



Initiatives in FY2017

In line with the voluntary environmental conservation plan, a voluntary plan is being created from the four aspects of "Global Warming Measures," "Resource Recycling," "Pollution Prevention," and "Environmental Management" and initiatives for the plan are being promoted.

Main Initiatives and Results

(excerpted from the Fifth Voluntary Plan for the Environment)

- Launched the new Impreza model incorporating an environmental engine and CVT both domestically and to the global market.
- Reduced CO₂ emissions per production value from domestic production plants by 43% from FY2007 levels.
- Achieved a 10% reduction in CO₂ emission base units for distribution from FY2007.
- Achieved a 95% or greater recycle rate in FY2017 by promoting a recycling-centric design for new vehicles.
- Continued zero landfill at foreign and domestic production plants.
- Expanded development of a low-noise tire with good fuel economy and promoted reduction of road noise.

▶ Established new Environmental Policy



▶ All domestic dealers continued to obtain EA21 Certification



▶ Conducted water risk assessment at major plants





▶ **Environmental Vision**



▶ **Environmental Management**



▶ **Environmentally Friendly Automobiles**



▶ **Environmentally-conscious Procurement**



▶ **Climate Change**



▶ **Recycling-based Society**



▶ **Water Resources**



▶ **Preventing Pollution**



▶ **Biodiversity**



▶ **Environmental Data**



▶ **Environmental Performance
by Manufacturing Division
and Tokyo office**



SUBARU Environmental Policies

[Established in April 1998, revised in April 2017]

< SUBARU Sustainability Principles >

”The earth, the sky and nature“ are Subaru’s fields of business.

With the automotive and aerospace businesses as the pillars of Subaru’s operations, our fields of business are the earth, the sky and nature.

Preservation of the ecosystem of our planet, the earth, the sky and nature, is of utmost importance to ensure the future sustainability of both society and our organization.

We align our business strategy to enhance these global goals in all of our operations.



1. We develop and deliver products to meet societal needs and contribute to the environment through advanced technologies.

By striving to create advanced technologies that put the environment and safety first, we will develop and deliver products that can contribute to protecting the earth's environment.

2. We focus on efforts aimed at coexistence with nature.

Together with efforts to reduce carbon-dioxide emissions in all of our operations, we will promote active engagement with nature by stressing forest conservation.

3. We take on challenges as one through an all-Subaru approach.

Utilizing our unique organizational character that allows us to oversee the entire supply chain, all of us together will take on the challenges of environmental protection of our planet through an all-Subaru approach.

< Environmental Principles >

Subaru's fields of business are the earth, the sky and nature. Subaru understands that the health and preservation of biodiversity and controlling climate change are critical to ensuring a sustainable future for our planet earth, nature, communities and businesses.

Products:	We develop our products and conduct R&D in light of the lifecycle environmental impacts of our products.
Purchasing:	Our purchasing activities reflect consideration for biodiversity and other aspects of environmental protection.
Production:	We strive to minimize our environmental impact through improving energy efficiency and waste management.
Logistics:	We strive to minimize our environmental impact through enhancing energy efficiency and promoting pollution prevention.
Sales:	We endeavor to recycle resources efficiently and reduce waste.
Management:	We will strive to improve our sustainability program through contributions that meet societal needs and by publicizing our activities as Team Subaru.

Message from the Environmental Committee Chair

Aiming for a Sustainable Society

On April 1, 2017, we changed our company name to Subaru Corporation. In addition, the environmental policy was revised to become the "Subaru Environmental Policy" at the same time as the corporate name change. The new Subaru Environmental Policy is based on the concept that "the earth, the sky and nature are Subaru's fields of business," and considers preservation of the ecosystems of our planet, in which Subaru's industrial fields of the automotive and aerospace industries, or "the earth, the sky and nature", is of utmost importance to ensure the future sustainability of both society and organization. We align our business strategy to enhance these global goals in all our operations. We will strive in all of our corporate activities with this in mind.

Specific activities include acquisition of ISO14001 and Eco Action 21 Value Chain certification, and also by evolving our efforts to the entire Subaru group, a highly efficient environmental management adapted to the industry would be achieved throughout the entire supply chain. At the same time, the Subaru Environmental Policy focuses on initiatives aimed at co-existence with nature. The "Subaru Forest Project" activity that we started as one of those initiatives takes place in Subaru owned forests where forest maintenance and conservation activities are to be carried out with cooperation from local communities.

The 2017 Environmental Report focused on our efforts to address environmental issues such as the entire corporate supply chain and product life cycles from the procurement of raw materials to the manufacturing, distribution, marketing and selling, recycling, and disposal of products. Please read through this information and feel free to leave your frank opinions and impressions.

We will continue to aim for a sustainable society through continuously improving corporate values and contributing to creating a better society and environment based on our management philosophy of aiming to be "a compelling company with a strong market presence."



Director of the Board
Corporate senior
Vice President

Environmental
Committee Chair,
Yoichi Kato

Subaru Voluntary Plan for the Environment

Among the targets set in the Fifth Voluntary Plan for the Environment, 95% or greater targets have been achieved.

The Sixth Voluntary Plan for the Environment links the fiscal year plan for the mid-term management plan with the target year of 2020, and intensifies the content for activities to be linked to global approach to the environment.

The 5th Voluntary Plan for the Environment (FY2013 to FY2017)

- > 1. Global Warming 
- > 2. Resource Recycling 
- > 3. Pollution Prevention and Reduction of Hazardous Chemical Use 
- > 4. Environmental Management 

Subaru Voluntary Plan for the Environment
The 5th Voluntary Plan for the Environment (FY2013 to FY2017)

[1] Global Warming

Field	Item	Target/Initiative (Up to FY2017)	FY2017				
			Target	Results	Evaluation		
A. Green Products	Fuel economy improvement	◆ Continue to improve fuel economy through full model changes and annual improvements.	◇ Improve fuel economy by 30% over older models through innovations to environmental engines/CVTs. ◇ Introduce horizontally opposed direct-injection turbo engines to the market.	• Introduce the next generation IMPREZA incorporating the environmental engine and CVT to the marketplace.	• Introduced the New Impreza from the domestic to the global marketplace.	—	
		◆ Promote fuel economy improvements to conform to fuel economy/GHG emissions standards in each country/region.	◇ Japan: Meet the 2015 Fuel Economy Standards. ◇ Overseas: Meet the fuel economy/GHG emissions standards in each region.	• Continue to conduct monitoring in each country/region.	• Japan: Met the FY2016 fuel economy standards in eight of the nine categories, and made it possible to compensate with credit for remaining one category. Calculation results expected to be ready in mid-June. • EU: Met the target with exceeded regulatory values. • China: Met 2016 fuel economy regulations.	○	
	Clean energy use	◆ Introduce hybrid cars into the market.	◇ Introduced hybrid cars into the Japanese market in 2013.	• Transition from advanced development to the mass production development stage, and prepare for making design specifications more precise and adding an outlook that includes productivity.	• Completed confirmation of the performance confirmation phase as planned and shifted to the production development completion confirmation phase.	○	
		◆ Conduct research aimed at the launch of electric vehicles in the market.	◇ Promote electric vehicle research.	• Continue to promote research for introducing electric vehicles and PHEVs to the market.	• Completed basic development and started motorized parts trial production toward advanced development of vehicles starting next fiscal year.	○	
		◆ Promote diesel engines' improvement and launch into the market of diesel engines.	◇ Promote compliance with the Euro 6 for horizontally opposed diesel engines.	(Completed the final target for the Fifth Voluntary Plan one year ahead of schedule).	(Completed the final target for the Fifth Voluntary Plan one year ahead of schedule).	—	
	Control of global warming from air conditioning refrigerants	Automobiles	◆ Promote and establish technologies to reduce exhaust gas and improve fuel economy by fusing electronic control and general-purpose engines.	◇ Promote development of fuel-injection general-purpose engine models and promote their wide introduction into the market.	• Make efforts to reduce exhaust gas and improve fuel economy with feedback control technology.	• Introduced feedback control into the fuel-injection system and completed air-fuel ratio optimization tests.	○
			◆ Promote the development of air conditioners that use low global warming potential refrigerants.	◇ Further promote the development of low global warming potential air conditioners.	• Further promote development of low global warming potential air conditioners.	• Development proceeded as planned to expand deployment of low global warming potential air conditioners.	○
B. Green Factories, Distribution, and Offices	Production facilities	◆ Reduce CO ₂ emissions per unit of production at domestic production facilities.	◇ Reduce CO ₂ emissions per unit of production by 10% from FY2007 level by FY2017 at domestic production facilities.	• Reduce CO ₂ emissions per unit of production at domestic production facilities by 10% from FY2007 level.	• Reduced CO ₂ emissions per unit of production at domestic production facilities by 43.0% from FY2007 levels.	○	
		◆ Promote activities to reduce CO ₂ emissions at overseas production facilities ^{*)} .	◇ For overseas production facilities, set medium term CO ₂ emissions targets and conduct activities to attain them.	• CO ₂ emissions increased due to factory expansion. The target is set to 251,151 t-CO ₂ .	• Achieved the target with the result of 191,031 t-CO ₂ .	○	
	Distribution	◆ Promote CO ₂ emissions reduction activities synchronized with the Energy Saving Law.	◇ Use FY2007 per unit of CO ₂ emission as BM, and reduce emission by 1% every year.	• Aim for a 10% reduction in per unit of CO ₂ emissions using FY2007 as the reference point. (Annual target for completed cars: CO ₂ base unit of 30.94 kg/unit)	• Achieved per unit of CO ₂ emission goals for completed cars, CKD, parts and accessories. • Achieved a 10% reduction in per unit of CO ₂ emission from FY2007 for completed cars. (Achieved CO ₂ base unit of 26.23 kg/unit rather than the annual target of 30.94 kg/unit).	○	
	Offices	◆ Ensure compliance with the Energy Saving Law.	◇ Use FY2010 per unit of energy use as BM, and reduce energy use by 1% every year (across the company including offices).	• Achieve average annual reduction of 1% per base unit.	• Achieved the 1% average annual reduction from BM year across the entire business.	○	

*) SIA : Subaru of Indiana Automotive, Inc.

Subaru Voluntary Plan for the Environment
The 5th Voluntary Plan for the Environment (FY2013 to FY2017)

[2] Resource Recycling

Field	Item	Target/Initiative (Up to FY2017)	FY2017				
			Target	Results	Evaluation		
A. Green Products	Recyclability improvement	Automobiles	◆ Continue to implement measures to comply with the Automobile Recycling Law. ◆ Continue to implement measures to make parts and materials more detachable, separable, and sortable.	◇ Promote new model designs that consider recycling, and contribute to an actual recycling rate of 95% by 2015.	• Continue to promote designs that consider recycling.	• As a result of promoted a design for recycling consideration, a recycling rate achieved more than 95%.	○
B. Green Factories and Offices (Dealerships)	Production facilities	◆ Continue the appropriate disposal of waste and reducing waste generation.	◇ Continue the appropriate management of waste and reducing waste generation by improving yield and packaging.	• Set the target value of 13,707 tons for the quantity of industrial waste generation only. • Promote reduction measures. • Intensify suppression of waste generation.	• Achieved the target with track record of 14,052 t-CO ₂ .	○	
		◆ Continue zero emission (zero landfill waste either directly or indirectly) at both domestic and overseas production facilities.	◇ Continue zero emission at both domestic and overseas production facilities.	• Japan: Zero waste disposed at landfills. Continue to maintain zero emissions. • Overseas: Zero waste disposed at landfills. Continue to maintain zero emissions.	• Japan: Continued to meet zero waste disposed at landfills. • Overseas: Continued to meet zero waste disposed at landfills.	○	
		◆ Reduce water use at both domestic and overseas production facilities.	◇ Reduce water use at production facilities across Group companies in and outside Japan.	• Reduce water use per unit of production at domestic production facilities by 5% from FY2012 level. • Set a target of 987,432 m ³ for operation of the Second Paint Factory.	• Reduced water use per unit of production at domestic production facilities by 45% from FY2012 level. • SIA met the water use target with 821,169 m ³ . (Reused water in the painting process)	○	
	Offices (Domestic dealerships)	Automobiles	◆ Continue the collection of used bumpers.	◇ Continue the collection of used bumpers.	• Continue the collection scheme and promote recycling of repair-exchanged bumpers.	• Continued the collection and recycled 32,936 repair-replacement bumpers (Subaru genuine parts + pre-delivery inspection).	○

Subaru Voluntary Plan for the Environment
The 5th Voluntary Plan for the Environment (FY2013 to FY2017)

[3] Pollution Prevention and Reduction of Hazardous Chemical Use

Field	Item	Target/Initiative (Up to FY2017)	FY2017			
			Target	Results	Evaluation	
A. Green Products	Reduction in emissions	<ul style="list-style-type: none"> Promote the introduction of low-emission vehicles to improve air quality. 	<ul style="list-style-type: none"> Japan: Increase the number of models (produced by Subaru) achieving a 75% reduction from the 2005 regulatory values. Overseas: Promote the introduction of low-emission vehicles to improve air quality in each country and region. 	<ul style="list-style-type: none"> In order to reduce emissions on a global scale, continue to promote development in compliance with the latest exhaust gas regulations and low-emission systems of each country and region. 	<ul style="list-style-type: none"> Completed development in compliance with EURO6c for the European model of Legacy. Promoting development for real world exhaust gas control. 	○
	Reduction in noise	<ul style="list-style-type: none"> Promote the development of technologies for noise reduction that can also improve fuel economy and reduce emissions. 	<ul style="list-style-type: none"> Promote the development of noise reduction technologies that consider driving conditions on urban roads. 	<ul style="list-style-type: none"> Promote development of car models that reduce environmental noise during actual driving on urban roads. 	<ul style="list-style-type: none"> Improved fuel efficiency. Expanded deployment of a low-noise tire and promoted reduction of driving noise. 	○
	Reduction in the use of environmentally hazardous substances	<ul style="list-style-type: none"> Promote the management and reduction in the use of environmentally hazardous substances. Overseas: Comply with related laws and regulations, including the EU directives. 	<ul style="list-style-type: none"> Improve management of chemical substances contained in products. Promote the development of technologies to switch to substances with lower environmental impact. 	<ul style="list-style-type: none"> Promote preparations for testing all parts as part of the improved management of chemical substances using IMDS. Promote switching to substances with lower environmental impact. 	<ul style="list-style-type: none"> Advanced preparations for IMDS all parts testing and promoted improving chemical substance management. Promoted switching to substances with lower environmental impact. 	○
	Automobiles	<ul style="list-style-type: none"> Further reduce per unit of VOC emissions (g/m²) at production lines. 	<ul style="list-style-type: none"> Reduce per unit of VOC emissions to below 47.8 g/m² (a 48.1% reduction from the FY2001 level). 	<ul style="list-style-type: none"> Continue improving thinner recovery devices, and set the FY target to be 47.8 g/m² or less. 	<ul style="list-style-type: none"> Achieved the FY target with track record of 47.7 g/m². 	○
	Management and emission reduction of environmentally hazardous substances at production facilities	<ul style="list-style-type: none"> Continue to reduce emissions of PRTR substances into the environment. Promote activities targeting the elimination of occurrences of hazardous substances leaking off site, complaints, and exceeding legal standards. 	<ul style="list-style-type: none"> Identify and manage the chemical substances regulated by the PRTR law and promote further reduction in the use of these substances. Promote activities targeting the elimination of occurrences of hazardous substances leaking off site, complaints, and exceeding legal standards through environmental risk reduction activities. Set stricter voluntary standards and conduct small-risk elimination activities. 	<ul style="list-style-type: none"> Continue to perform accounting management for PRTR substances. Eliminate all occurrences of hazardous substances leaking off site, environmental complaints and exceeding legal standards. To prevent environmental accidents and complaints, promote improvement in equipment as well as improve communication with regional and local residents. 	<ul style="list-style-type: none"> Performed accounting management for PRTR substances. Received two environmental complaints and measures were completed. Received one incidents of on-site leaking and measures were completed. Occured one exceeding standard value and measures were completed. 	○

As for VOC emission targets after FY2015, the annual targets were revised due to changes in production volume. (FY2017: revised from 47.4g/m² to 47.8g/m²)

Subaru Voluntary Plan for the Environment
The 5th Voluntary Plan for the Environment (FY2013 to FY2017)

[4] Environmental Management

Field	Item	Target/Initiative (Up to FY2017)	FY2017			
			Target	Results	Evaluation	
A. Green Products	Research on traffic environments	<ul style="list-style-type: none"> Work further on Intelligent Transport System (ITS) and the development of traffic accident prevention technologies in order to realize a safer and more comfortable motorized society. 	<ul style="list-style-type: none"> Promote efforts to develop an Advanced Safety Vehicle (ASV). Promote efforts to develop a safe driving support system that is in coordination with infrastructure. 	<ul style="list-style-type: none"> Continue to promote activities in line with the promotion plan for SP (Strategic Innovation Promotion Program) automated travel systems and development toward putting of accident prevention technology utilizing inter-vehicle communications into practical use. Continue to promote development to expand advanced driver assist system and development for early implementation of automated driving. 	<ul style="list-style-type: none"> Continuously promoted activities in line with the promotion plan for SP (Strategic Innovation Promotion Program) automated travel systems and development toward putting of accident prevention technology utilizing inter-vehicle communications into practical use. Continue to promote development to expand advanced driver assist systems and development of early implementation of advanced automated driver assist systems. 	○
	Automobiles	<ul style="list-style-type: none"> Expand deployment of an advanced driver assist system and promote the development of technologies for further enhancement. 	<ul style="list-style-type: none"> Further promote technological development to expand deployment of "EyeSight (ver.2)", advanced driver assist system. 	<ul style="list-style-type: none"> Continue to identify assessment trends of each country. Continue to promote technological development to remain top class. 	<ul style="list-style-type: none"> In line with the deployment plan of each model for EyeSight version 3, continuously promoted development compatible with the assessment in each country. Identified assessment trends of each region after 2020 and incorporated them into development planning. 	○
	Promotion of lifecycle assessment	<ul style="list-style-type: none"> Promote disclosure of lifecycle assessment (LCA) data. 	<ul style="list-style-type: none"> Promote disclosure of LCA data starting with cars that have undergone full model changes. 	<ul style="list-style-type: none"> Continue to calculate and disclose the LCA data for models that have undergone full model changes. 	<ul style="list-style-type: none"> Performed and disclosed LCA calculation for the new Impreza. 	○
Green procurement activities	<ul style="list-style-type: none"> Request both domestic and overseas suppliers to maintain the structure to establish environmental management systems (EMS). 	<ul style="list-style-type: none"> Maintain the structure to establish EMS including new suppliers. Review the green procurement guidelines and revise as necessary. 	<ul style="list-style-type: none"> Continue to maintain the structure to establish EMS. (Automobile) Continue to maintain the structure to establish EMS including new suppliers. (Aerospace CFI) Continue to maintain the structure to establish EMS including new suppliers. (Industrial Products CFI) Continue to maintain the structure to establish EMS including new suppliers. Continue to disseminate information to suppliers. 	<ul style="list-style-type: none"> Maintained the structure to establish EMS. (Automobile) 377 companies established including 8 new suppliers (100%). (Aerospace CFI) 98 companies established including 12 new suppliers (100%). (Industrial Products Division) 122 suppliers established. (100%). Deployed and spread green procurement guidelines to new suppliers. 	○	
	<ul style="list-style-type: none"> Reduce environmentally hazardous substances. 	<ul style="list-style-type: none"> Encourage suppliers to further improve management of and reduce the use of environmentally hazardous substances contained in parts and materials. 	<ul style="list-style-type: none"> Continue to investigate content of environmentally hazardous substances. (Automobile) Continue investigations. (Aerospace CFI) Continue to investigate suppliers use of environmentally hazardous substances. (Industrial Products CFI) Continue JAMA sheet investigations. Reduce environmentally hazardous substances by using alternatives. (Automobile) Promote switching 3 PVC substances regulated by REACH. (Aerospace CFI) Continue review of alternatives in order to reduce use of environmentally hazardous substances. (Industrial Products CFI) Promote switching to alternatives for compliance with RoHS. 	<ul style="list-style-type: none"> Continued to investigate content of environmentally hazardous substances. (Automobile) Continued investigations. (Aerospace CFI) Investigated status of suppliers use of environmentally hazardous substances. (Industrial Products Division) Continued investigations. Reduced environmentally hazardous substances through switching to alternatives. (Automobile) Proceeded with study on switching to REACH regulated WWF ethanol. (Aerospace CFI) Continued review of alternatives in order to reduce use of environmentally hazardous substances. (Industrial Products Division) Completed compliance with RoHS. 	○	
	<ul style="list-style-type: none"> Set supplier CSR guidelines and deploy them to suppliers. (Aerospace and Industrial Products Companies) Automobile Division has already finished setting and deployment. 	<ul style="list-style-type: none"> Set guidelines and promote deployment and awareness raising of the guidelines to suppliers. 	<ul style="list-style-type: none"> Promote CSR procurement activities based on the guidelines. (Automobile) Continue to disseminate information to suppliers. (Aerospace CFI) Continue to disseminate information to suppliers. (Industrial Products CFI) Continue to disseminate information to suppliers. 	<ul style="list-style-type: none"> Promoted CSR procurement activities based on the guidelines. (Automobile) Confirmed actual operation status with each priority supplier separately. (Aerospace CFI) Notified each procurement committee of the revised guidelines. (Industrial Products Division) Requested compliance with guidelines up to production completion at production planning information sessions and individual meetings. 	○	
	<ul style="list-style-type: none"> Support dealerships' environmental activities. 	<ul style="list-style-type: none"> Support all dealerships maintain "Eco Action 21" certification. Support voluntary implementation of environmental measures, such as energy conservation and waste reduction measures, under "Eco Action 21". 	<ul style="list-style-type: none"> Sequentially verify progress status of mid-term evaluation and EA21 certification audits at all dealerships. Support them to maintain the certification. Continue D-SPECS system utilization, support quantity management to be established, and help reduction activities at the dealerships. 	<ul style="list-style-type: none"> Implemented a review of the schedule, implementation status, results, etc. for the certification audits for dealerships. Also, confirmed that all dealerships are continuing EA21 through their submission of copies of the certificate. Continued D-SPECS system utilization. In addition, progress has been planned with the goal of introducing systems in compliance with the Fluorocarbons Emission Control Law in FY2018. 	○	
C. Expanding Environmental Management	<ul style="list-style-type: none"> Promotion of environmental conservation activities, including biodiversity conservation, in cooperation with local communities. 	<ul style="list-style-type: none"> Continue to participate in environmental events, and make friendly exchanges with and support factory tours of residents near factories. Continue to conduct cleanup and greening activities, including biodiversity conservation efforts, near factories. Promote greening activities taking biodiversity conservation into consideration. Support activities of and work with environmental organizations. 	<ul style="list-style-type: none"> Continue to give factory tours, hold on-site events, and carry out environmental exchange classes. Continue cleanup activities around factories and offices. Promote greening activities taking biodiversity conservation into consideration. 	<ul style="list-style-type: none"> Continue environmental class visits. Continue to welcome visitors to the Gunma Visitor's Center. Continue to implement clean-up activities around each business site. Advance the biodiversity initiatives road map and promote the initiatives. 	<ul style="list-style-type: none"> Carried out the following as part of our social contribution activities. Environmental class visits to elementary and junior high schools in Utsunomiya and Handa: 33 schools (Utsunomiya 21 and Handa 12 schools). Participation: 1,933 students (Utsunomiya 1,254 and Handa 679 students). The Gunma Visitor's Center received 1,507 groups and 88,989 visitors. Head Office and each divisions continued cleanup activities of their surrounding areas. Conducted meetings to inform green area guidelines taking biodiversity into consideration. 	○
	<ul style="list-style-type: none"> Disclosure of environmental information 	<ul style="list-style-type: none"> Disclose environmental information through regular publication of environmental reports and other documents in a timely manner. Improve and enhance the contents of environmental reports. (Compliance with environmental reporting guidelines, inclusion of Group companies in the scope of reporting) Participate in environmental events and publicize corporate environmental efforts. 	<ul style="list-style-type: none"> Provide environment report in the form of CSR report and provide updated information on the website. Improve compliance to environmental reporting guidelines of the Ministry of the Environment, and improve the content of environmental reporting. Continue to participate in Eco-Products Exhibitions to widely publicize the company's eco-friendly products and efforts. 	<ul style="list-style-type: none"> Create a 2016 environmental website and provide information there. Further enrich the content of the report. Participate in the 2016 Eco-Products Exhibition to widely appeal our eco-friendly products and efforts. 	<ul style="list-style-type: none"> Proceeded with preparations for content improvement for next year's report. Proceeded with posting third-party opinions and preparing our response. Participated in the 2016 Eco-Products Exhibition (December 8-10). 	○
	<ul style="list-style-type: none"> Promotion of environmental education and awareness activities 	<ul style="list-style-type: none"> Continue environmental and social education under the in-house education system. Continue employee education through in-house magazines and other media. Continue to hold lectures and workplace meetings to present improvement examples. 	<ul style="list-style-type: none"> Hold more environmental education, enlightenment and presentation events. 	<ul style="list-style-type: none"> Using a variety of opportunities, proactively implement environmental education and educational activities. 	<ul style="list-style-type: none"> Held a management level workshop on the Paris Agreement and greenhouse gases. Updated the environmental education textbook for new employees. Made preparations to refresh the environmental card from April 2017. Educated management on the necessity of environmental efforts in line with the revised environmental policy. 	○
<ul style="list-style-type: none"> Establishment of an Environmental Management System 	<ul style="list-style-type: none"> Maintain ISO 14001 integrated certification of all company outlets. Make continuous improvements to the Environmental Management System. Increase cooperation with subsidiaries and maintain and improve the Environmental Management System structure. 	<ul style="list-style-type: none"> Promote sharing the internal auditing and environmental education systems for more practical EMS activities. Encourage more subsidiaries to acquire the ISO 14001 integrated certification in order to improve the system. 	<ul style="list-style-type: none"> ISO14001: Complete transition to the revised 2015 standards. Promote EMS integration process with Fuji Machinery Co., Ltd., Kiryu Industrial Co., Ltd. and Subaru Logistics Co., Ltd. Recommend that the affiliated companies and suppliers become ISO14001 or EA21 certified (FH prefers EA21). 	<ul style="list-style-type: none"> Received ISO 14001 recertification audit in November to December and certification renewed. Integrated three related companies, completed the ISO 14001:2015 revised manual, and prepared for transition. Established a system for ISO14001:2015 integrated certification with Fuji Machinery Co., Ltd., Kiryu Industrial Co., Ltd. and Subaru Logistics Co., Ltd. Prepared to start environmental activities under the new standards in April 2017. 	○	

