item		Description of main initiatives	Equipment investment	Cost
Costs within business area	Prevention of pollution	Replacement of wastewater treatment facilities	92	271
	Conservation of the global environment	Improvements in energy efficiency, replacement of air conditioning and compressors	33	95
	Recycling of resources	Promotion of resource recycling and management of industrial waste	0	43
Business area internal cost total			125	409
Upstream/downstream costs		Sustainable procurement	11	9
Management activities costs		Maintenance of ISO certifications, environmental information disclosure, environment-related analyses	6	479
R&D costs		Product development	27	136
Social activities costs			0	0
Environmental damage repair costs		Soil contamination measures work, ground water measures work	18	266
Other costs		Inspection/management of fire extinguishing equipment	0	15
Total			187	1,314
		FY2020	220	774
		FY2019	183	952
		FY2018	288	1,559
		FY2017	341	1,646

	Environmental equipment investment			Environmental costs		Sales (Unit: ¥100 million)	Total equipment investment (Unit: ¥100 million)
	Amount (Unit: ¥100 million)	Ratio to sales (%)	Equipment investment ratio (%)	Amount (Unit: ¥100 million)	Ratio to sales (%)		
FY2021	1.9	0.2	3.2	13.1	1.4	910	59
FY2020	2.2	0.3	4.0	7.7	1.2	641	55
FY2019	1.8	0.2	1.6	9.5	1.0	908	115
FY2018	2.9	0.3	2.4	15.6	1.6	988	121
FY2017	3.4	0.4	3.5	16.5	1.9	855	98