Eco Action 21: An environmental management system developed by the Ministry of the Environment based on ISO 14001, aiming at easy implementation by small to medium sized corporations.

The 6th Voluntary Plan for the Environment (FY2018 to FY2021)

- > 1. Global Warming Measures 
- > 2. Resource Recycling 
- > 3. Pollution Prevention and Reduction of Hazardous Chemical Use 
- > 4. Environmental Management 

Subaru Voluntary Plan for the Environment The 6th Voluntary Plan for the Environment (FY2018 to FY2021)

[1] Global Warming Measures

Field	Item		Target/Initiative (Up to FY2021)	FY2018	
				Target	
Products	Fuel economy improvement	Automobiles	<ul style="list-style-type: none"> ◆ Continue to improve fuel economy through full model changes and annual improvements. 	<ul style="list-style-type: none"> ◇ Innovate to an environmental engine, and realize category top level fuel efficiency. ◇ Introduce horizontally opposed direct-injection downsized turbo engines to the market. 	<ul style="list-style-type: none"> • Install the environmental engine and CVT on the next-term XV and expand globally. • Advanced development of the horizontally opposed direct injection downsized turbo engine (under review for mass production).
	Clean energy use		<ul style="list-style-type: none"> ◆ Promote introduction of electric vehicles. 	<ul style="list-style-type: none"> ◇ Introduce plug-in hybrid cars into the main markets in 2018. ◇ Promote research for introducing electric vehicles into the market. 	<ul style="list-style-type: none"> • Completed development of a plug-in hybrid car for North America and transition to a certification and mass production phase. • Determine target functions for electric vehicles and the means to achieve them, and begin manufacture of vehicle for checking functions.
	Road traffic improvement - IT technology (Automate driving technology and preventive safety technology)		<ul style="list-style-type: none"> ◆ Make efforts to expand deployment of advanced driver assist systems and development of automated driving technology, further advance technological development to prevent accidents before they happen, and contribute to CO₂ reduction through preventing traffic congestion due to accidents and improving traffic flow with driving support technology. 	<ul style="list-style-type: none"> ◇ Promote technological development of advanced driver assist system technology and preventive safety technology focused on the EyeSight advanced driver assist system and expand to more markets. ◇ Introduce the traffic jam assist feature that keeps a car in the same lane on expressways to the market in 2017. ◇ Introduce the highway automatic driving feature including lane changes to the market in 2020. 	<ul style="list-style-type: none"> • Continue to promote technological development of advanced driver assist systems focused on introduction of the traffic jam assist feature to the market, expansion of deployment of EyeSight, anticipation of assessment trends and incorporation of them into development plan. Also, continue to promote activities based on promotion plans of industry/government/academia such as SIP/ASV.
Production	Production facilities	<ul style="list-style-type: none"> ◆ Reduce CO₂ emissions per unit of production at domestic production facilities. 	<ul style="list-style-type: none"> ◇ Reduce CO₂ emissions per unit of production by 14% from FY2007 level by FY2021 at domestic production facilities. 	<ul style="list-style-type: none"> • Reduce CO₂ emissions per unit of production at domestic production facilities by 11% from FY2007 level. 	
		<ul style="list-style-type: none"> ◆ Promote activities to reduce CO₂ emissions at overseas production facilities^{*)}. 	<ul style="list-style-type: none"> ◇ For overseas production facilities, set medium term CO₂ emissions targets and conduct activities to attain them. 	<ul style="list-style-type: none"> • While the plan is to increase production and unit sales, the target is set to 189,696 t-CO₂. 	
Distribution/Sales	Distribution	<ul style="list-style-type: none"> ◆ Promote CO₂ emissions reduction activities synchronized with the Energy Saving Law. 	<ul style="list-style-type: none"> ◇ Use FY2007 per unit of CO₂ emission as BM, and reduce emission by 1% every year. 	<ul style="list-style-type: none"> • With FY2007 per unit of CO₂ emission as BM, continue to reduce emission by 1% every fiscal year. 	

*) SIA : Subaru of Indiana Automotive, Inc.

Subaru Voluntary Plan for the Environment The 6th Voluntary Plan for the Environment (FY2018 to FY2021)

[2] Resource Recycling

Field	Item		Target/Initiative (Up to FY2021)	FY2018
				Target
Products	Recyclability improvement	<ul style="list-style-type: none"> ◆ Continue to implement measures to comply with the Automobile Recycling Law. 	<ul style="list-style-type: none"> ◇ Promote new model designs that consider recycling, and contribute to an actual recycling rate of 95% by 2020. ◇ Promote technological development regarding easy dismantling of CFRP products. 	<ul style="list-style-type: none"> • Maintain an actual recycling rate of 95% or better. • Continue to promote designs that consider recycling.
		<ul style="list-style-type: none"> ◆ Continue to implement measures to make parts and materials more detachable, separable, and sortable. 		
		<ul style="list-style-type: none"> ◆ Make efforts for CFRP recycling technology. 		
	Promotion of life-cycle assessment	<ul style="list-style-type: none"> ◆ Promote disclosure of life-cycle assessment (LCA) data. 	<ul style="list-style-type: none"> ◇ Promote release of LCA data from full model change vehicles. 	<ul style="list-style-type: none"> • Promptly release data timed to model changes. • Enhance disclosed content.
Production	Production facilities	<ul style="list-style-type: none"> ◆ Establish processing schemes for difficult material to process, etc. 	<ul style="list-style-type: none"> ◇ Improve recycling and proper treatment. 	<ul style="list-style-type: none"> • Promote review and verification for treatment and recycling.
		<ul style="list-style-type: none"> ◆ Continue the appropriate disposal of waste and reducing waste generation. 	<ul style="list-style-type: none"> ◇ Continue the appropriate management of waste and reducing waste generation by improving yield and packaging. 	<ul style="list-style-type: none"> • Continue improvement of yield, understand the outlook for volume produced, and manage/continue waste generation reduction.
		<ul style="list-style-type: none"> ◆ Continue zero emission (zero landfill waste either directly or indirectly) at both domestic and overseas production facilities. 	<ul style="list-style-type: none"> ◇ Continue zero emission at both domestic and overseas production facilities. 	<ul style="list-style-type: none"> • Continue zero emission at both domestic and overseas production facilities.
		<ul style="list-style-type: none"> ◆ Manage volume of water used at both domestic and overseas production facilities. 	<ul style="list-style-type: none"> ◇ Manage volume of water used at production facilities across Group companies in and outside Japan. 	<ul style="list-style-type: none"> • Manage volume of water used at production facilities across Group companies in and outside Japan.

■ Subaru Voluntary Plan for the Environment

The 6th Voluntary Plan for the Environment (FY2018 to FY2021)

[3] Pollution Prevention and Reduction of Hazardous Chemical Use

Field	Item		Target/Initiative (Up to FY2021)	FY2018
				Target
Products	Reduction in emissions	◆ Promote the introduction of low-emission vehicles to improve air quality.	◇ Japan: Increase the number of low emission standard certified models by WLTP (produced by Subaru). Overseas: Promote the introduction of low-emission vehicles to improve air quality in each country and region.	• Advanced development to control exhaust gas emissions in the real world. • Mass production development in line with WLTP-based low emission regulations.
	Reduction in the use of environmentally hazardous substances	◆ Promote the management and reduction in the use of environmentally hazardous substances.	◇ Improve management of chemical substances contained in products. ◇ Promote switching to substances with lower environmental impact.	• Prepare an all part survey system and improve management precision. • Promote switching to substances with lower environmental impact.
Production	Management and emission reduction of environmentally hazardous substances at production facilities	Automobiles ◆ Further reduce per unit of VOC emissions (g/m ³) at production lines.	◇ Reduce per unit of VOC emissions.	• Reduce per unit of VOC emissions.
		◆ Continue to reduce emissions of PRTR substances into the environment.	◇ Identify and manage the chemical substances regulated by the PRTR law and promote further reduction in the use of these substances.	• Identify and manage the chemical substances regulated by the PRTR law.
		◆ Promote activities targeting the elimination of occurrences of hazardous substances leaking off site, complaints, and exceeding legal standards.	◇ Promote activities targeting the elimination of occurrences of environmental accidents, complaints, and exceeding legal standards through environmental risk reduction activities. ◇ Set stricter voluntary standards and conduct small-risk elimination activities.	• Promote activities targeting the elimination of occurrences of environmental accidents, complaints, and exceeding legal standards through environmental risk reduction activities.

■ Subaru Voluntary Plan for the Environment

The 6th Voluntary Plan for the Environment (FY2018 to FY2021)

[4] Environmental Management

Field	Item		2020年度までの目標・取り組み	2017年度
			目標	
Procurement	Green procurement activities	◆ Request both domestic and overseas suppliers to establish, maintain, and strengthen environmental management systems (EMS).	◇ Continue to establish and maintain the EMS including new suppliers. ◇ Request that the entire supply chain improve environmental management throughout the product life cycle.	• Continue to maintain the structure to establish EMS including new suppliers. • Revise the guidelines and deploy them to suppliers.
		◆ Reduce environmentally hazardous substances.	◇ Encourage suppliers to further improve management of and reduce the use of environmentally hazardous substances contained in parts and materials.	• Continue to investigate content of environmentally hazardous substances, and promote to reduce environmentally hazardous substances by using alternatives.
		◆ Apply the supplier CSR guidelines and green procurement guidelines.	◇ Revise the guidelines according to the social environment and changes in corporate policy, and request suppliers to deploy, disseminate, and comply with the guidelines.	• Revise the guidelines and deploy them to suppliers.
Distribution/Sales	Promotion of environmental conservation activities among dealerships [Green Retail]	Automobiles ◆ Provide support to dealerships' environmental activities.	◇ Support all dealerships maintain "Eco Action 21" ^① certification. ◇ Support voluntary implementation of environmental measures, such as energy conservation and waste reduction measures, under "Eco Action 21".	• Sequentially verify progress of EA21 mid-term evaluation and recertification audit at all dealerships. Support them to maintain the certification. • Continue D-SPECS system utilization, support quantitative management to be established, and help reduction activities at the dealerships.
Management	Promotion of environmental conservation activities, including biodiversity conservation, in cooperation with local communities	◆ Continue to participate in environmental events, and make friendly exchanges with and support factory tours of residents near factories.	◇ Continue to give factory tours, hold on-site events, and carry out environmental exchange classes.	• Continue environmental class visits. • Continue to welcome visitors to the Gunma Visitor's Center.
		◆ Continue to conduct cleanup and greening activities, including biodiversity conservation efforts, near factories.	◇ Continue cleanup activities around factories and offices.	• Continue clean-up activities around each business site.
		◆ Support activities of and work with environmental organizations.	◇ Promote greening activities taking biodiversity conservation into consideration.	• Start the Subaru forest initiative. • Support and cooperate in local environmental conservation activities.
	Disclosure of environmental information	◆ Disclose environmental information through regular publication of environmental reports and other documents in a timely manner.	◇ Provide environmental report. Provide updated information on the website.	• Disclose environmental information in a timely manner. • Obtain third-party certification for disclosed content.
◆ Improve and enhance the contents of environmental reports. (Compliance with environmental reporting guidelines, inclusion of Group companies in the scope of reporting)		◇ Improve compliance to environmental reporting guidelines of the Ministry of the Environment, and improve the content of environmental reporting.	• Further enrich the content of the environmental report and make preliminary preparations for receiving certification for the report.	
Promotion of environmental education and awareness activities	◆ Continue environmental and social education under the in-house education system. ◆ Continue employee education through in-house magazines and other media. ◆ Continue to hold lectures and workplace meetings to present improvement examples.	◇ Participate in Eco-Products Exhibitions, etc. to widely publicize the company's eco-friendly activities.	• Actively publicize the company's environmental initiatives at events.	
		◆ Hold more environmental education, enlightenment and presentation events.	• Deploy environmental education and environmental training with more people participating. • Feature educational content in the in-house magazine. • Inform all employees of the revised environmental policies.	
		◆ Maintain ISO 14001 integrated certification of all company outlets.	• Continue the integrated certification system including the three subsidiaries (Subaru Logistics Co., Ltd., Kiryu Industrial Co., Ltd., and Fuji Machinery Co. Ltd.) and obtain certification with the revised version.	
Establishment of an Environmental Management System	◆ Make continuous improvements to the Environmental Management System.	◇ Promote sharing the internal auditing and environmental education systems for more practical EMS activities. ◇ Promote acquiring the ISO 14001 integrated certification, including 3 subsidiaries (Subaru Logistics Co., Ltd., Kiryu Industrial Co., Ltd. and Fuji Machinery Co.Ltd.), in order to further improve the system.	• Explain the EA21 value chain to suppliers, and support participating suppliers.	
	◆ Increase cooperation with subsidiaries and suppliers, and maintain and improve the establishment of consolidated environmental management system.	◇ Delay the EA21 value chain to subsidiaries and suppliers.		

^① Eco Action 21: An environmental management system developed by the Ministry of the Environment based on ISO 14001, aiming at easy implementation by small-to-medium sized corporations.



Relation between Global Environment and Business Activities

The Subaru group has its pillars in the automotive and aerospace businesses and responsibility to be involved in the entire life cycle of a product from procurement of raw materials to manufacture, use, and disposal of the product.

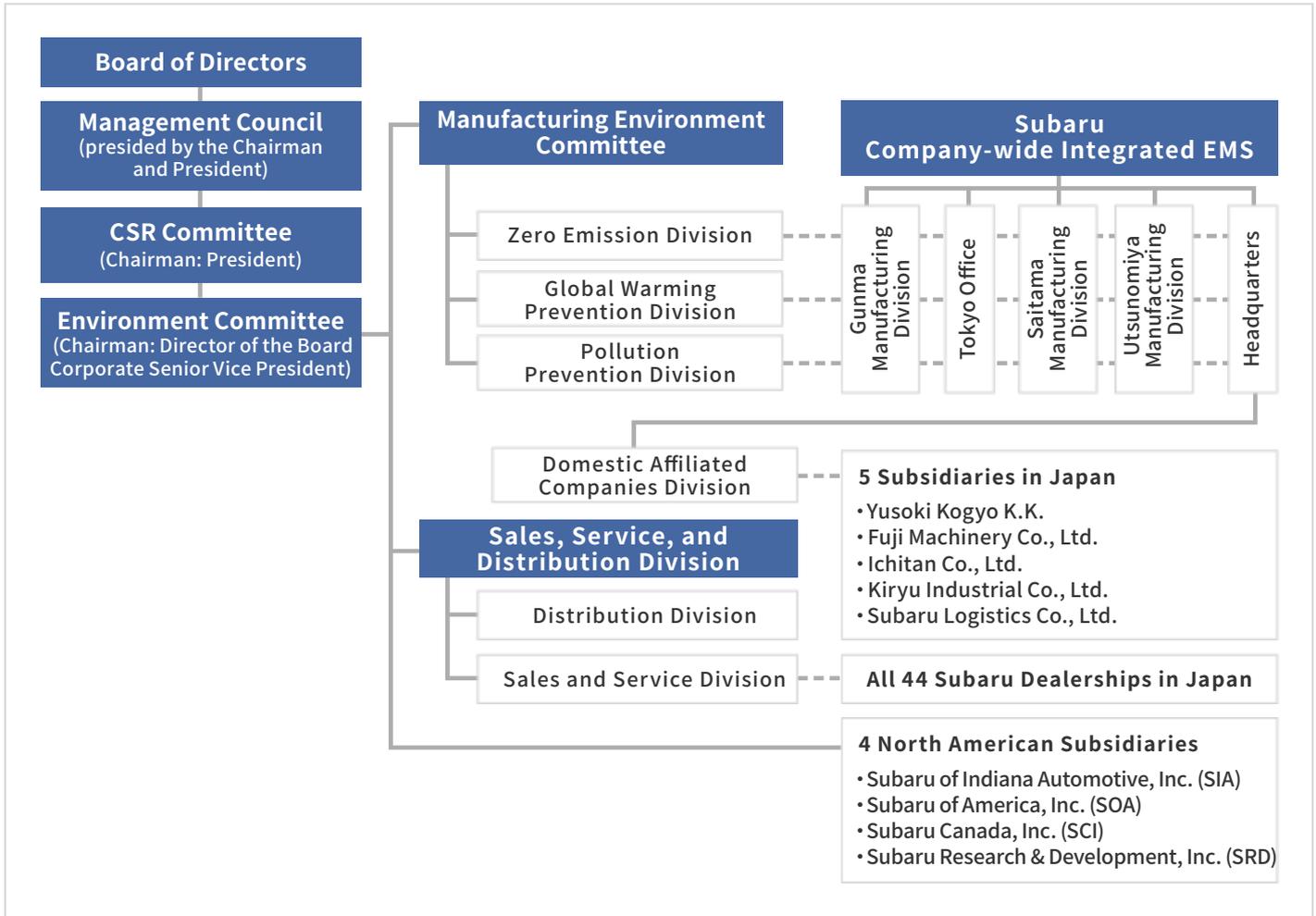
The Subaru group, taking advantage of organizational characteristics that can oversee the entire supply chain, contributes to achieving a sustainable society by addressing global environmental issues such as coping with climate change and biodiversity.

Organization

We established an environmental management structure across the organization with two pillars of the Company-wide Environmental Management System (EMS) and the Environmental Committee in order to reach the goals of our Environmental Policy and Voluntary Plan. Serving as the head of the Company-wide EMS and the chairperson of the Environmental Committee, the director responsible for environmental issues conducts environmental reviews twice a year, and reports important problems to the executive management board meeting and the board of directors. The director proactively promotes environmental conservation activities, comprehensively managing the progress and the direction of our efforts.

SUBARU Group Environmental Management Organization

SUBARU Group Environmental Management Organization (as of the end of June 2017)



Status of Establishing the Environmental Management System

We are actively engaged in establishing an environmental management system for the entire Subaru group, have established environmental management systems at offices, business partners, foreign and domestic consolidated manufacturing companies, and foreign and domestic Subaru dealers, and are acquiring third-party certification.

In March 2011, all of our 44 domestic dealerships and their 700 outlets obtained Eco Action 21 (EA21) certification, which was the first in Japan among all automobile manufacturers. And we introduced the “Eco Action 21 Value Chain Model Business” promoted by the Ministry of the Environment.

In addition, in May 2012, SIA, the US production site for Subaru, became the first automobile production plant in the US to obtain ISO50001 certification, which is the international standard for energy management systems (EnMS), and continues to actively promote these activities. Furthermore, Subaru Logistics Co., Ltd. obtained ISO14001 certification in February 2013, ISO39001 certification, the international standard for road traffic safety management systems in August 2015, and ISO9001, the quality management systems standard, in February 2016. In addition to these achievements, through global business activities as the Subaru Group, we continue to promote green procurement in the supply chain, establishment of a company-wide environmental management system covering nine company offices, and green procurement to reduce environmentally hazardous substances.

Status of Establishing EMS/EnMS in the SUBARU Group

Factories and Offices					Dealerships	Distributors
Category	Subaru Corporation	Vendor	Domestic Consolidated Production and Distribution Companies	Overseas Consolidated Production Company	Domestic Consolidated Dealerships	Overseas Consolidated Distributors
Divisions	Company-wide EMS Gunma Manufacturing Division Tokyo Office Utsunomiya Manufacturing Division Handa Plant West Handa Plant Headquarters	Green procurement Raw material procurement vendors	Fuji Machinery Co., Ltd. Kiryu Industrial Co., Ltd. Ichitan Co., Ltd. Yusoki Kogyo K.K. Subaru Logistics Co., Ltd. FAS Corporation Fuji Jukou House Corporation Total: 7 companies	SIA	All domestic Subaru dealerships Total: 44 dealerships	SOA SCI Total: 2 distributors
Acquired EMS/EnMS	ISO14001	Either ISO 14001 or Eco Action 21	ISO14001	ISO14001 ISO50001	Eco Action 21	ISO14001

Eco Action 21 and the Introduction of Value Chain Model Business

We were the first automobile manufacturer to acquire Eco Action 21 certification for all dealerships and outlets in 2011 and are promoting operation under these guidelines. This achievement was recognized and approved as the “First Value Chain Model Business” for further promotion by the Ministry of the Environment of Japan. We plan to develop and promote Eco Action 21 to the group while receiving instruction and support from IPSuS*, the accreditation institute for eco action.

*IPSuS: Institute for Promoting Sustainable Societies. This organization studies and plans new initiatives for building sustainable societies and implement them by integrating business related initiatives such as Eco Action 21 and product and service related initiatives that make use of the supply chain.



› Environmental Management System Request to Business Partners

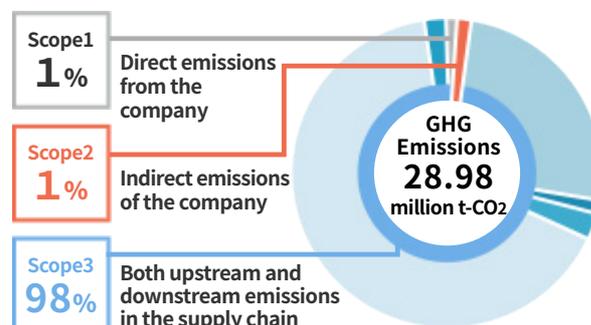
› Promoting Acquisition of Eco Action 21 Certification for the Supply Chain

Greenhouse Gas Emissions in the Supply Chain

Greenhouse gas (GHG) emissions in the supply chain for FY2017 were 28.98 million t-CO₂.

We participated in the Ministry of the Environment “Support for Calculating Supply Chain Greenhouse Gas Emissions toward an Environmental Information Disclosure Infrastructure,” and received assistance from NTT Data Institute of Management Consulting, Inc. in Scope 3 calculations.

We will continue to promote identifying and managing GHG emissions.



Scope 3 Breakdown

Division	Category		Greenhouse Gas Emissions (t-CO ₂)	Calculation Scope, etc.
Upstream	1	Purchased goods and services	7,156,385	Domestic and overseas
	2	Capital goods	519,870	Domestic and overseas
	3	Fuel and energy related activities not included in Scopes 1 or 2	63,603	Domestic and overseas
	4	Transportation and delivery (upstream)	717,777	Domestic and overseas
	5	Waste generated in operations	20,000	Domestic and overseas
	6	Business travel	4,238	Domestic and overseas
	7	Employee commuting	11,434	Domestic and overseas
	8	Leased assets (upstream)	-	N/A
Downstream	9	Transportation and delivery (downstream)	-	N/A
	10	Processing of sold products	3,396	Domestic and overseas
	11	Use of sold products	19,164,729	Domestic and overseas
	12	End-of-life treatment of sold products	592,140	Domestic and overseas
	13	Leased assets (downstream)	-	N/A
	14	Franchises	49,583	Domestic and overseas
	15	Investments	-	N/A

Environmental Risk Management

We work to prevent and minimize environmental risk in our business activities (such as environmental accidents, pollution, or non-compliance with laws and regulations) by periodic sampling and management of environmental risks.

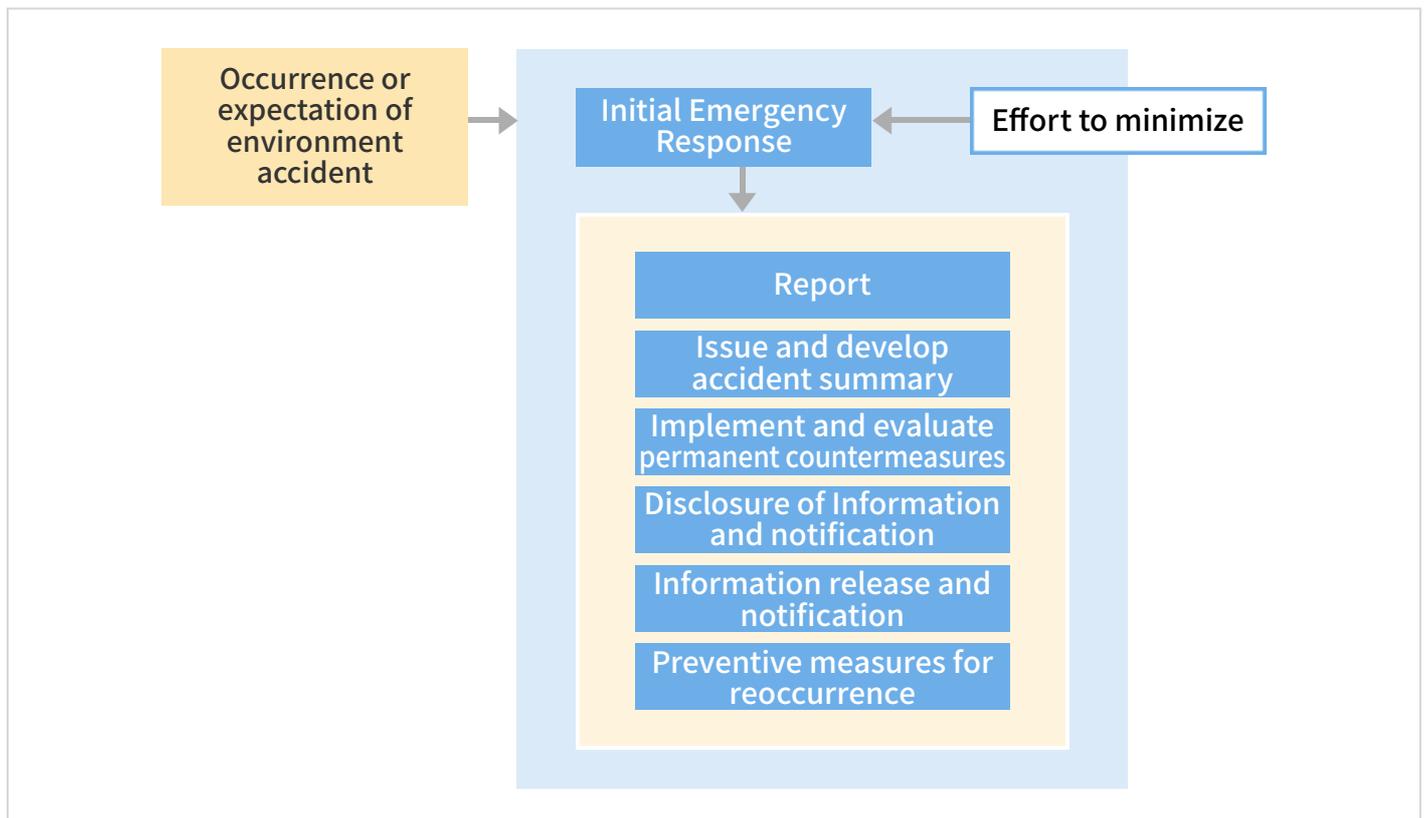
In addition, we strive to quickly implement emergency measures and measures to prevent recurrence and to avoid secondary risks due to confusion by standardizing the management process when an environmental risk is discovered and training during normal times.

In November 2016, the Tokyo Office implemented emergency response training with 204 participants to minimize contamination that occurs with soil and sewage inflow with gasoline or oil leaks on the roads onsite.

We will continue to conduct regular trainings to prevent accidents in the future.



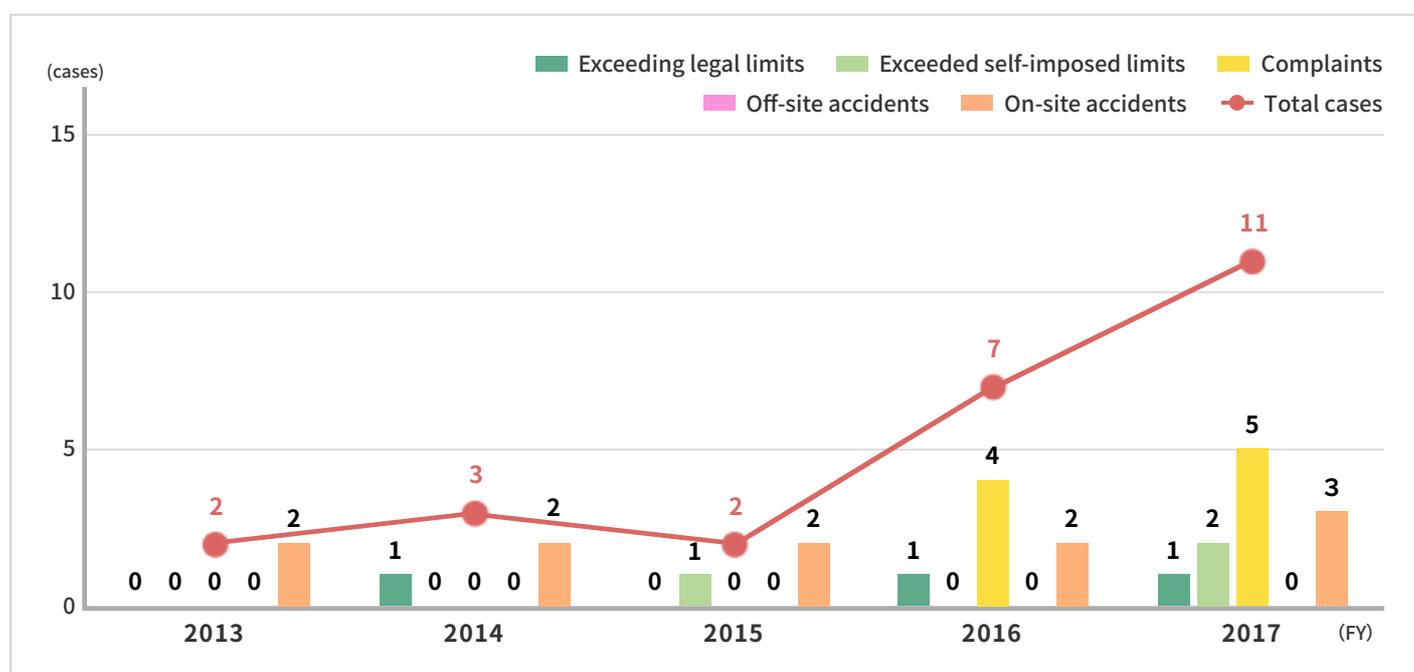
Process when an Environment-related Accident Occurs



Status of Compliance with Environmental Laws and Regulations

At Subaru, we strive to be in compliance with environmental laws and regulations, and to eliminate environment-related accidents and complaints. The figure below shows the results of the last five years.

Number of Cases Exceeding Environmental Laws and Regulations, Environmental Accidents, and Complaints



Status of Compliance with Environmental Laws and Regulations in FY2017

We have set our voluntary standards, which are 20% stricter than the environmental standards set by law. We are committed to achieving “zero non-compliance” with both the legal and voluntary standards. There was one case of exceeding legal standards, so measures were implemented to prevent a recurrence.

Name	Number of Cases	Details	Main Corrective Measures
Saitama Manufacturing Division	1 case	Exceeded the night-time noise regulations limits.	Because the cause was poor maintenance of the cooling water pump, we carried out maintenance and implemented countermeasures. There were no complaints.

Environmental Complaints Received in FY2017

We received 5 environmental complaints.

Name	Number of Cases	Details	Main Corrective Measures
Gunma Manufacturing Division	2 cases	Received complaints about odor.	Made efforts to reduce the odor by implementing equipment improvements and began measures for materials.
	2 cases	Received complaints about noise.	To replace the hydraulic pump and filter for the paint supply device. In addition, we are striving to respond promptly to changes noticed by continuous monitoring and improve communication with the neighborhood around the plant.
Utsunomiya Manufacturing Division	1 case	Received a complaint about noise during a forklift repair.	Immediate stop of work and an apology was offered. The cause and corrective measures were explained to the satisfaction of the party making the complaint. There were no further complaints.

Status of Environmental Accident Occurrences in FY2017

We are striving to achieve the goal of zero accidents, both on and off site.

There were three incidents of on-site accidents.

We implemented measures to prevent recurrence.

Name	Number of Cases	Details	Main Corrective Measures
Gunma Manufacturing Division	2 cases for water quality	Muddy water flowed from the construction site to onsite waterways and oil separation tanks. The flow was contained onsite and there was no flow outside of the plant grounds.	Implemented continuing education for construction work manager and added water quality management with transparent gauges.
Utsunomiya Manufacturing Division	1 case for water quality	Water-based paint flowed onsite when rain fell on paint that had not completely dried while painting the roof. The flow was contained onsite and there was no flow outside of the plant grounds.	Confirmed status before and after scheduled work and will issue work instructions.

Environmental Accounting (Subaru Group FY2017 Results)

Environmental Cost Approach and Calculation Method

Referencing to the Guidelines of the Ministry of the Environment, independent guidelines had been established for Subaru environmental conservation activity organizations (Calculation methods have been changed partially starting in FY2006), and environmental costs are calculated and summarized according to these guidelines. (Group companies also use the same guidelines for calculations.)

Environmental Cost and Capital Investment Calculation Method

Capital investments and related expenses for environmental equipment (investments of 25 million yen or more), and labor costs are calculated on a differential or pro-rata basis. For example, investments and environmental costs for energy conservation at a production facility are calculated as follows:

$$\text{Capital investment and environmental cost} = \left\{ \frac{\text{Total investment} - \text{Investment not for energy conservation}}{\text{Total investment}} \right\} \times \text{(Capital investments for production facilities, maintenance costs, etc.)}$$

For smaller facilities with investments of less than 25 million yen, the costs for capital investments and maintenance costs limited to environmental purposes are totaled. In addition, depreciation of equipment for which an investment was made is not included in the environmental cost from the viewpoint of cash flows. Other expenses, such as fixed assets taxes and insurance costs, are also omitted from the total. Environmental cost and economic effect of environmental facilities are included only for three years from the year after the facilities are put into operation.

FY2017 Calculation Results

Environmental cost came to 34.5 billion yen on a non-consolidated basis, up 2.21 billion yen (6.8%) from the previous fiscal year, and 36.2 billion yen on a consolidated basis, up 2.49 billion yen (7.4%). The cost increase was mainly due to an increase in research and development (R&D) costs (2.15 billion yen on a non-consolidated basis). The ratio of environmental cost to sales, which is one of the environmental management indexes used on a consolidated basis, came to 1.09%.

FY2017 Environmental Costs and Effects Calculation Results

Item	Category	Environmental Cost (Millions of yen)						Environmental Investment (Millions of yen)					
		Non-consolidated			Consolidated			Non-consolidated			Consolidated		
		FY 2017	FY 2016	FY 2015	FY 2017	FY 2016	FY 2015	FY 2017	FY 2016	FY 2015	FY 2017	FY 2016	FY 2015
(1) Cost in the business area	①Pollution prevention cost	410	479	389	677	656	549	1,346	206	206	1,372	656	656
	②Global environmental conservation cost	49	21	21	77	43	142	175	39	39	228	93	93
	③Resource recycling cost	617	547	540	1,176	1,144	1,011	9	0	0	9	3	3
(2) Upstream and downstream costs	Recycling related cost Cost arising from changes in product materials	340	129	122	340	129	122	—	—	—	—	—	—
(3) Administration cost	Cost for monitoring environmental impact Cost for the environmental management Cost for environmental education	80	77	81	159	143	142	—	—	—	—	—	—
(4) R&D cost	R&D cost for environmental impact reduction	32,535	30,389	28,462	33,238	31,328	28,786	4,017	2,546	2,302	4,232	2,568	2,324
(5) Social activity cost	Cost related to donation, etc. for environmental conservation groups	98	91	84	102	95	88	—	—	—	—	—	—
(6) Environmental remediation cost	Cost to remedy soil and underground pollution	359	124	147	381	126	149	0	0	0	0	0	0
(7) Other cost		0	0	0	0	0	0	—	—	—	—	—	—
Grand Total		34,488	32,278	29,845	36,151	33,664	30,990	5,546	2,790	2,547	5,842	3,320	3,076

Note: Due to rounding, the sum may not exactly match the corresponding total.

FY2017 Economic Effect Calculation Results

Item	Economic effect (Millions of yen)	
	Non-consolidated	Consolidated
Reduction in energy cost from energy conservation	10	47
Sales from recycling (sales of valuable items: metals, waste liquids, and cardboard boxes)	2,117	3,665
Miscellaneous	1	1
Grand Total	2,128	3,713

Companies included in the consolidated calculation

Five subsidiaries in Japan: Yusoki Kogyo K.K., Fuji Machinery Co., Ltd., Ichitan Co., Ltd., Kiryu Industrial Co., Ltd., and Subaru Logistics Co., Ltd.

Five subsidiaries outside Japan: SIA, SOA, SRD, SCI and SOMI

Environmental Communication

We value the relations with all our stakeholders, and to become a trustworthy corporation that brings peace of mind to our stakeholders. To this end, we widely disseminate environmental reports, environmental accounting and examples of environmental conservation activities through various media, such as CSR reports and our website.

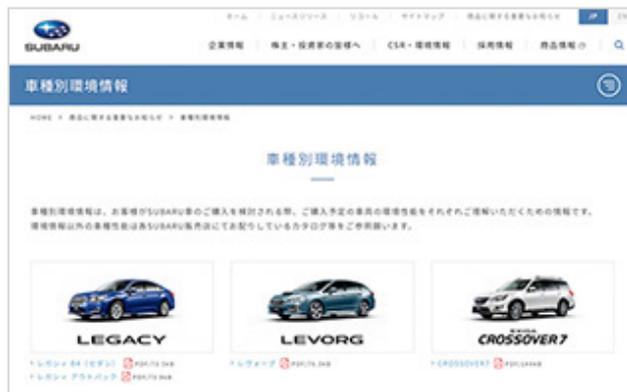
Information Posted on GPN Eco Products Net



Green Purchasing Network

Eco Product Net of the Green Purchasing Network website

We initiated to introduce our products on the "Eco Product Net" page of the Green Purchasing Network (GPN) website. The webpage is not for GPN to recommend any products, but to provide comparative environmental performance data of various products to help those that are considering purchasing them.



> Environmental information of each model

Communication with Local Residents

At the Gunma Manufacturing Division, we communicate daily with local residents who live near the factories, dormitories, and corporate housing. Representatives of the factories visit the head administrator and assistant head administrator (deputy administrator) of the administrative districts every month and exchange information about Subaru events, happenings in the region, and issues with Subaru.

In addition, once a year we explain the status of the Gunma Manufacturing Division and our environmental initiatives as well as open the factories for visits to gain deeper understand of our activities.

Environmental Education

We regard initiatives for environmental problems as one of our social responsibilities as a corporation, and provide employees at all levels and departments with a range of environmental education programs.

In April 2016, we began implementing “New Employee Environmental Conservation Education” for the 391 new employees of the automotive business division and the 206 new employees at the Head Office.

We also held an ISO 14001 internal auditors training seminar to enhance the internal auditing system for the ISO 14001 environmental management system and environmental conservation activities conducted at the workplace. In this seminar, external lecturers were invited for the two-day session, in which participants studied to be internal auditors.

We believe it is important for employees to be fully aware of environmental problems and environmental efficiency on a daily basis, and to exercise this awareness in business and environmental activities. To this end, we continue to promote environmental education and enlightenment for employees.



Exhibit at EcoPro 2016

We participated in the EcoPro 2016 (formerly Eco Products), the largest environmental exhibition in Japan, in December 2016 and exhibited the Subaru Impreza to introduce its environmental performance and greatly enhance all-around safety.

In addition to environmental initiatives through our products, Subaru has introduced views and initiatives focused on the environment such as zero landfill activities implemented both domestically and internationally, forest protection activities by Subaru of China, and examples of cyclamen cultivation using waste oil recycling, and has implemented experiential environmental education using Kinect[®] to study the environment in a gaming atmosphere.

※ Kinect: Equipment retailed by Microsoft that operates by gestures and speech recognition.



Eco-Science Fair and Go Green event 2016

The Fair and Go Green event is a single event of which SIA was the title sponsor. The event was held Friday, April 8, 2016 at the Indiana State Museum, which is located in downtown Indianapolis. Over 1,000 students attended, from elementary age through high school. All the science exhibits are designed around ways to improve our environment and lessen our carbon footprint. SIA made a presentation around our own environmental initiatives and also awarded a grant to a project SIA's judges thought was the most interesting and well-presented. This \$3,000 grant went to the school and the student received a special plaque. SIA intends to continue our sponsorship.



Third-party Evaluations

Earned A-minus from CDP

We received an A-, second only to the highest grade of A, in the “CDP Climate Change Report” released on October 25, 2016.

※ CDP: A nonprofit organization cooperatively managed by 827 institutional investors (managing assets of US\$100 trillion).

CDP sends questionnaires to leading global companies to ask for disclosure on environmental strategies and greenhouse gas emissions information, and the responses are analyzed and evaluated and then disclosed to investors.



Acquired the highest rating for DBJ environmental ratings for the first time

We received the highest rating that recognizes “notably advanced environmental efforts” under the DBJ Environmentally Rated Loan Program of Development Bank of Japan Inc. (DBJ). This is the first time we have been rated in the program.

Initiated in 2004, DBJ Environmental Ratings Loan Program is the world’s first financing menu to incorporate environmental ratings. The program scores environmental management of client companies with a screening system developed by DBJ and grants three different interest rates according to the scores attained.

DBJ highly evaluated Subaru’s advanced environmental management practices, which are based on thorough risk management that includes its suppliers, to comply with strict environmental regulations of each country that apply to vehicle manufacturers.



We obtained the DBJ Environmentally Rated Loan in May 2016.

Received the Indiana Governor's Award for Environmental Excellence

SIA received the Indiana Governor's Award for Environmental Excellence for 2016 in the Energy and Renewable Resources category and were publicly acknowledged by the Indiana Department of Environmental Management. This award is given to the corporation with the most exemplary environmental practices within the state of Indiana. Subaru was recognized for reducing CO₂ emissions by 1,097 tons/day (equivalent to 85% of emissions before conversion) by converting part transportation trucks to natural gas. SIA has now received this award four times: in 2003 for the Recycle and Reuse category, in 2006 for the Five-year Continuous Improvement category, and in 2014 for the Energy and Renewable Resources category.



Letter of Appreciation from the UN for Subaru of China's Public Interest Activities

Subaru of China (SOC) received an invitation from "Forests of China" and participated in the "Save the Earth" art exhibit held at the United Nations as a member of the "Forests of China" delegation. "Forests of China" is a public interest entity jointly established by Chinese governmental departments and organizations such as the China Forestry Society, the Guangming Daily, the China Guanghua Foundation, and the China Wildlife Conservation Society. SOC sponsors the "Forests of China" and cooperatively has carried out the "31 Forest" Star Tours.

SOC was invited to this art exhibit in recognition of the major contribution to environmental conservation in China through an event called "Drawing a Beautiful Home Garden" which was an activity in the 2016 SOC "31 Forests: Journey of the Stars, the Season4." A public letter of appreciation was sent to SOC from the UN for efforts to protect ecosystems.





Our Approach to Environmentally Friendly Automobiles

Approaches and Strategies for Improving Fuel Economy

An automobile releases carbon dioxide (CO₂) in proportion to the fuel consumed. In recent years, major issues for automobile manufacturers are how to save fuel while in use and how to contribute to preventing global warming by reducing CO₂ emissions.

We thoroughly pursue improvements in fuel efficiency by expanding use of direct fuel injection engine and introducing all-new, redesigned downsized turbo engines for internal combustion engine vehicles that account for the majority of our products, and aim for achieving top level fuel efficiency in segment with the net thermal efficiency of 40% or more.

In addition, in order to advance fuel efficiency for the vehicle overall, transmission efficiency was further advanced by friction reduction in the transmission, and the body was improved by promoting weight reduction by Subaru Global Platform (SGP), aerodynamic, and friction improvements in transmission functions overall.

Through these initiatives, we are considering development of a new-generation environmental strategy vehicle with a view to 2020 and beyond.

In addition, we are promoting development the deployment of electric vehicles that meet the US zero-emission vehicle (ZEV) regulations and fuel consumption regulations of various nations that are becoming more strict, aiming toward development of PHV vehicles true to the Subaru identity. And we will introduce them to the US market in 2018 and our EV globally in 2021.

Through these initiatives, we are aiming for the top class fuel efficiency among SUV category and will continue to work toward improving fuel efficiency.

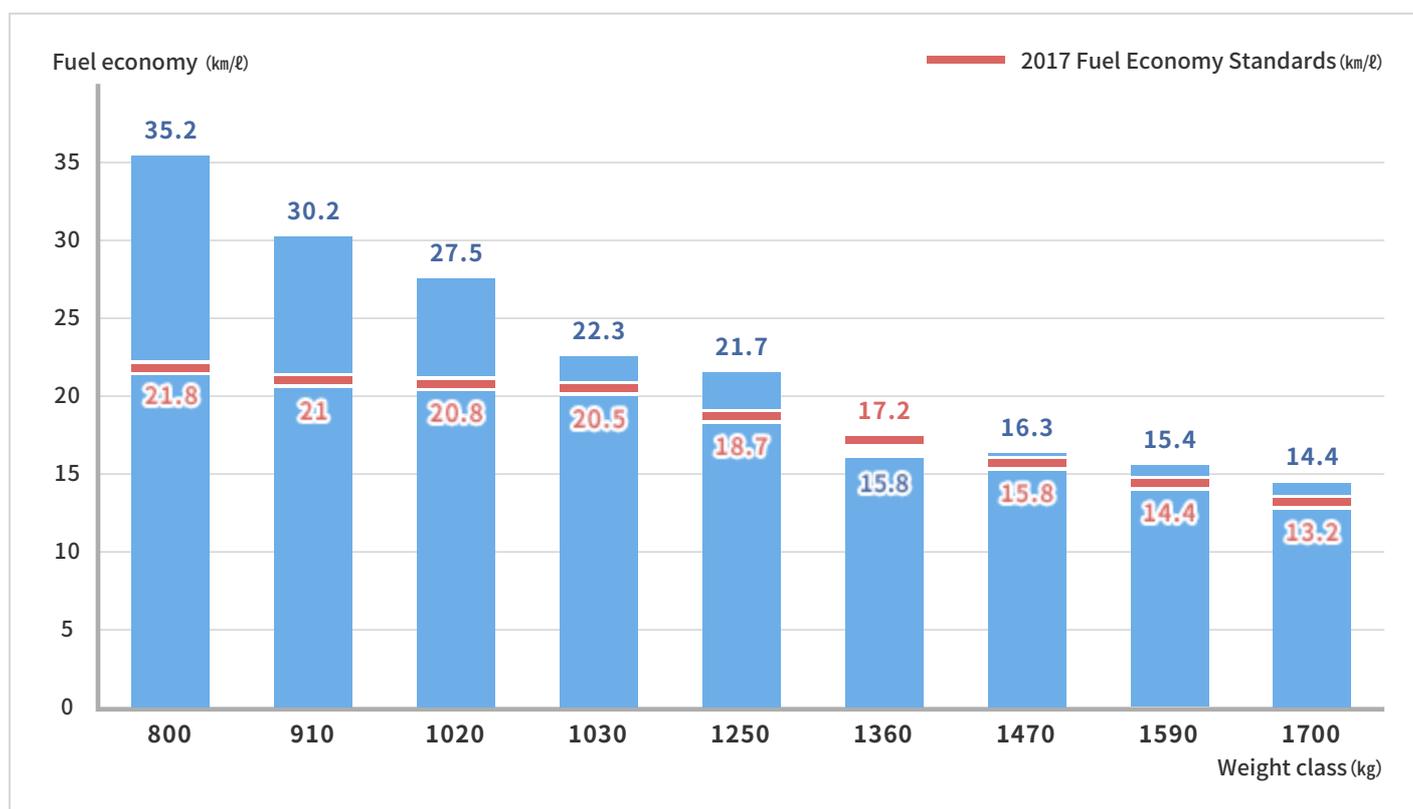
Fuel Economy Standards

Japan: Achieved the FY2016 Fuel Economy Standards in 8 of 9 Weight Classes

The percentage of passenger cars meeting the FY2016 fuel economy standards was 93%, with 8 weight classes (one more than the previous year) of the 9 weight classes of the Subaru vehicles that are sold meeting the FY2016 fuel economy standards.

To meet the FY2021 fuel economy standards, we are introducing a newly developed down-sized turbo engine and an electric vehicle.

Fuel Economy Standards Achievement Status in FY2017



US: Achieved 2016 Model Year Corporate Average Fuel Economy (CAFE) Standards and Greenhouse Gas (GHG) Standards

While CAFE standards and GHG standards becoming stricter every model year, we met both standards for the 2016 model year.

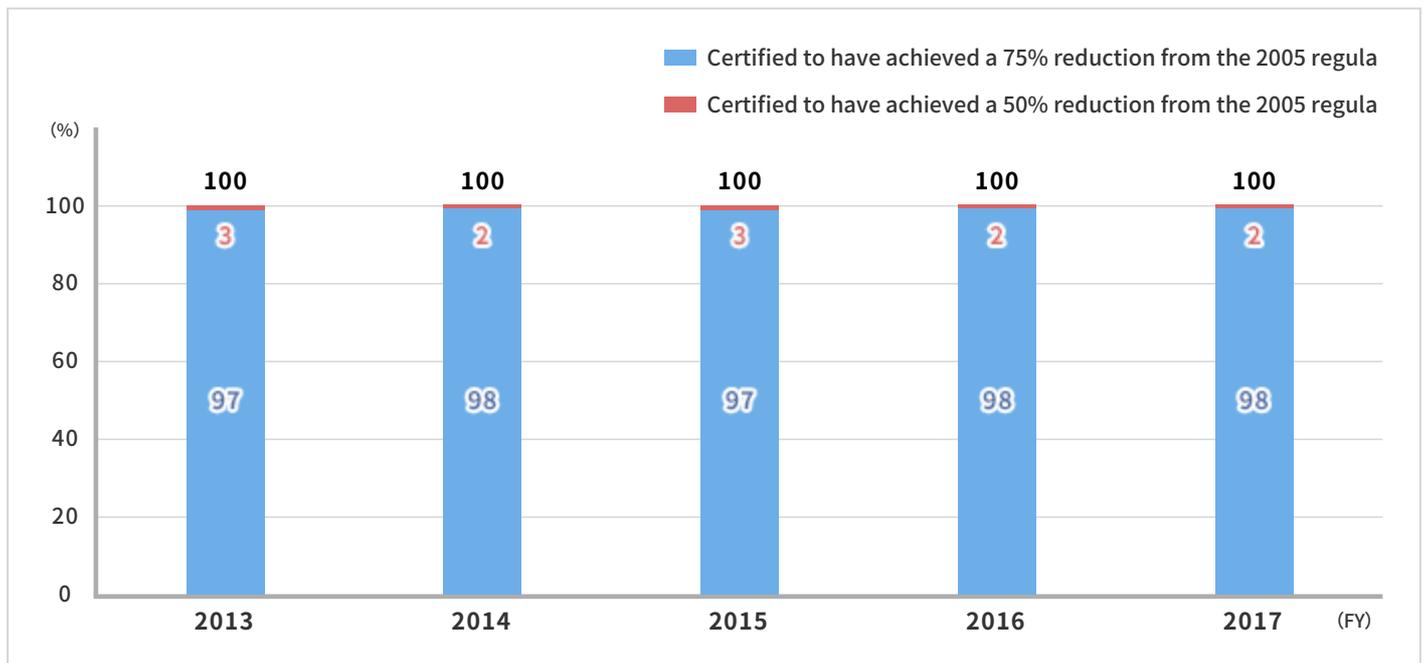
Not only achieving fuel economy and CO₂ regulations that are becoming stricter worldwide, we are also set to further spread vehicles with greater fuel economy in the global market.

Low Exhaust Emissions

Improvement and Popularization of Certified Low Emission Vehicles

All Subaru vehicles equipped with Natural Aspiration (N/A) engines are certified by the Japanese Ministry of Land, Infrastructure, Transport and Tourism to have achieved a 75% reduction from the regulatory values specified in the 2005 emissions standards, and the numbers of vehicles achieving the 75% reduction have remained in the higher 90% range of the total production quantity since FY2013. Additionally, all vehicles we produce are certified Ultra Low Emission Vehicles (U-LEV) achieving a 50% reduction from the regulatory values specified in the 2005 emissions standards.

Percentage of Low Emission Gasoline-powered Passenger Vehicles



Noise Countermeasures

We are also working to actively reduce road noise from automobiles.

We promote the development of technology that can effectively reduce vehicle noise from primary sources such as tires, engines and intake and exhaust systems.

The new model Impreza introduced to the market in October 2016 implemented a low-noise tire with the new platform. As a result, excellent fuel efficiency and pleasant drivability were maintained while allowing a reduction in traffic noise while driving in urban areas.

Management of Chemical Substances (Operation of the IMDS)

Since the enforcement of the European Union's Registration, Evaluation and Authorization of Chemicals (REACH) regulation, various chemical substances have been regulated in countries across the world, and at the same time, the automobile industry has been required to disclose information and foster proper management regarding the use of chemical substances in automobiles.

We are promoting improvement in supply chain management by using the IMDS in order to identify the names and amounts of each chemical substance used in the several tens of thousands of parts that are in our automobiles.

Through these measures, we are discontinuing the use of environmentally hazardous substances (lead, mercury, cadmium, hexavalent chromium, etc.), replacing regulated substances with alternatives, and we are promoting a management system that can promptly disclose information regarding the usage of substances requiring management according to EU REACH, etc.

[> IMDS](#) 

Life-cycle Assessment (LCA)

The LCA method to quantitatively evaluate the environmental impact through the life cycle of product and service is considered to be an effective tool for building a sustainable society. We utilize this LCA to quantify the environmental impact of an automobile over its life cycle (over each step of mining of raw materials, manufacturing, transportation, use, and disposal) and develops and designs products with low environmental impact.



Approach to Environmentally-conscious Procurement

The Subaru Group aims to achieve a sustainable society recognizing that working on improving environmental issues through business activities is an urgent social issue imposed on corporations and that we bear the responsibility to accomplish this. In regard to procurement, the environmental policy notes that “Our purchasing activities reflect consideration for biodiversity and other aspects of environmental protection.” We promote the procurement of parts, materials, and services from business partners who implement business activities that consider the environment.

Green Procurement

Initiatives in the Subaru Group

The Subaru Group has summarized in the “Subaru Green Procurement Guidelines” its expectations for business partners regarding environmental initiatives.

The guidelines primarily request cooperation in the following six areas:

- Compliance with environmental laws and regulations
- Establishment of environmental management systems (EMS)
- Submission of environmental manager registration forms
- Improved in environmental performance of business partners
- Management of environmentally hazardous substances related to parts, materials, and services
- Reduction in environmentally hazardous substances in logistics

Compliance to these guidelines is considered a necessary criterion for selecting business partners.

› [Subaru Green Procurement Guidelines](#)  PDF/656KB

Reducing Environmental Impact of Parts

The Subaru Group complies with laws and regulations concerning substances of concern in each country, including the ELV Directive (Glossary 6) and the REACH regulation.

We perform usage surveys regarding chemical substances contained in parts to our business partners as necessary and continue to perform management of those substances. In addition, we are sequentially switching from materials that are prohibited by laws, regulations, or self-regulation such as industrial norms to alternative materials and are working to reduce environmentally hazardous substances.

Procurement that Considers Biodiversity

The Subaru Group surveyed the usage status of the biological resources of leather and plant-derived materials and confirmed that there was no negative impact on the environment during the procurement process. In addition, our main office has switched to 100% recycled copy paper that does not use new plant resources and we plan to sequentially switch over at other facility as well.

Environmental Management System Request to Business Partners

The Subaru Group requests based on the Green Procurement Guidelines that business partners formulate an environmental management system with the acquisition of ISO14001 third-party certification at its base. We request the business partners who have difficulty acquiring ISO14001 to pass Eco Action 21 or our voluntary examination.

To those business partners who have passed our voluntary examination, we make inquiries or perform audits as necessary and request them to continue efforts toward early acquisition of third-party certification for environmental management.



Our Approach to Climate Change

We focus on mitigating the impact on climate change through production, distribution, and sales of our products, specifically CO₂ reduction. The Subaru Environmental Policy revised in April 2017 stipulates this intent, and from FY2018 we will also focus on nature conservation and forest protection.

Risks and Opportunities Related to Climate Change

Introduction and strengthening of environment regulations for products are given as the major risks in the business environment. For example, demands to improve fuel consumption such as exhaust gas regulations, Euro6, and the CAFE standard (Corporate Average Fuel Economy standard) and introduction and strengthening of standards related to percentage of units sold to sales of next generation environment-friendly vehicles including EVs (e.g. ZEV regulations) may become a risk.

On the other hand, since the increase in bad roads, with a focus on unpaved roads, that occurs along with an instable climate caused by climate change leads to an increase in opportunity to maximize travel performance and safety performance through all wheel drive (AWD) technology, a strength of Subaru, demand for Subaru automobiles may increase relatively.

Third-party Evaluations

› [Earned A- in the CDP Climate Change Report](#)

Initiatives in Procurement

› [See the CSR/Procurement page for details.](#)

Initiatives in Production

Energy Conservation Initiatives in Plants

Based on the Act on the Rational Use of Energy, mid- and long-term targets were set, and efforts were made to reduce CO₂ by quantitatively replacing equipment and devices such as lighting with energy-conserving equipment.

› [Environmental Data: CO₂ Emissions](#)

Introduction of Cogeneration Systems

A gas cogeneration system was introduced in the Subaru Training Facility in December 2015 to use energy more effectively. Emissions of CO₂ was reduced by a third compared to conventional systems due to the cleanness of city gas used as the fuel for gas cogeneration and the effective use of waste heat.



Initiatives in Distribution

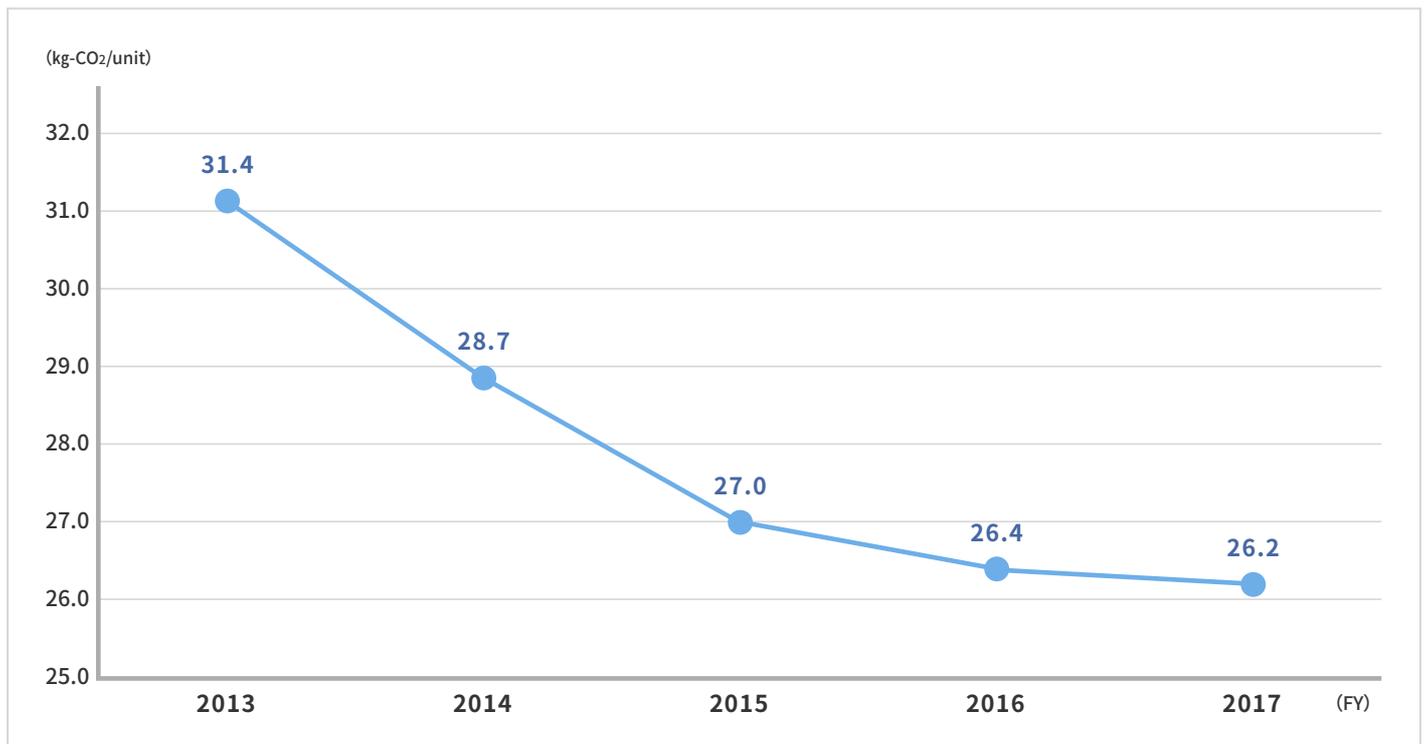
Reducing the Environmental Impact of Transport of Subaru Automobiles

During the transport of Subaru automobiles, we are making efforts to reduce the environmental burden by promoting efficient transport, such as setting optimized transportation routes, promoting modal shifts, and improving loading efficiency by flexibly responding to changes in the finished car model mix and to larger model types to be transported.



In recent years, we have been able to reduce the amount of fuel use (improved fuel efficiency) and CO₂ emissions from completed vehicle transportation by effectively using the improved Tokyo metropolitan highway network.

CO₂ Emissions during Transport per Subaru Vehicle



Optimizing Parts Supply

We established five domestic area parts centers from October 2013 to October 2016 with the goal of making part supply more efficient.

In addition, CO₂ emissions during transportation were reduced by 64.8% compared to FY2013 by consolidating the parts warehouses that had been scattered among the 44 Subaru domestic dealerships throughout Japan and reviewing the transportation routes.

Introduction of Natural Gas Vehicles (SIA)

SIA, the US production base of Subaru of vehicles, is cooperation with Venture Logistics, which is responsible for parts delivery supplier, and will proceed with the introduction of natural gas vehicles.

Compressed natural gas (CNG) has a lower environmental impact than diesel fuel and is superior in terms of cost efficiency and reliable. One significant hurdle to CNG was that there were no supply stations for natural gas close by. SIA financed the purchase of CNG fleet trucks for Venture and promoted the introduction by establishing CNG fueling stations to its property.

As a result of introducing CNG fleet trucks, 1,097 tons of CO₂ emissions per day were eliminated (corresponding to 85% of emissions before the introduction). CNG costs were also reduced by a total of \$389,136 compared to using diesel fuel.

Initiatives in Sales

Energy Conservation Initiatives in Domestic Dealers

In order to reduce greenhouse gas emissions, Subaru Domestic dealers are sequentially renovating to LED lights and high-efficient type air conditioners.

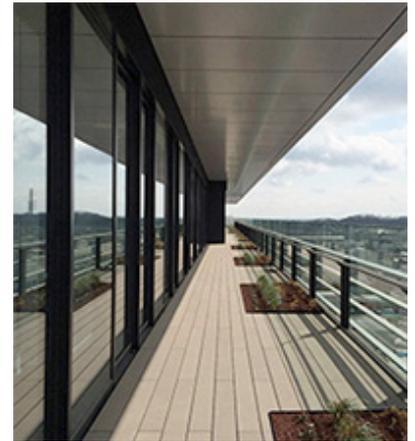
Initiatives in Offices

Initiatives at the Gunma Manufacturing plant New West Building

The New West Building (Ota, Gunma Prefecture) completed in April 2015 introduced various environmental technologies for reducing environmental impacts.

Solar power panels generate 20kW of energy, and solar heat from solar heat collection panels is used to provide hot water supply for the kitchens. In addition, a new-generation lighting system that combines individual address type control and image sensing type human sensor is introduced in the high-efficiency LED lighting. The air conditioning uses high-efficiency air-cooled heat pump chillers.

Low-Emissivity glazed window glass having high heat shielding and heat insulating properties and a cool heat trench that takes outside air from a ventilation tower through an underground isolation layer are also adopted to pre-cool or preheat the air and then supply the air to each floor. The building plans also introduced several innovations such as providing balconies to create a solar radiation shielding effect while creating rest areas, contributing to both energy conservation and a comfortable working environment without relying only on machinery.



Solar radiation shielding due to the effect of the balcony eaves



Our Approach to Recycling-based Society

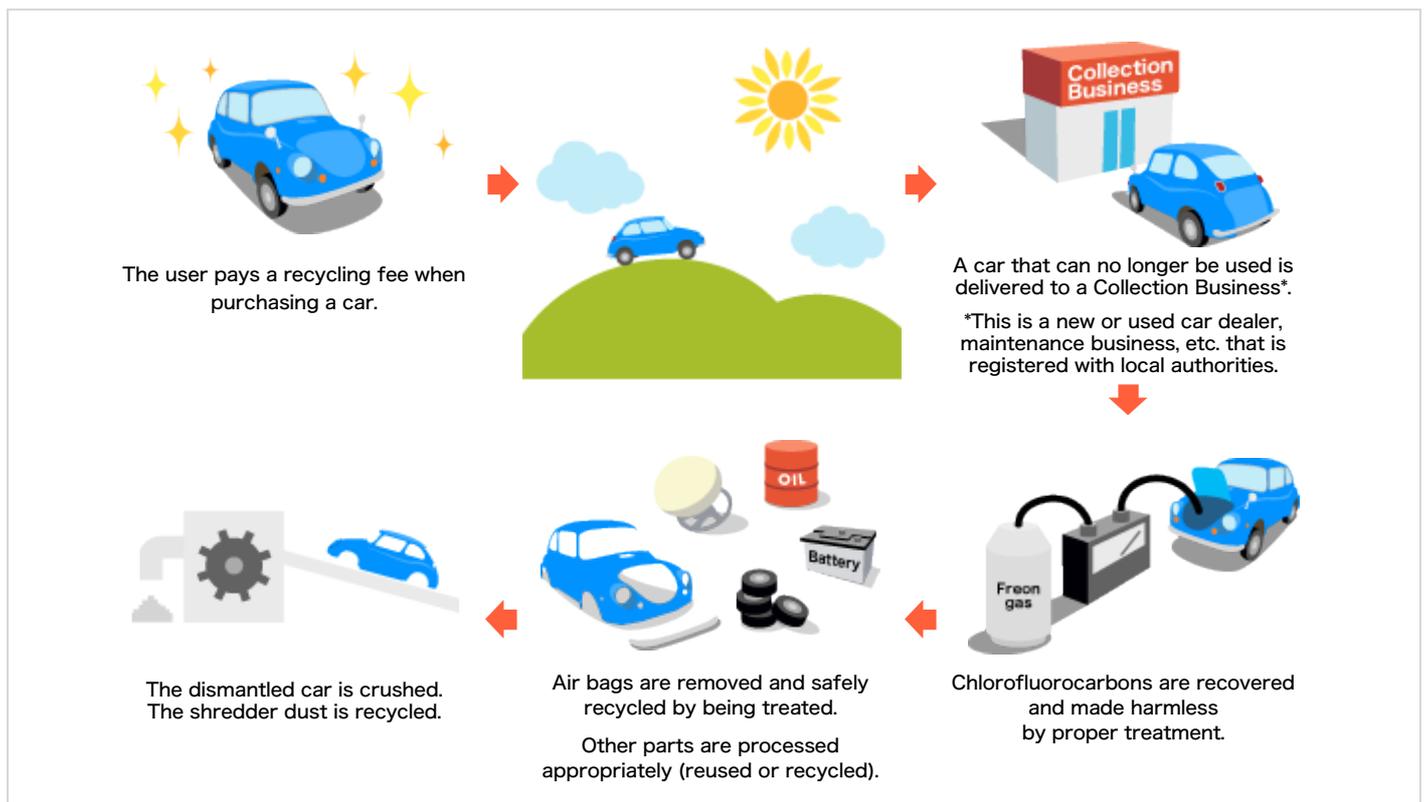
The Subaru Group understands that constructing a recycling-based society is an important theme that is closely related to corporations in the manufacturing industry.

We aim to build a recycling-based society through having 100% automobile-to-automobile recycling to the extent possible considering the product life cycle, continuing to send zero landfill from domestic and foreign production plants to landfills, and aiming for a higher dimensional recycling.

Specifically, we put “resource recycling” as one of the themes of our Voluntary Plan for the Environment, which is the policy for environmental activities of the entire group, and we will steadily implement an environmental conservation voluntary action plan based on it.

Automobile Recycling Process

The Automobile Recycling Law calls for recycling of shredder dust, airbags, etc. and treating chlorofluorocarbons when an automobile has reached end-of-life. Under this law, most of end-of-life vehicles are treated properly in Japan and Japan’s automobile recycling rate has reached 97.8% (Please see News Release).



Promotion of Recycling Conscious Design

In order to use limited resources effectively, we promote recycling conscious design in automobile manufacturing.

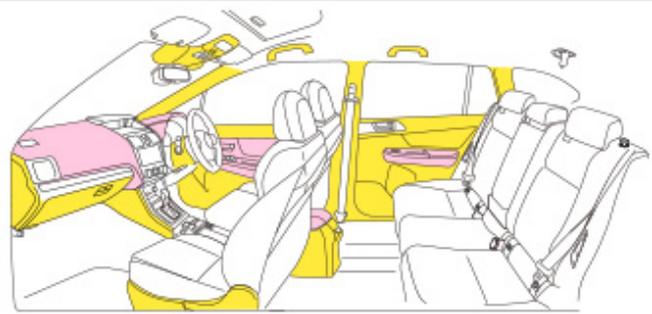
Improvement in Wiring Harness Dismantling

Adopted a harness layout and structure than can be recovered quickly and efficiently.



Use of Easily Recycled Materials

Actively adopted olefin resins that are easily recycled to use in internal parts.



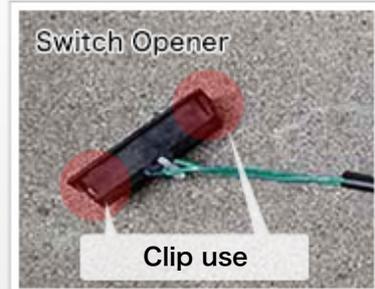
Improved Material Identification

Improved material separation by displaying the material identification not only on the inner surface of bumpers but also on the outer surface.



Adoption of Easily Dismantled Structures

Eliminated screws for the switch opener of the trunk and rear gate by using clips.



Reducing Environmentally Hazardous Substances

We are also actively working on reducing the environmentally hazardous substances in automobiles.

We promote achieving the Japan Automobile Manufacturers Association (JAMA) reduction targets for cars in development, further reducing lead and mercury and using alternatives to environmentally hazardous substances such as brominated flame retardants.

Reduction Target and JAMA[※]s Voluntary Action Program

Substance	Target (Implemented since)	Details of Reduction Efforts
Lead	Since Jan. 2006	Reduce the amount used per vehicle to less than 1/10 of 1996 levels
Mercury	Since Jan. 2005	Use prohibited, with a few exceptions (e.g., minute amounts in discharge headlights, and liquid crystal panels)
Cadmium	Since Jan. 2007	Use prohibited
Hexavalent Chromium	Since Jan. 2008	Use prohibited

Reducing VOCs in Vehicle Interiors

We are reviewing the components and adhesive agents used in vehicle interiors in order to reduce the use of volatile organic compounds (VOCs), such as formaldehyde and toluene, which are said to cause nose and throat irritation.

In the LEGACY, LEVORG, IMPREZA, FORESTER, EXIGA, and BRZ, we achieved the voluntary target by JAMA[※] by reducing the concentration of the 13 substances defined by the Ministry of Health, Labor and Welfare to levels below the indoor concentration guideline values. We will continue our efforts to reduce the levels of VOCs and such substances to further make the environment in vehicle interiors comfortable.

[※]Voluntary target by JAMA: To reduce cabin concentrations of the 13 substances identified by the Ministry of Health, Labor and Welfare to levels equivalent to or lower than the figures stipulated in the guidelines for new models (produced and sold in Japan in 2007 and after) under the Voluntary Approach in Reducing Cabin VOC Concentration Levels initiated by JAMA.

Processing of End-of-Life Vehicles (ELVs)

The Automobile Recycling Law enacted in 2005 obligates automobile manufacturers to fully remove and appropriately treat "Automotive Shredder Residue (ASR)," "Chlorofluorocarbons (CFCs)," and "Airbags."

The ASR recycling rate for FY2017 was 97.8%, already satisfying the FY2017 legal standard of 70%. In addition, we have been keeping our monthly record of zero landfill, which was first attained in May 2011.

As for airbags, we attained a recycling rate of 93.6%, exceeding the legal standard of 85%. Also, the entire amount of recovered CFCs has been appropriately treated.

Initiatives in Procurement

› [For details, please see the CSR/Procurement page.](#)

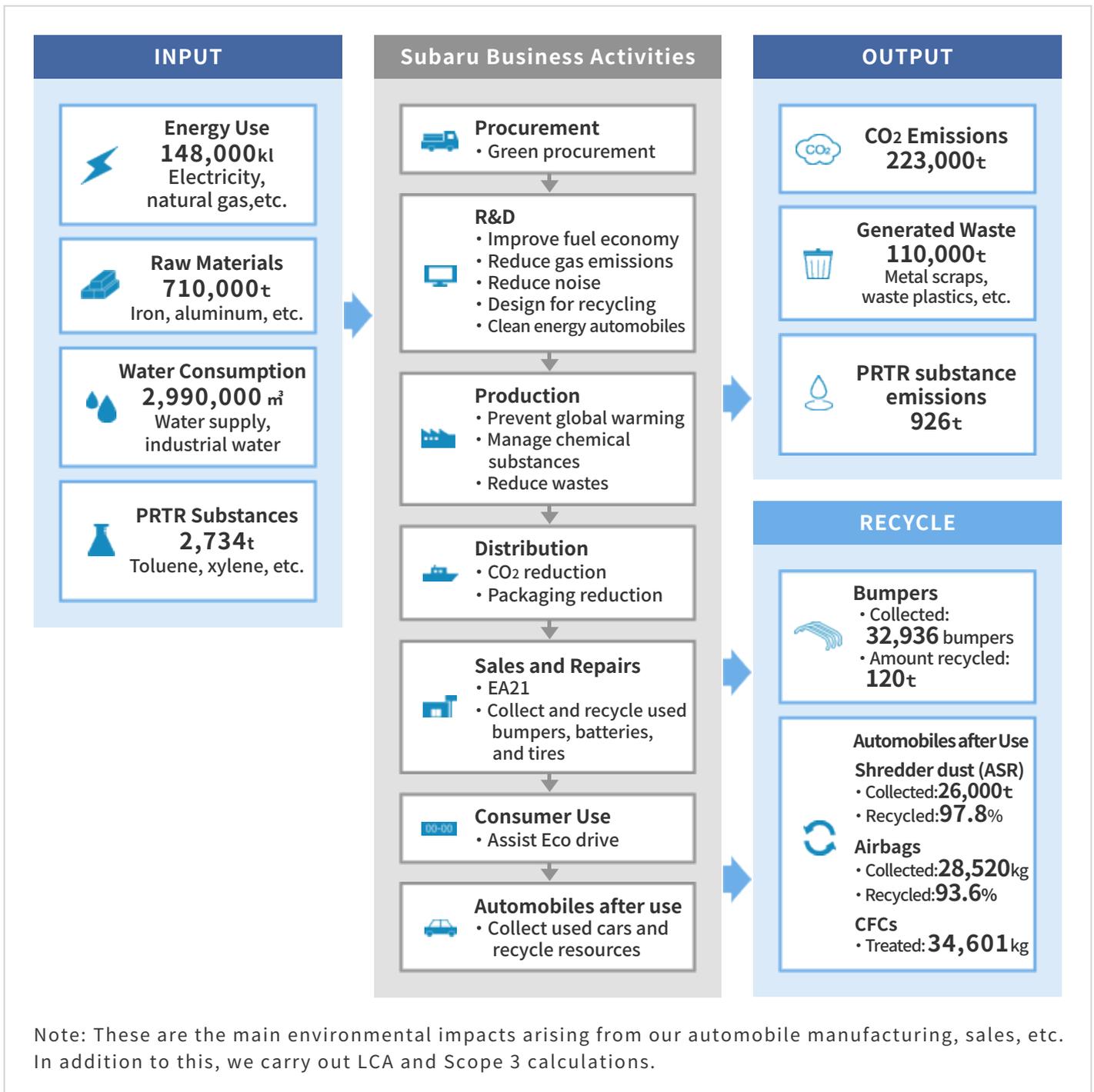
Initiatives in Production

Main Resources Invested in Automobile Manufacturing

In order to promote our environmental initiatives effectively and efficiently, we grasp the inputs and outputs in our business activities as well as overall of energy and resource consumption and environmental impact.

In addition, in order to realize a sustainable society in harmony with the environment through products and services, we take into consideration the environmental impact throughout the product lifecycle, from development, design to use and disposal, and strive to reduce our environmental impact comprehensively.

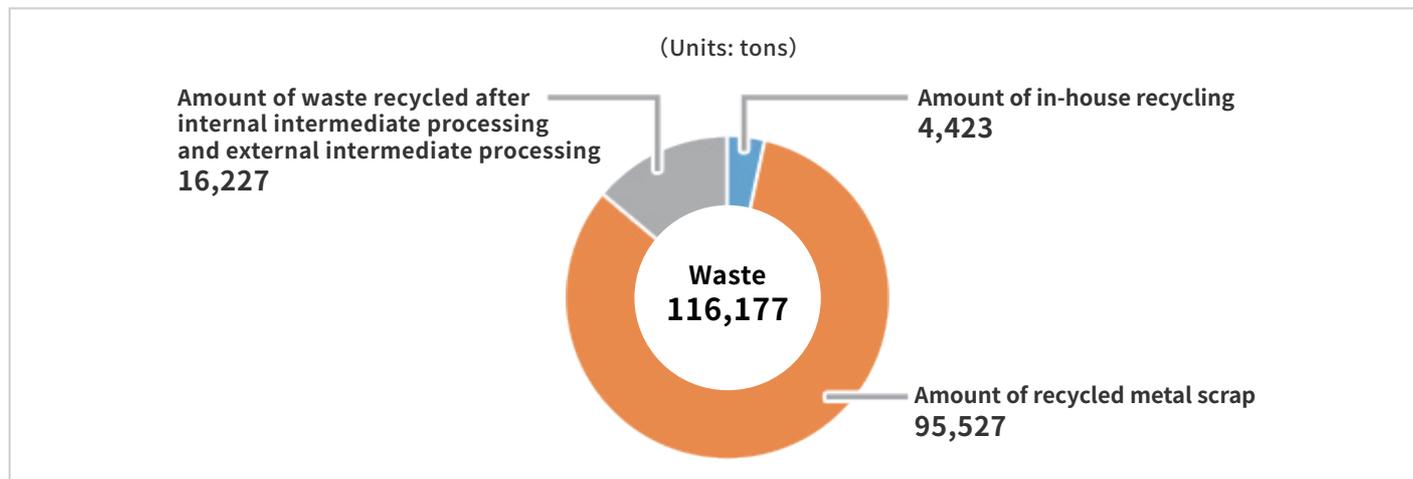
Overall Image of Subaru's Environmental Impact Concerning Automobiles [FY2017]



Initiatives for Waste Reduction at Plants

All Subaru manufacturing plants have maintained zero landfill for waste materials since FY2005.

Overview of Waste Generation and Processing in All Sites in FY2017



Note that no landfill waste was generated after external intermediate processing.

Primary Waste and Recycling Method

Primary Waste	Primary Recycling Method
Wastewater treatment plant sludge	Raw materials for cement
Paint sludge	Reducing agents for steel
Waste plastics	RPF (solid fuels, etc.)
Paper waste	Recycled paper, RPF, etc.

Initiatives in Distribution

Reuse of Packaging Materials

Subaru Logistics Co., Ltd., which handles packaging and transport for complete knockdown (CKD) parts of Subaru automobiles, has been carrying out activities to reduce environmental impact, focusing on the reuse of packaging materials.

The amount of reused packaging materials in FY2017 was 652.2 tons, 19% increase from the previous year. This was caused by the addition of the Impreza to the models produced in the United States and the increased production of the Legacy.

In addition, the amount of reused packaging material newly purchased was 15.3%, a 1.2 point reduction from the previous year. The cause for the reduction in new purchases was in sharing materials among car models and the reduction in damaged products. We will continue to carry out environmental impact reduction activities by expanding the reuse of packaging materials.

※Complete knockdown (CKD)



Plastic tray for calipers

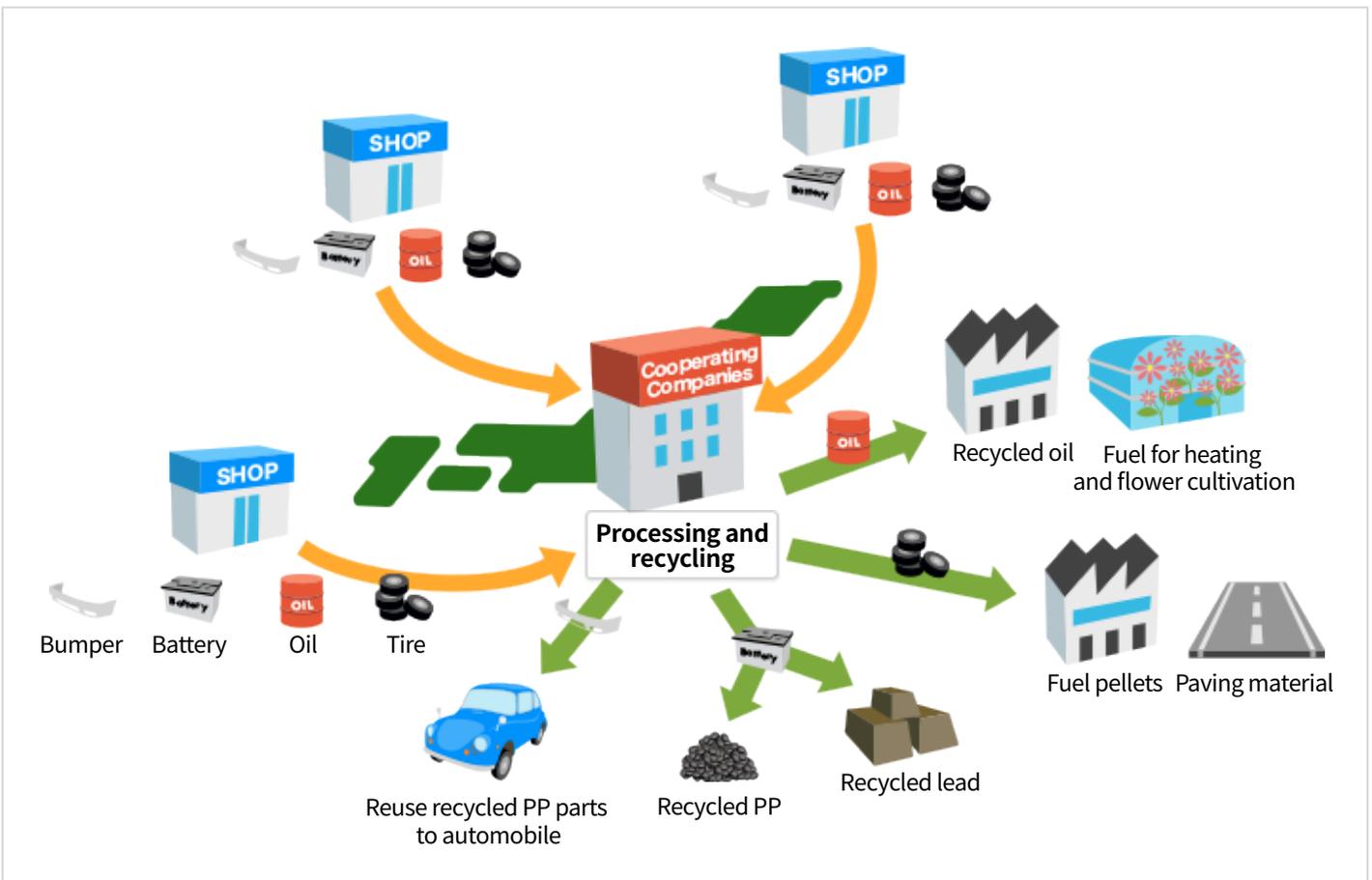


Foam for drive shafts

Initiatives for Sales

Zero Emission at Domestic Dealers

From April 2012, Subaru dealers began improving appropriate treatment activities for waste generated from their business activities to promote environmental conservation. Collaboration and cooperation with a body of companies and industrial organizations are being carried out for resource recycling as well as a review of conventional treatment methods, leading to zero emission activities targeting resource recycling within Japan. Various activities are being developed, including recycling of used lead-acid batteries, waste oil, used tires, etc. As the result of these activities in FY2017, 1,348 tons of used lead-acid batteries (208,231 used batteries), 5,290 kiloliters of used oil, and 197,902 used tires were collected and recycled. We believe that the zero emission activities of dealers, who are closest to stakeholders, are environmental conservation activities closer to home. They are also able to provide a safe and secure environment, in addition to products, by promoting more effective use and appropriate processing through defining corporate responsibility and recycling resources.



Recycling Waste Oil

Waste oil generated at All Subaru domestic dealerships during oil changes is recycled as recycled fuel oil based on the zero emissions scheme created by us.

Every year, farmers in Yamagata prefecture can grow beautiful poinsettia and cyclamen using this recycled fuel oil for heating greenhouses.

These cyclamens were given to visitors to our event held in December 2016.



Recycling Used Tires

Used tires changed and collected at Subaru domestic dealers are crushed and made into rubber chips, which are then reused as fuel at plants such as power plant, paper making company (pulp) and iron factory, etc. In addition to this kind of thermal recovery, we have started to reuse these chips as paving materials. The used tires made into rubber chips are mixed in asphalt, or applied as an overlay of asphalt pavement. They can be used for parking lots, children's playgrounds, athletic fields, and sidewalks of hospitals/nursery homes, with varied blending ratios of chips depending on the use. We not only recycle the outer layer of the tires, but the entire rubber parts of those tires for pavement materials by sorting each part thoroughly, such as wires, rubber components, etc. We are the first car manufacturer to recycle all the rubber parts of a tire for pavement materials.



Staff Parking



Stellar Town: Animal Square

Initiatives for Offices

Dismantling facilities with consideration for the environment - New construction method, the first in Japan, dramatically reduces environmental impact-

The demolition work performed from July 2016 to March 2017 to rebuild our Gunma Manufacturing Division West Building adopted a new construction method, the first in Japan, that minimized the impact on the surrounding environment with the cooperation of the construction company in charge of the work. With this new construction method, there was virtually no vibration during demolition and noise transmitted to the site boundary was reduced to about 3/4 of that produced by conventional methods. In addition, the amount of dust was kept to below 10% of that produced by conventional methods.



Overseas Initiatives

National Parks Zero Landfill Initiative

National Parks in the United States are a beloved natural resource, explored by millions every year. At Subaru, because we have such a strong connection to the outdoors we want to help protect and enhance our parks today and for future generations. That's why we are piloting a zero-waste initiative with the National Parks that borrows from our successful efforts to make our US manufacturing plant a zero-waste facility. This initiative is being piloted at three National Parks – Denali, Grand Teton and Yosemite – in partnership with the National Parks Conservation Association. Here, we are working to test various approaches to eliminate waste from our parks and then create best practices that can be applied, ideally, across the entire National Parks system.



Recycling container at Grand Teton National Park. SOA has purchased new containers for visitor to deposit their recycling. In 2016 the Park increased their recycling rate by 2% and educated thousands of employees and visitors.



Our Approach to Water Resources

In our business activities, we perform appropriate management to ensure, use, and discharge water by establishing targets.

The following are established targets for water usage.

- Mid-term target for water usage: Decrease the water usage per unit by 1% every year from FY2011 level (307m³/100 million yen)

For FY2017, we were able to reduce water usage per unit to 169m³/100 million yen, less than the reduction target of 292m³/100 million yen.

The total amount of water usage and the consumption unit are managed by totalling the amount of water for each work site and reporting and verifying these figures at the biannual meeting.

Water quality management is performed by constant monitoring, setting voluntary standards that are 20% higher than legal standards for water quality and regularly conducting voluntary inspections as well as third-party inspections.

There were no water quality test results that did not meet the voluntary management standards.

> [Environmental Data: Water Consumption](#)

Implementation of Water Risk Assessment

We had a third-party expert implement a water risk assessment[※] related to water intake and discharge at SIA and Gunma Manufacturing Division, which are our bases for automobile manufacturing, in order to use water resources sustainably.

The assessment estimated water supply and demand in the river basins where each base is located, and evaluated the possibility of water disaster and the impact on public health, ecosystem, etc. at five levels. We use these to set priorities and perform countermeasures. Both bases currently have a moderate water supply and demand risk and it is expected that the current risk level will be maintained for the mid- to long-term even when climate change is taken into consideration. No biodiversity protection areas have been confirmed downstream and a low vulnerability to water pollution has been confirmed. Use and conservation of water resources meeting local demand will be considered based on this assessment.

※Reference database

(1)WRI Aqueduct water risk atlas、WWF-DEG Water Risk Filter、PREVIEW Global Risk Data Platform、Climate Change Knowledge Portal、Integrated Biodiversity Assessment Tool、NCD-VfU-GIZ Water Scarcity Valuation Tool (Version 1.0)、Costing Nature / Water World



Our Approach to Preventing Pollution

The Subaru group has “The earth, the sky and nature’ are Subaru’s fields of business” as its environmental philosophy and understands that the prevention of pollution to the soil, air, and groundwater is an important responsibility for the continuation of a sustainable society and our business. Based on this, we established voluntary action standards above and beyond the legal standards and processes soil, air, groundwater, noise, etc. appropriately.

Initiatives in Production

VOC Reduction

The amount of volatile organic compounds (VOCs) we emitted from the automobile coating process was 47.7g/m² in FY2017, down 47.8% from FY2001 levels.

We realized the reduction in VOC emission mainly by decreasing the use of cleaning thinners and increasing the recovery of used thinners.

Prevention of Soil and Underground Water Pollution

We have voluntarily performed soil and groundwater tests at our facilities since 1998, and have implemented purification measures and groundwater monitoring as required.

Since the 2003 Soil Contamination Countermeasures Act came into effect, we have been filing reports and conducting tests in accordance with the law.

Status of Storage and Management of PCB Wastes

We store PCB waste appropriately according to the law and processes them based on a suitable plan so that processing is completed by a predetermined time.



Our Approach to Biodiversity

Recognizing the importance of preserving biodiversity, the Subaru Group makes clear in its Environmental Principles that it strives to address environmental issues on a global scale including biodiversity through all business activities while referencing external initiatives such as the Guidelines for Private Sector Engagement in Biodiversity and Declaration of Biodiversity - Guide to Action Policy by Keidanren, Federation of Economic Organizations. We are also in the process of creating an active biodiversity preservation network through participation in the Japan Business and Biodiversity Partnership.

Based on these ideas, we launched a working group in FY2015 across all business sites, divided business activities into risks and opportunities, created a road map, and steadily supported and promoted these initiatives to the entire group.

Domestic Initiatives

Activities for Preserving Rare Species

Using corporate sites as safe places to preserve endangered rare species has been gathering attention.

In the Tokoji temple in Kitamoto City, where our Saitama Manufacturing Division is situated, there stands IshitoKabazakura (cherry tree), one of the Nihon Godai Zakura (the five major cherry trees in Japan), designated as Japan's natural monument in 1922. We inherited the descendants of the tree in March 2003, and are carefully nurturing them at our site. We had elementary school children, who came to our site for field trips, learn the history of the cherry tree and the importance of preserving endangered rare species.



The tree brings forth pretty blossoms every spring.



Explanation of the origin of Ishitokaba Zakura at the factory

Initiatives at the Tokyo Office

Based on the Ikimono Plus (R)[※], a simple evaluation tool for biodiversity, the boundary areas of the north and east sides at the Tokyo Office were planted with East Asian beautyberry (*callicarpa japonica*) and bamboo-leaf oak (*quercus myrsinifolia*) that are grown around Musashino area, in consideration of biodiversity. Through this initiative, we are contributing to enriching the Musashino scenery of rich nature.



※Ikimono Plus is a simple evaluation tool for biodiversity jointly developed by 8 major construction companies.

Distribution of Flower Seedlings to Contribute to Biodiversity

As part of the Subaru Community Exchange Association's activities, the Gunma Manufacturing Division promotes initiatives to contribute to biodiversity.

Flower Distribution Activities

Three times a year, flower seedlings of varieties that contribute to biodiversity are distributed to member corporations of the Subaru Community Exchange Association wishing to purchase them in order to promote each company's greening activities.



Elementary School Flower Bed Contest

A flower bed contest is held for the elementary schools in Ota city and Oizumi town. Flower seedlings that contribute to biodiversity were donated to the elementary schools to create the flower beds.

In 2016, there were 301 participants from 16 schools.

We believe that the participants were able to have rich experiences such as having fun by raising flowers and making new discoveries through creating the flower beds.

Initiatives for Procurement

› Procurement considering biodiversity

Overseas Initiatives

The SUBARU Forest ecology Conservation Project in China: “31 Forest Star Tours”

The SOC established the “The SUBARU Ecology Conservation Forests” in 31 nature reserves starting in 2013 and has invited guests for afforestation activities, activities to protect rare animals, and has provided vehicles and resources required for those activities.



In September 2016, we visited the largest nature reserve in Hainan Province with media and guests.

We had a first-hand experience of the inspection and conservation activities with the Yinggeling Nature Reserve station, a conservation organization for rare tropical birds and monkeys, and felt the importance of ecological conservation.

We will continue to perform activities in harmony with the local natural environment and promote initiatives that protect biodiversity.

› [SOC “31 Forest Star Tours”](#) 

› [Letter of Appreciation from the UN to SOC Public Interest Activities](#)

Subaru and National Wildlife Foundation Certified National Wildlife Habitats

With the monarch butterfly population declining by more than 90% due to habitat loss, Subaru and the National Wildlife Foundation partnered to raise awareness of this important issue and help preserve these important pollinators. In April 2016, the partnership spurred the creation of 377 Certified National Wildlife Habitats at Subaru retailers across the United States. Subaru also distributed 100,000 Butterfly Heroes Kits that provided milkweed seed packets to feed over 400,000 butterflies.



Monarch butterfly subject to conservation



The main aspects of our environmental performance in FY2017 are shown in the following figures.

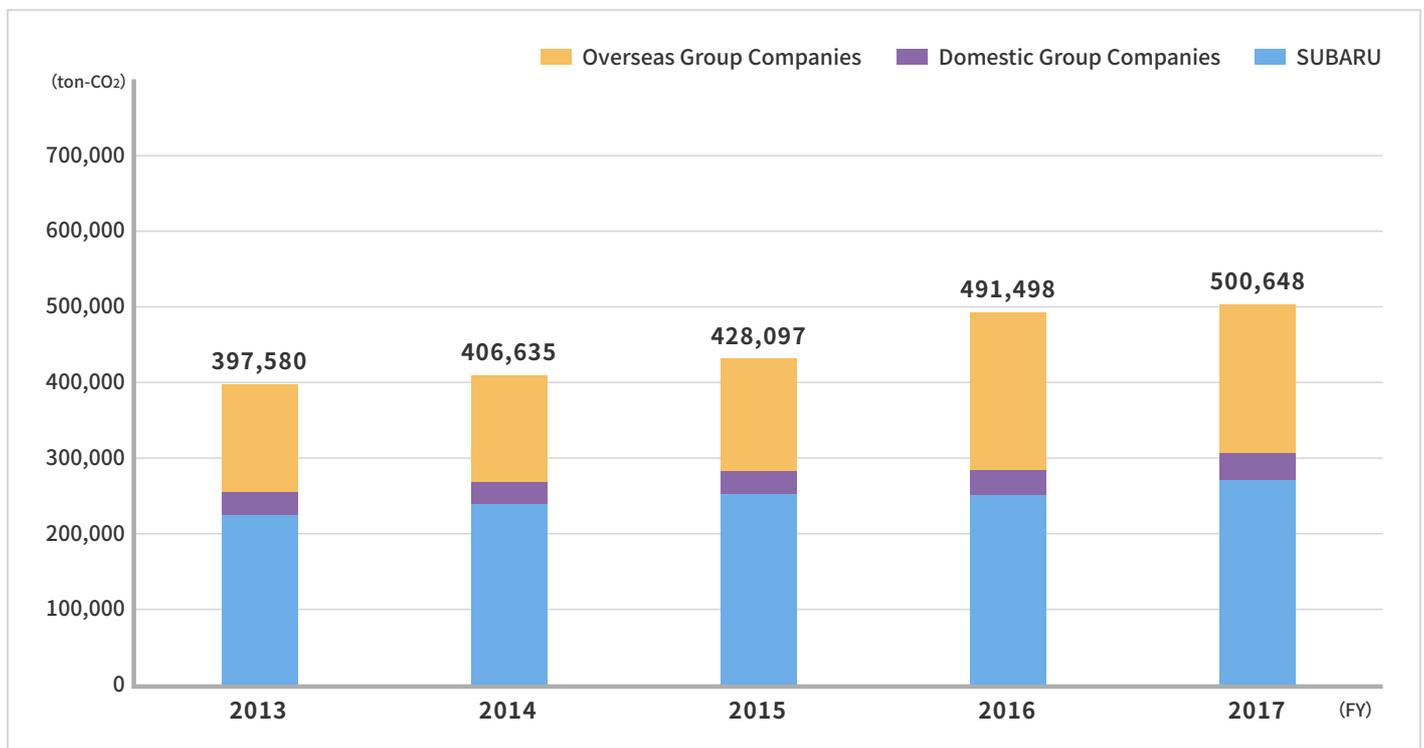
CO₂ emissions, waste generation, water usage, etc. have all increased from the previous year due to increased production volume, etc.

Each domestic business site sets and manages voluntary standards that are 20% higher than pollution prevention laws and regulations standards.

Targeted companies/divisions: Subaru Corporation : Gunma, Utsunomiya, Saitama and Tokyo
Domestic Group Companies:Yusoki Kogyo K.K., Fuji Machinery Co.Ltd., Ichitan Co.,Ltd., Kiryu Industrial Co., Ltd., Subaru Logistics Co., Ltd.
Overseas Group Companies: SIA、 SOA、 SCI、 SOMI、 SRD

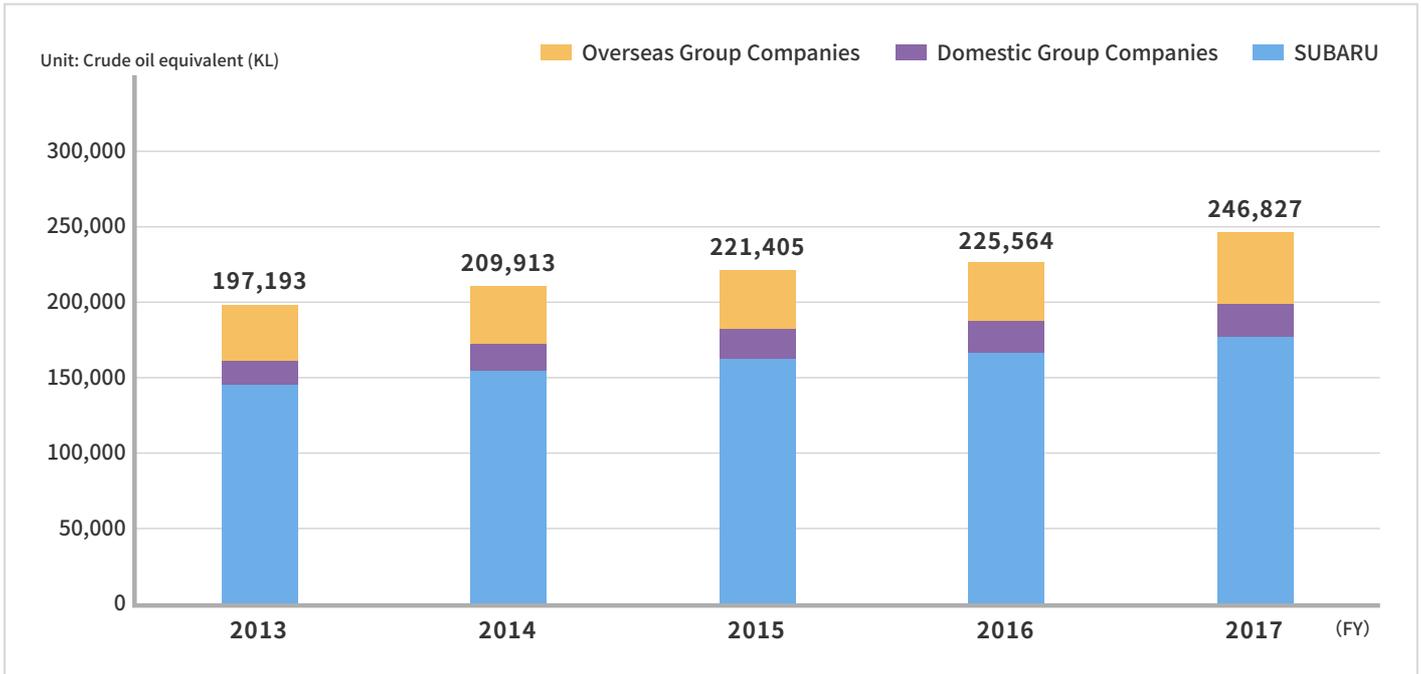
CO₂ Emissions

SUBARU + Domestic Group Companies + Overseas Group Companies



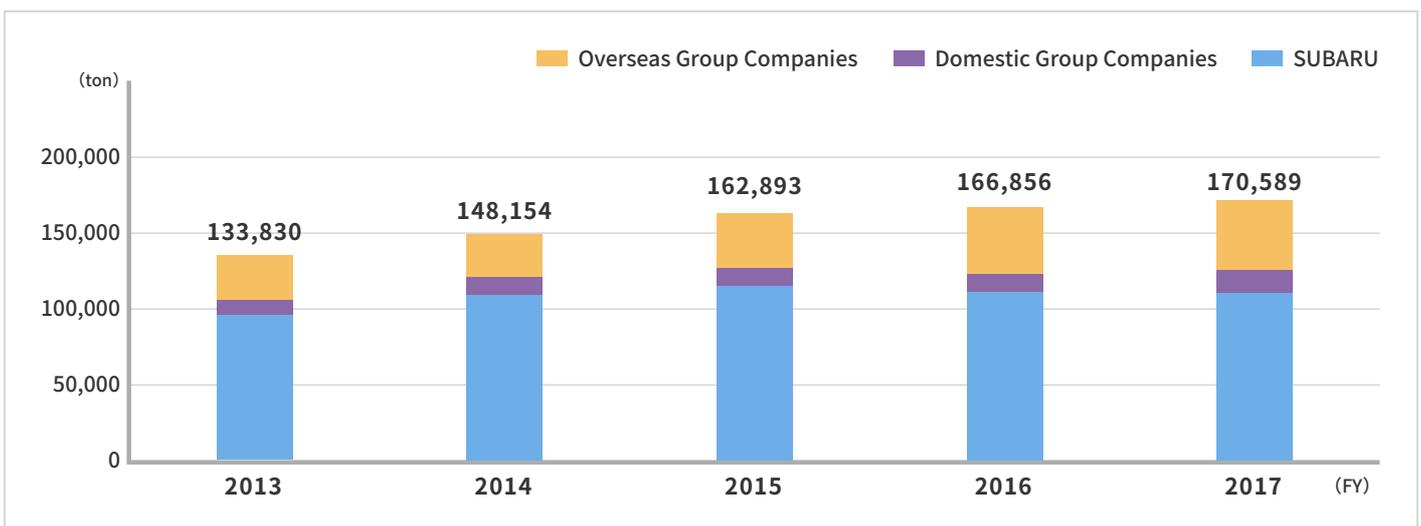
Energy Consumption

SUBARU + Domestic Group Companies + Overseas Group Companies



Waste Generation

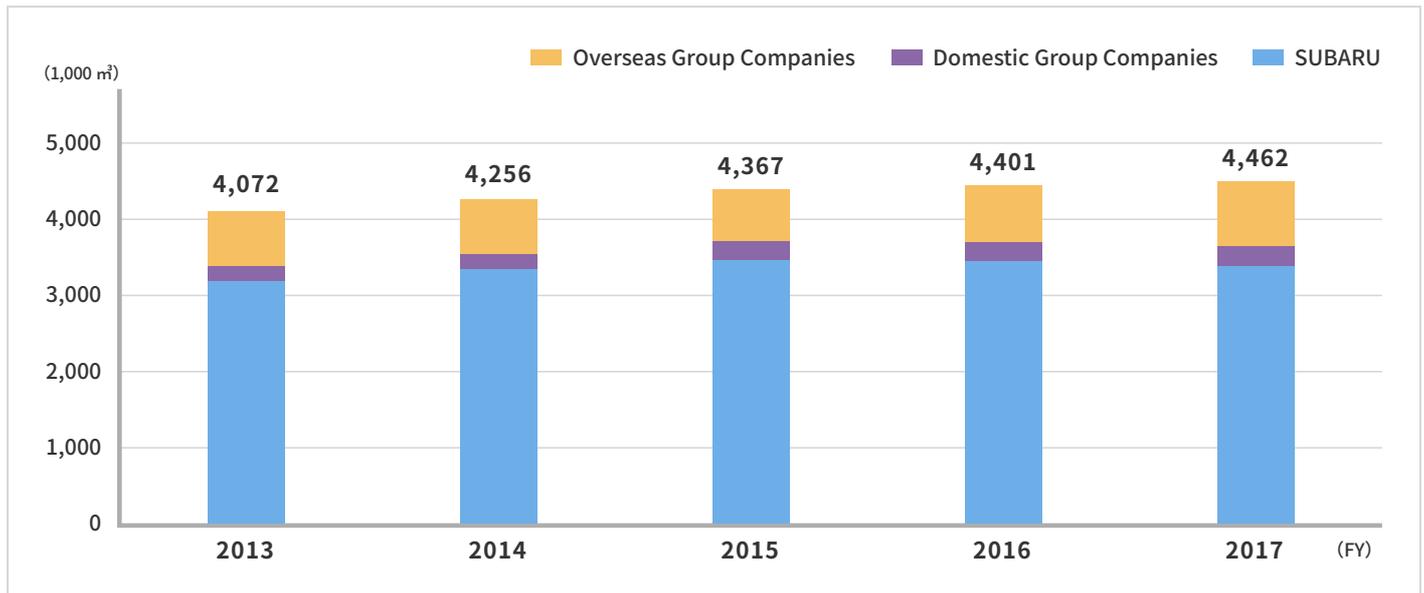
SUBARU + Domestic Group Companies + Overseas Group Companies



※Including scrap metal sold.

Water Consumption

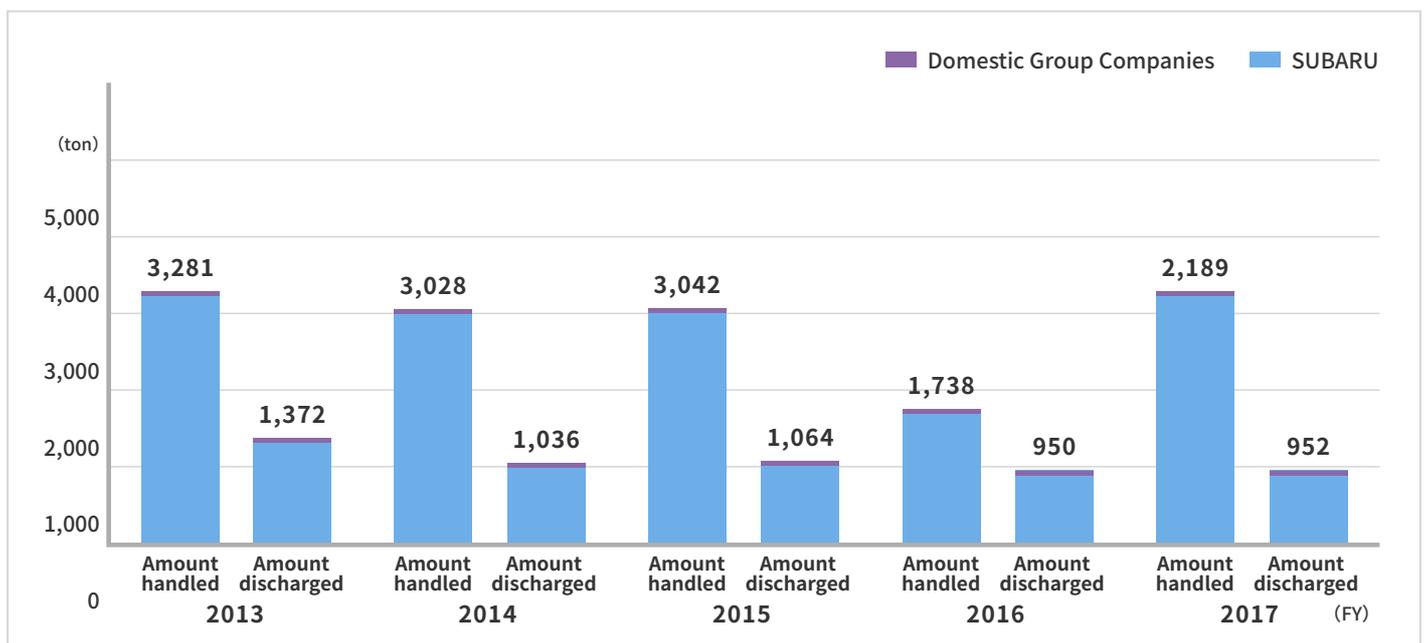
SUBARU + Domestic Group Companies + Overseas Group Companies



PRTR Substances Handled and Emitted

PRTR Substances: Japan's Pollutant Release and Transfer Register (PRTR) Law.

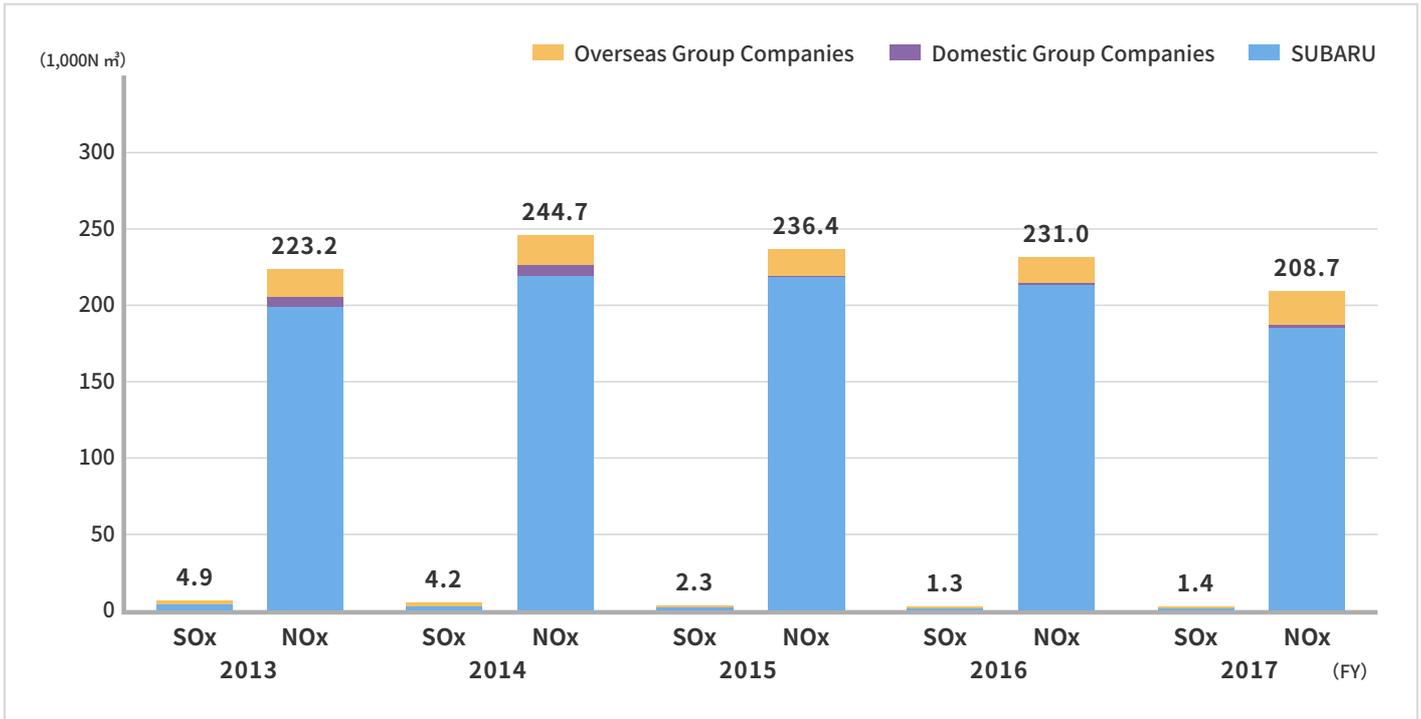
SUBARU + Domestic Group Companies



There is no handling of hazardous wastes specified in Basel Convention Annex I, II, III, and VIII.

NOx and SOx Emissions

SUBARU + Domestic Group Companies + Overseas Group Companies





Gunma Manufacturing Division

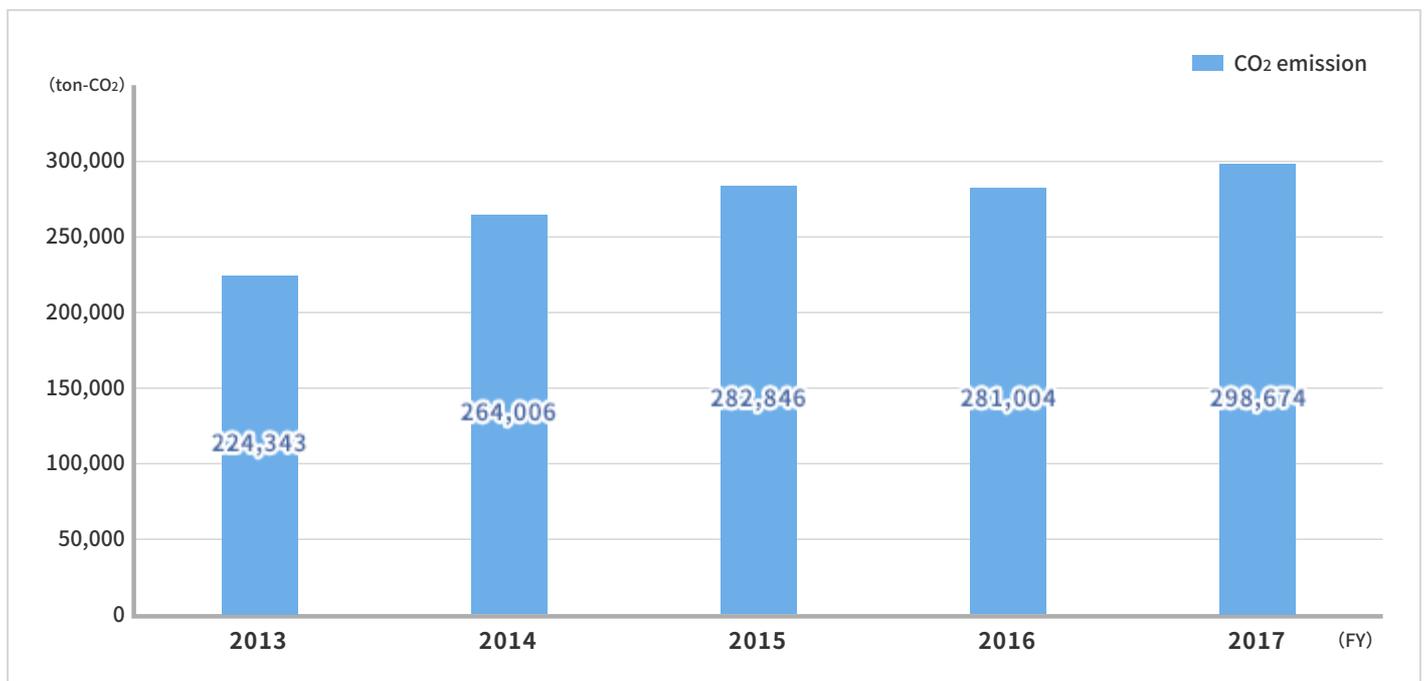
To contribute to global environment conservation, the Gunma Manufacturing Division that manufactures Subaru vehicles is actively engaged in efficient use of energy through carrying out efficient, step-by-step capacity increase.

Initiatives for Prevention of Global Warming

CO₂ emissions in FY2017 was 298,674 tons-CO₂.

We will continue efforts in energy conservation and contributions in preventing global warming.

Changes in CO₂ Emissions

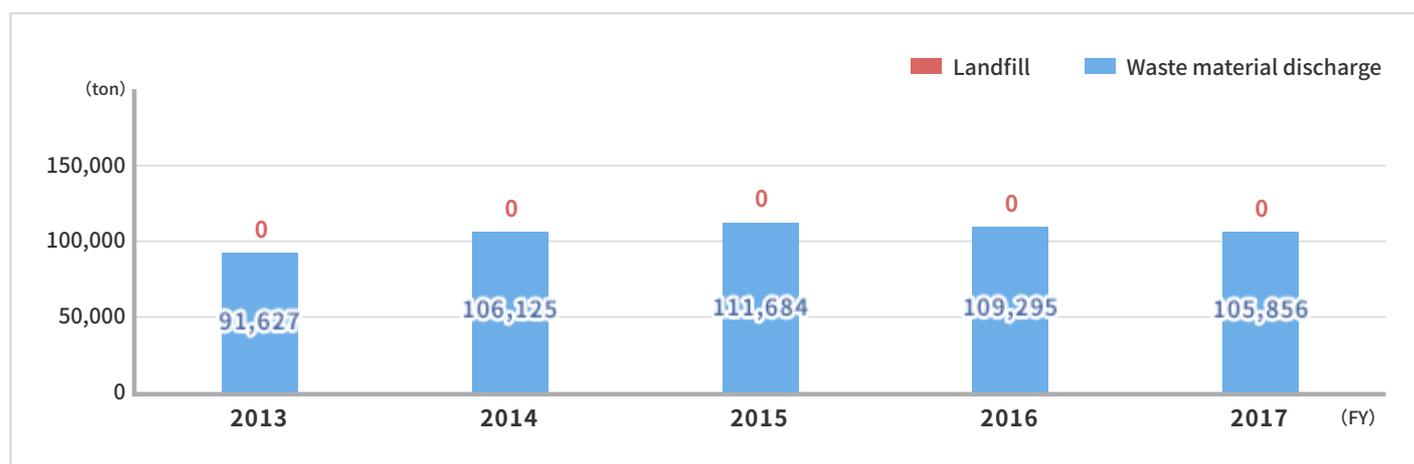


Note: After FY2016, the transitional data for CO₂ emissions is presented in the values calculated and reported based on the Act on Promotion of Global Warming Countermeasures.

Initiatives for Zero Landfill

The amount of waste material discharged in FY2017 was 105,856 tons.
The amount for landfill was 0 tons, continuing zero landfill from FY2002.
We will continue to improve recycling and reduce waste material discharge.

Changes in Waste Material Discharge and Landfill



Note: Subaru definition of zero landfill

Total volume of landfill waste (amount directly sent to landfills + amount sent to landfills after intermediate processing) is less than 0.5% of the total waste volume (industrial waste + industrial waste subject to special control + general waste from business activities) excluding metals

Initiatives for Pollution Prevention

In order to maintain harmony with the local society and the lush natural environment, we promote initiatives such as managing exhaust gas and effluent and reducing environmental risk as well as activities for preventing occurrences of environmental accidents and pollution. We will continue our efforts for a target of zero that includes exceeding standards.

Environment-related Measurements for FY2017

Voluntary standards for air, water quality, noise, vibrations, etc. are set and are managed to be 20% higher than the legal standards.

Water quality measurements

All measurement results were compliant with Water Pollution Prevention Law, Gunma prefectural regulations, and Ota-Oizumi pollution prevention agreements.

Main Plant

[Unit: mg/ℓ except for pH]

Item	Regulated value (Prefectural regulations)	Voluntary standard	Maximum	Minimum	Average
Concentration of hydrogen ion (pH)	5.8~8.6	6.1~8.3	7.4	6.9	7.2
Biochemical oxygen demand (BOD)	25	20	6.0	2.0	3.8
Suspended solids (SS)	50	40	4.4	1.0	2.2
n-hexane extract content (Mineral oil content)	5	4	1.0	1.0	1.0
n-hexane extract content (Animal and plant oils and fats content)	30	24	1.0	1.0	1.0
Fluorine	8	6.4	2.7	0.2	1.3
Zinc	2	1.6	0.3	0.1	0.2
Soluble iron	10	8	0.2	0.1	0.1
Soluble manganese	10	8	0.1	0.1	0.1
Total phosphorus	16(8)	6.4	2.7	1.1	1.8
Total nitrogen	120(60)	48	13.5	4.6	7.8

[Effluent is discharged into public rivers. Values for total phosphorus and total nitrogen are daily averages.]

Yajima Plant

[Unit: mg/ℓ except for pH]

Item	Regulated value (Prefectural regulations)	Voluntary standard	Maximum	Minimum	Average
Concentration of hydrogen ion (pH)	5.8~8.6	6.1~8.3	7.3	7.2	7.3
Biochemical oxygen demand (BOD)	25	20	7.3	6.4	6.9
Suspended solids (SS)	50	40	2.4	2.0	2.2
n-hexane extract content (Mineral oil content)	5	4	1.0	1.0	1.0
n-hexane extract content (Animal and plant oils and fats content)	30	24	1.0	1.0	1.0
Fluorine	8	6.4	1.9	1.3	1.6
Zinc	5	4	0.5	0.2	0.4
Soluble iron	10	8	0.1	0.1	0.1
Soluble manganese	10	8	0.7	0.3	0.5
Total phosphorus	16(8)	6.4	0.4	0.4	0.4
Total nitrogen	120(60)	48	5.1	4.9	5.0

[Effluent is discharged into public rivers. Values for total phosphorus and total nitrogen are daily averages.]

Oizumi Plant

[Unit: mg/ℓ except for pH]

Item	Regulated value (Prefectural regulations)	Voluntary standard	Maximum	Minimum	Average
Concentration of hydrogen ion (pH)	5.8~8.6	6.1~8.3	7.4	7.2	7.3
Biochemical oxygen demand (BOD)	10	8	5.4	4.8	5.1
Suspended solids (SS)	10	8	1.2	1.0	1.1
n-hexane extract content (Mineral oil content)	3	2.4	1.0	1.0	1.0
n-hexane extract content (Animal and plant oils and fats content)	30	24	1.0	1.0	1.0
Fluorine	8	6.4	0.2	0.2	0.2
Zinc	2	1.6	0.2	0.2	0.2
Soluble iron	5	4	0.1	0.1	0.1
Soluble manganese	5	4	0.1	0.1	0.1
Total phosphorus	16(8)	6.4	0.4	0.3	0.4
Total nitrogen	120(60)	48	18.7	6.0	12.4

[Effluent is discharged into public rivers. Values for total phosphorus and total nitrogen are daily averages.]

North Plant

[Unit: mg/ℓ except for pH]

Item	Regulated value (Prefectural regulations)	Voluntary standard	Maximum	Minimum	Average
Concentration of hydrogen ion (pH)	5.8~8.6	6.1~8.3	7.9	7.8	7.9
Biochemical oxygen demand (BOD)	25	20	1.1	1.0	1.1
Suspended solids (SS)	50	40	2.8	1.0	1.9
n-hexane extract content (Mineral oil content)	5	4	1.0	1.0	1.0
n-hexane extract content (Animal and plant oils and fats content)	30	24	1.0	1.0	1.0
Fluorine	8	6.4	0.2	0.2	0.2
Zinc	5	4	0.0	0.0	0.0
Soluble iron	10	8	0.1	0.1	0.1
Soluble manganese	10	8	0.2	0.1	0.2
Total phosphorus	16(8)	6.4	0.1	0.1	0.1
Total nitrogen	120(60)	48	1.4	1.4	1.4

[Effluent is discharged into public rivers. Values for total phosphorus and total nitrogen are daily averages.]

Air measurements

All measurement results were compliant with Air Pollution Control Act.

Main Plant

[Unit: ppm for NOx, and g/Nm³ for particulate matter]

Equipment/facility	Substance	Regulated value	Voluntary standard	Maximum	Average
Paint drying furnace	NOx	230	184	43	28
	Particulate matter	0.2	0.16	0.003	0.002

[Data for primary equipment/facility is presented here.]

Yajima Plant

[Unit: ppm for NOx, and g/Nm³ for particulate matter]

Equipment/facility	Substance	Regulated value	Voluntary standard	Maximum	Average
Paint drying furnace	NOx	230	184	51	28
	Particulate matter	0.2	0.16	0.004	0.002

[Data for primary equipment/facility is presented here.]

Oizumi Plant

[Unit: ppm for NOx, and g/Nm³ for particulate matter]

Equipment/facility	Substance	Regulated value	Voluntary standard	Maximum	Average
Aluminum melting furnace	NOx	180	144	46	38
	Particulate matter	0.3	0.24	0.06	0.014

[Data for primary equipment/facility is presented here.]

Noise and vibration measurements

All measurement results were compliant with Noise Regulation Act and Vibration Regulation Act.

Noise

Gunma prefectural regulations, and Ota-Oizumi pollution prevention agreements

[Unit: dB(A)]

Measurement Location	Regulated value (Night)	Voluntary standard	Measurement sites	Measured value
Main Plant	55	54	20	33~54
Yajima Plant	55	54	20	40~52
Oizumi Plant	50	49	20	37~48

Vibration

Gunma prefectural regulations, and Ota-Oizumi pollution prevention agreements

[Unit: dB(A)]

Measurement Location	Regulated value (Night)	Voluntary standard	Measurement sites	Measured value
Main Plant	65	64	20	13.3~41.7
Yajima Plant	65	64	20	16.2~39.2
Oizumi Plant	60	59	20	17.8~36

VOC measurements for paint equipment, etc.

All measurement results were compliant with Air Pollution Control Act.

VOC

Air Pollution Control Act

[Unit: ppm-C]

Equipment/facility		Regulated value	Maximum	Minimum
Paint booth, etc.	(Main Plant)	700	696	140
	(Yajima Plant)	700	445	91
	(Yajima Plant)	400	254	93

Odor measurements

All measurement results were compliant with Offensive Odor Control Act.

Measurement Location	Regulated value	Voluntary standard	Measurement sites	Measured value
Main Plant	21	20	6	Less than 10
Yajima Plant	21	20	6	Less than 10
Oizumi Plant	21	20	6	17 or less

PRTR Substances Handled and Emitted

PRTR Substances: Japan's Pollutant Release and Transfer Register (PRTR) Law.

Gunma Manufacturing Division (Main Plant, Yajima Plant, Oizumi Plant, and North Plant)

[Unit: kg/year (except for dioxins), dioxins: mg-TEQ/year]

Chemical substance	Amount handled	Atmospheric emissions	Water emissions (Public waters)	Amount moved (Sewage)	Amount moved	Amount consumed	Amount removed through processing	Amount recycled
Water soluble zinc compounds	198,842	0	2,115	0	0	148,430	0	0
Ethylbenzene	424,296	223,355	0	0	0	43,606	35,401	121,933
Xylene	716,336	342,559	0	0	0	184,579	134,142	55,056
1,2,4-Trimethylbenzene	254,114	860	0	0	0	253,255	0	0
1,3,5-Trimethylbenzene	38,443	24,848	0	0	0	2,525	5,006	6,064
Toluene	822,629	299,628	0	0	0	376,796	123,583	22,622
Naphthalene	16,214	9,229	0	0	0	0	6,985	0
Nickel compounds	10,678	0	481	0	8,062	2,136	0	0
Bis (2-ethylhexyl) phthalate	8,705	0	0	0	436	8,269	0	0
Hydrogen fluoride and its water-soluble salts	10,860	0	2,358	0	8,202	300	0	0
N-hexane	126,708	429	0	0	0	126,280	0	0
Benzene	22,649	77	0	0	0	22,572	0	0
Formaldehyde	19,499	9,720	0	0	2,074	0	5,631	2,074
2-ethoxyethyl acetate (also known as ethylene glycol monoethyl ether acetate)	1,056	711	26	0	309	6	4	0
Manganese and compounds	32,834	0	854	0	15,038	16,942	0	0
Dioxins	0	0.0044	0	0	0.051	0	0	0
Cumene	13,869	8,657	0	0	0	0	944	4,268
Methylnaphthalene	16,726	84	0	0	0	16,642	0	0
Total	2,734,457	920,155	5,833	0	34,121	1,202,337	311,696	212,017
			917,584					

Saitama Manufacturing Division

Industrial Products Division had promoted creating an environmental management system (EMS), including the supply chain, and reducing environmentally hazardous substances. Creating an EMS based on certification (ISO14001, Eco Action 21, etc.) from external organizations continues toward a 100% compliant system, with 133 suppliers, including new transaction partners, becoming certified.

Efforts had been made to perform various surveys and reduce environmentally hazardous substances in order to comply with various regulations such as EU directives.

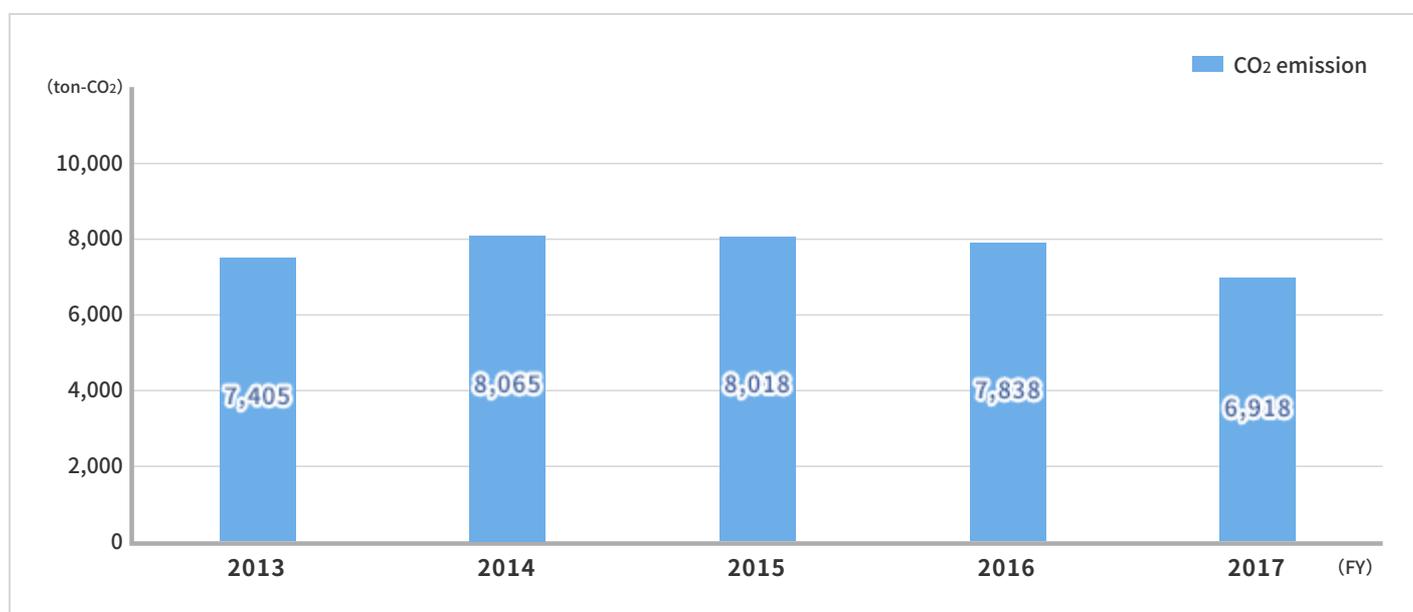
Please note that going forward, Industrial Products Co., Ltd., our affiliate, will continue to promote these efforts.

Initiatives for Prevention of Global Warming

CO₂ emissions in FY2017 was 6,918 tons-CO₂

We will continue efforts in energy conservation and contributions in preventing global warming.

Changes in CO₂ Emissions



Note: After FY2016, the transitional data for CO₂ emissions is presented in the values calculated and reported based on the Act on Promotion of Global Warming Countermeasures.

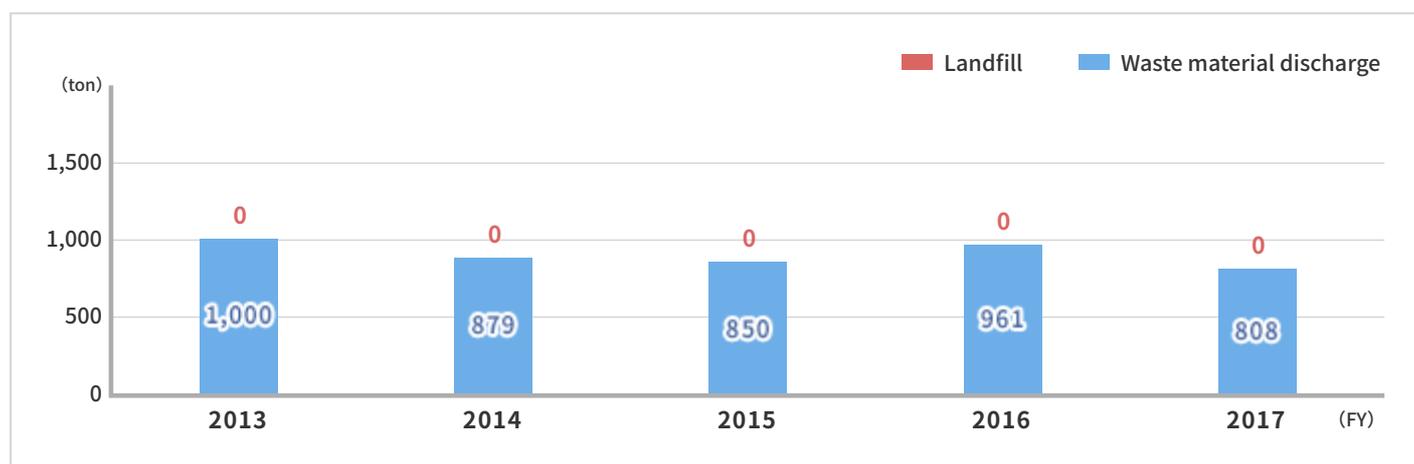
Initiatives for Zero Landfill

The amount of waste emissions in FY2017 was 808 tons.

The amount for landfill was 0 tons, continuing zero emissions from FY2003.

We will continue to improve recycling and reduce waste emissions.

Changes in Waste Material Discharge and Landfill



Note: Subaru definition of zero landfill

Total volume of landfill waste (amount directly sent to landfills + amount sent to landfills after intermediate processing) is less than 0.5% of the total waste volume (industrial waste + industrial waste subject to special control + general waste from business activities) excluding metals.

Initiatives for Pollution Prevention

In order to maintain harmony with the local society and the lush natural environment, we promote initiatives such as managing exhaust gas and effluent and reducing environmental risk as well as activities for preventing occurrences of environmental accidents and pollution. We will continue our efforts for a target of zero that includes exceeding standards.

Environment-related Measurements for FY2017

A voluntary standard for water quality is set and is managed to be 20% higher than the legal standards.

Water quality measurements

All measurement results were compliant with Sewage Law and Kitamoto City sewer regulations.

[Unit: mg/ℓ except for pH]

Item	Regulated value	Voluntary standard	Maximum	Minimum	Average
Concentration of hydrogen ion (pH)	5~9	5.4~8.6	8.1	6.5	7.4
Biochemical oxygen demand (BOD)	600	480	390	68	186
Suspended solids (SS)	600	480	220	47	98
n-hexane extract content (Animal and plant oils and fats content)	30	24	21.0	3.2	8.0

[Effluent is discharged into public sewers.]

Noise measurements

There was one (night) case that exceeded the standards for Noise Regulation Act and Saitama prefecture living environment conservation regulations.

We improved the cause and took countermeasures.

[Unit: dB(A)]

Item	Time of day	Regulated value	Measurement sites	Measured value
Noise	Noon	55	6	48.8~53.5
	Morning and evening	50	6	41.6~49.8
	Night	45	6	41.1~48.8

PRTR Substances Handled and Emitted

PRTR Substances: Japan's Pollutant Release and Transfer Register (PRTR) Law.

[Unit: kg/year]

Chemical substance	Amount handled	Atmospheric emissions	Water emissions (Public waters)	Amount moved (Sewage)	Amount moved	Amount consumed	Amount removed through processing	Amount recycled
Ethylbenzene	737.4	5.4	0	0	0	732.0	0	0
Xylene	3,138.9	25.5	0	0	0	3,113.4	0	0
N, N-dicyclohexylamine	219.7	0	0	0	219.7	219.7	0	0
1,2,4-Trimethylbenzene	1,653.2	5.8	0	0	0	1,647.4	0	0
Toluene	5,374.5	56.1	0	0	0	5,318.4	0	0
N-hexane	2,116.9	7.2	0	0	0	2,109.7	0	0
Benzene	351.7	14.5	0	0	0	337.2	0	0
Total	13,592.3	114.5	0	0	219.7	13,477.8	0	0
		114.5						

Tokyo Office

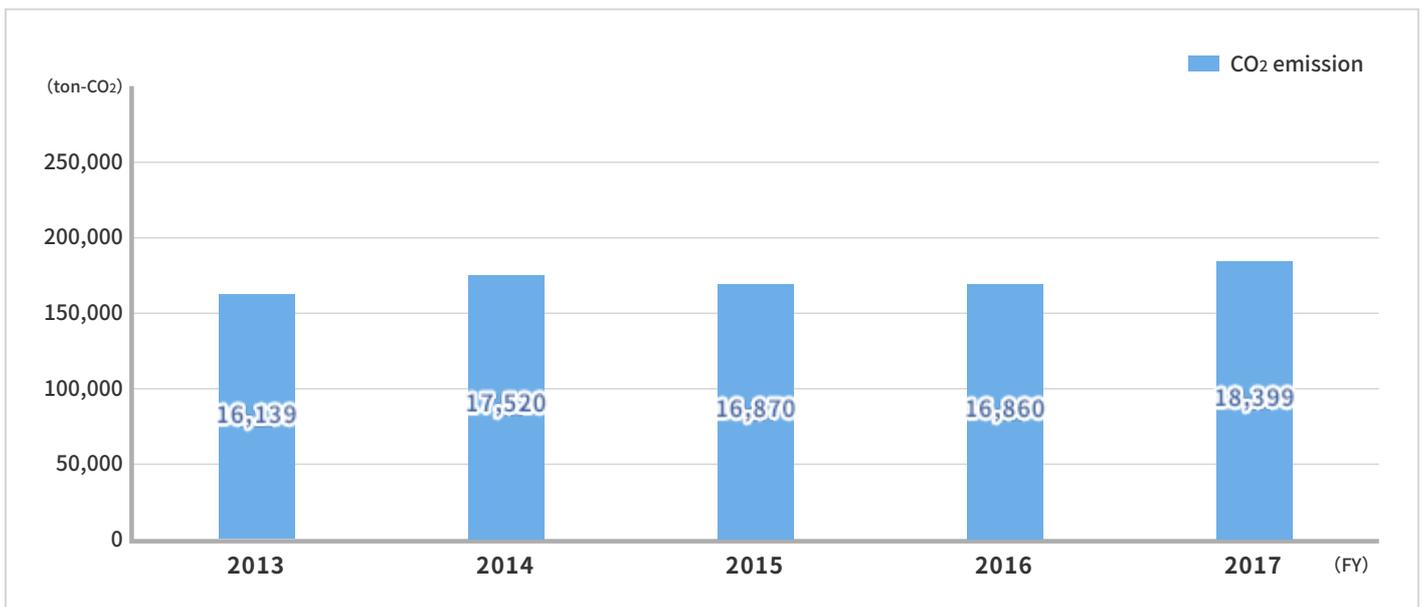
As a manufacturer of transportation equipment including automobiles, we recognize that “the response to global environmental problems is an important issue in management” and continue our environment conservation efforts.

Initiatives for Prevention of Global Warming

CO₂ emissions in FY2017 was 18,399 tons-CO₂.

We will continue efforts in energy conservation and contributions in preventing global warming.

Changes in CO₂ Emissions

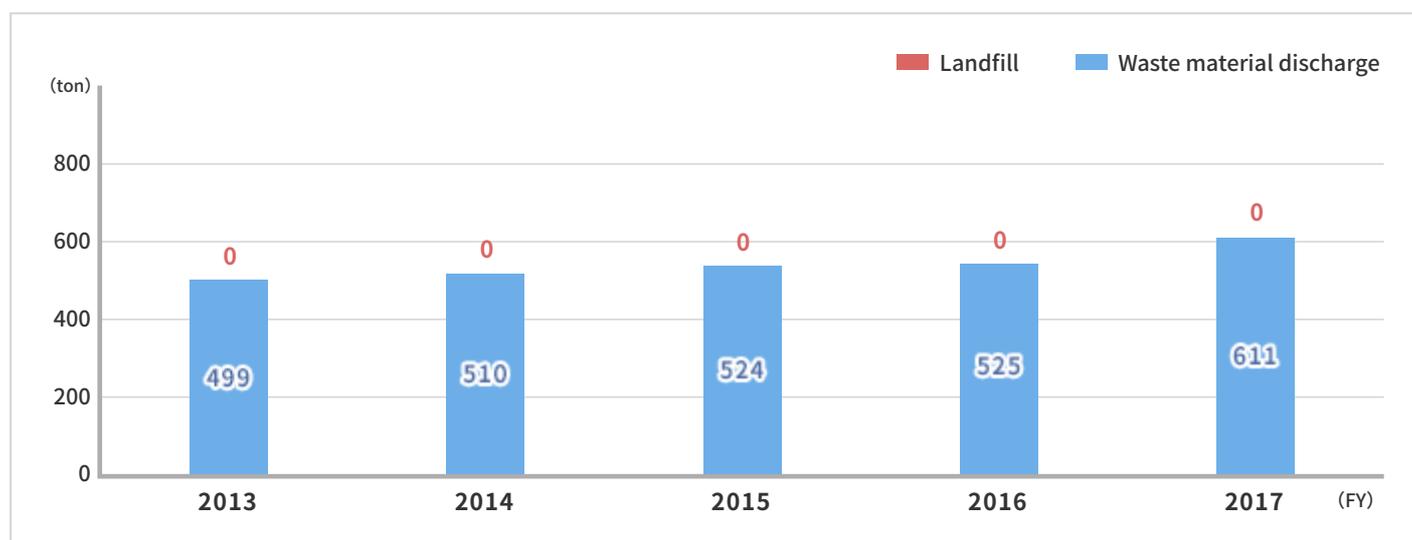


Note: After FY2016, the transitional data for CO₂ emissions is presented in the values calculated and reported based on the Act on Promotion of Global Warming Countermeasures.

Initiatives for Zero Emissions

The amount of waste material discharged in FY2017 was 611 tons.
The amount for landfill was 0 tons, continuing zero emissions from FY2005.
We will continue to improve recycling and reduce waste emissions.

Changes in Waste Material Discharged and Landfill



Note: Subaru definition of zero landfill

Total volume of landfill waste (amount directly sent to landfills + amount sent to landfill after intermediate processing) is less than 0.5% of the total waste volume (industrial waste + industrial waste subject to special control + general waste from business activities) excluding metals

Initiatives for Pollution Prevention

In order to maintain harmony with the local society and the lush natural environment, we promote initiatives such as managing exhaust gas and effluent and reducing environmental risk as well as activities for preventing occurrences of environmental accidents and pollution. We will continue our efforts for a target of zero that includes exceeding standards.

Environment-related Measurements for FY2017

A voluntary standard for water quality is set and managed to be 20% higher than the legal standards.

Water quality measurements

All measurement results were compliant with Water Pollution Prevention Law and Mitaka City sewer regulations.

[Unit: mg/ℓ except for pH]

Item	Regulated value	Voluntary standard	Maximum	Minimum	Average
Concentration of hydrogen ion (pH)	5.7~8.7	5.9~8.4	8.4	7.9	8.3
Biochemical oxygen demand (BOD)	300	240	210	35	125
Suspended solids (SS)	300	240	170	28	100
n-hexane extract content (Mineral oil content)	5	4	Less than 4	Less than 4	Less than 4
n-hexane extract content (Animal and plant oils and fats content)	30	24	20	Less than 4	6
Total phosphorus	16	12.8	9.9	2.9	5.2
Total nitrogen	120	96	60	18	36
Soluble manganese	10	8	0.02	0.01	0.01
Cyanide	1	0.8	Less than 0.01	Less than 0.01	Less than 0.01

[Effluent is discharged into public sewers.]

PRTR Substances Handled and Emitted

PRTR Substances: Japan's Pollutant Release and Transfer Register (PRTR) Law.

[Unit: kg/year]

Chemical substance	Amount handled	Atmospheric emissions	Water emissions (Public waters)	Amount moved (Sewage)	Amount moved	Amount consumed	Amount removed through processing	Amount recycled
Ethylbenzene	18,756	0.21	0	0	0	18,756	0	0
Ethylene glycol	1,456	0.00	0	0	0	1,456	0	0
Xylene	79,349	0.79	0	0	0	79,348	0	0
1,3,5-Trimethylbenzene	14,948	0.03	0	0	0	14,948	0	0
Toluene	247,600	8.44	0	0	0	247,592	0	0
1,2,4-Trimethylbenzene	51,845	0.19	0	0	0	51,845	0	0
Benzene	7,873	0.96	0	0	0	7,872	0	0
N-hexane	28,412	6.20	0	0	0	28,406	0	0
Total	450,240	17	0	0	0	450,223	0	0
		17						

Utsunomiya Manufacturing Division

We will strive to work toward environmental issues such as global warming prevention efforts, in order to fulfill our social responsibilities as corporate citizens developing/manufacturing aircrafts, etc.

Initiatives for Prevention of Global Warming

Again in FY2017, energy conservation activities were promoted by managing energy use at each work site, which led to reduction in total CO₂ emissions.

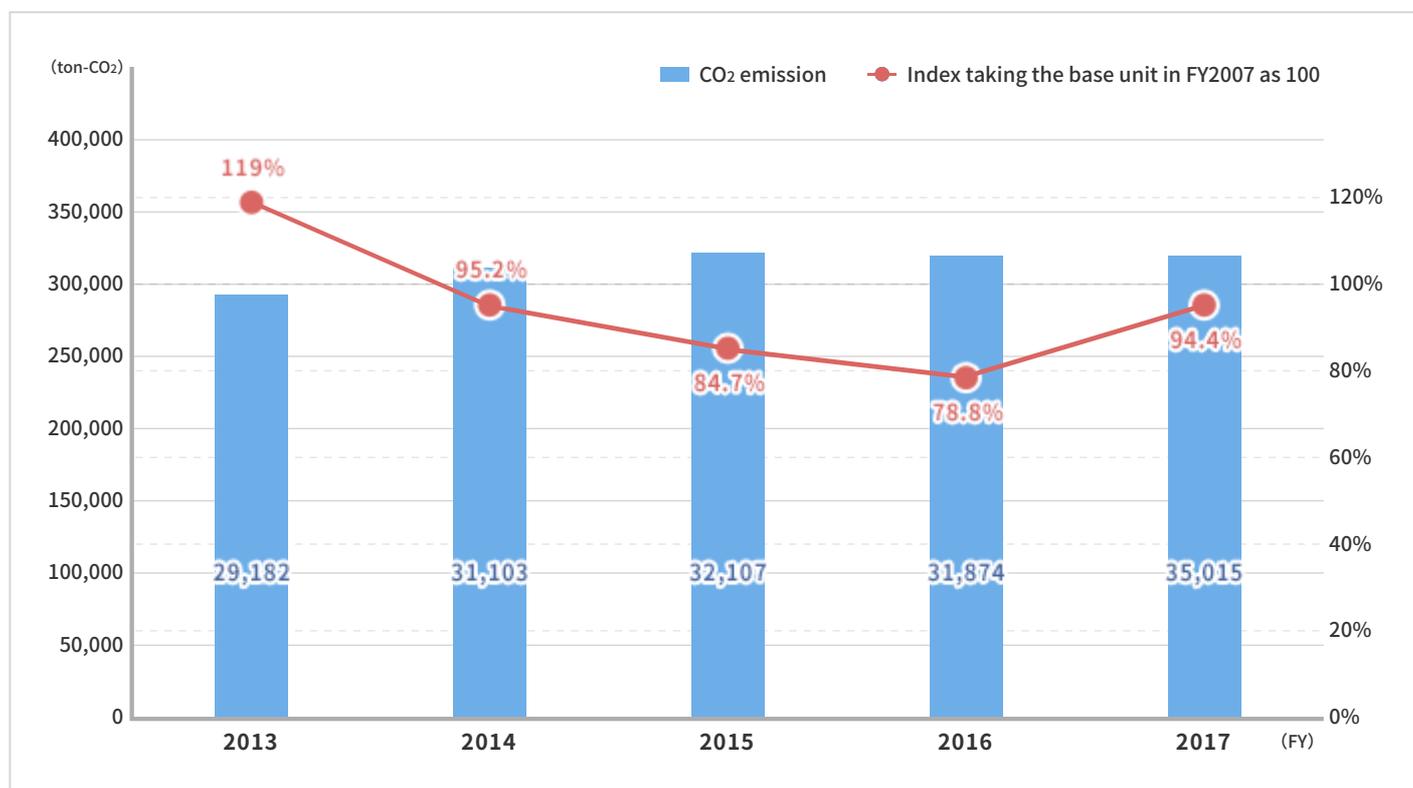
Unnecessary energy use was reduced by implementing an energy conservation patrol at all factories and work sites.

For equipment/facility improvements, a switch to LED lighting and updating to energy saving air conditioners are still ongoing.

The CO₂ total emissions base unit was a 6% reduction from FY2007 levels.

We will continue further efforts in energy conservation and contributions in preventing global warming.

Changes in CO₂ Emissions



Note: After FY2016, the transitional data for CO₂ emissions is presented in the values calculated and reported based on the Act on Promotion of Global Warming Countermeasures.

Note: Definition of the base unit index

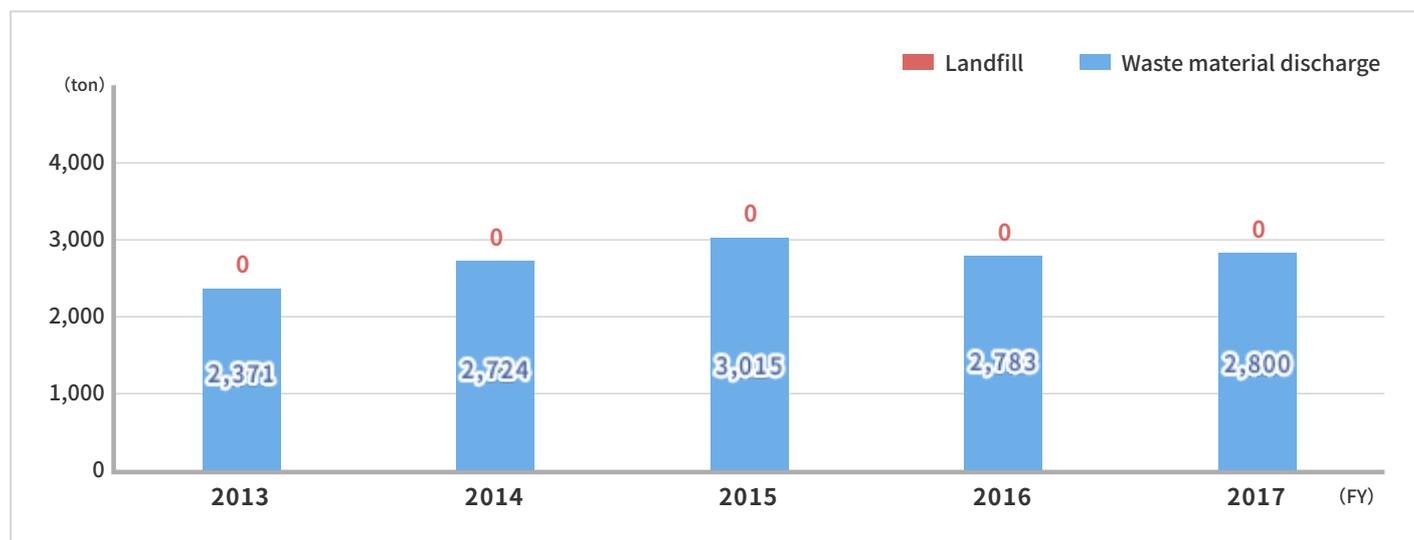
Base Unit: CO₂ emissions per production value (tons-CO₂/hundred million yen)

Base Unit Index: Index taking the base unit in FY2007 as 100

Initiatives for Zero Emissions

The amount of waste material discharge in FY2017 was 2,800 tons.
The amount for landfill was 0 tons, continuing zero emissions from FY2003.
We will continue to improve recycling and strive to reduce waste emissions.

Changes in Waste Material Discharge and Amount for Landfill



Note: Subaru definition of zero landfill

Total volume of landfill waste (amount directly sent to landfills + amount sent to landfills after intermediate processing) is less than 0.5% of the total waste volume (industrial waste + industrial waste subject to special control + general waste from business activities) excluding metals

Initiatives for Pollution Prevention

In order to maintain harmony with the local society and the lush natural environment, we promote initiatives such as managing exhaust gas and effluent and reducing environmental risk as well as activities for preventing occurrences of environmental accidents and pollution. Ground operation of helicopters at the South Plant have been moved to the apron as far away as possible from the site boundaries in consideration of reducing noise to the neighboring houses.

We will make efforts to reach our voluntary standards and to keep environmental accidents and complaints on and off-site to zero.

Environment-related Measurements for FY2017

All measurement results were compliant with Water Pollution Prevention Law, Utsunomiya City sewer regulations that are applied to each area and Handa environmental protection agreements, and have cleared our voluntary standards* that are 20% higher.

*We have set our voluntary standards for all measurements (air, water quality, noise and vibrations) to be 20% higher than the legal standards.

Water Quality Measurements

All measurement results were compliant with Water Pollution Prevention Law and Sewage Law, and have met our voluntary standards that are 20% higher.

Main Plant

[Effluent discharged into public sewers]

[Unit: mg/ℓ except for pH]

Item	Regulated value	Voluntary standard	Maximum	Minimum	Average
Concentration of hydrogen ion (pH)	5~9	5.4~8.6	8.0	5.6	7.5
Suspended solids (SS)	600	480	475	Less than 1.0	84.0
Biochemical oxygen demand (BOD)	600	480	474	Less than 0.5	120.0
n-hexane extract content (Mineral oil content)	5	4	Less than 1.0	Less than 1.0	Less than 1.0
n-hexane extract content (Animal and plant oils and fats content)	30	24	21.0	Less than 1.0	8.1
Fluorine compounds	8	6.4	1.6	Less than 0.2	0.2
Cyanide	1	0.8	Less than 0.1	Less than 0.1	Less than 0.1
Cadmium	0.1	0.08	0.01	Less than 0.003	0.004
Total chromium	0.1	0.08	0.01	Less than 0.03	0.004
Hexavalent chromium	0.1	0.08	0.08	Less than 0.02	0.02

[Effluent discharged into public rivers]

[Unit: mg/ℓ except for pH]

Item	Regulated value	Voluntary standard	Maximum	Minimum	Average
Concentration of hydrogen ion (pH)	5.8~8.6	6.0~8.3	8.1	6.8	7.5
Suspended solids (SS)	50	40	Less than 1.0	Less than 1.0	Less than 1.0
Biochemical oxygen demand (BOD)	30	24	7.8	Less than 0.5	1.3
n-hexane extract content (Mineral oil content)	5	4	Less than 1.0	Less than 1.0	Less than 1.0
n-hexane extract content (Animal and plant oils and fats content)	30	24	Less than 1.0	Less than 1.0	Less than 1.0
Cyanide	1	0.8	Less than 0.1	Less than 0.1	Less than 0.1
Cadmium	0.1	0.08	Less than 0.005	Less than 0.005	Less than 0.005
Total chromium	2	1.6	Less than 0.01	Less than 0.01	Less than 0.01
Hexavalent chromium	0.5	0.4	Less than 0.02	Less than 0.02	Less than 0.02

South Plant

[Effluent discharged into public sewers]

[Unit: mg/ℓ except for pH]

Item	Regulated value	Voluntary standard	Maximum	Minimum	Average
Concentration of hydrogen ion (pH)	5~9	5.4~8.6	8.5	6.8	7.5
Suspended solids (SS)	600	480	152	3.2	50.0
Biochemical oxygen demand (BOD)	600	480	309	3.5	89.0
n-hexane extract content (Mineral oil content)	5	4	Less than 1.0	Less than 1.0	Less than 1.0
n-hexane extract content (Animal and plant oils and fats content)	30	24	8.6	Less than 1.0	3.7
Cyanide	1	0.8	Less than 0.1	Less than 0.1	Less than 0.1
Cadmium	0.1	0.08	Less than 0.005	Less than 0.005	Less than 0.005
Total chromium	2	1.6	Less than 0.01	Less than 0.01	Less than 0.01
Hexavalent chromium	0.1	0.08	Less than 0.02	Less than 0.02	Less than 0.02

[Effluent discharged into public rivers]

[Unit: mg/ℓ except for pH]

Item	Regulated value	Voluntary standard	Maximum	Minimum	Average
Concentration of hydrogen ion (pH)	5.8~8.6	6.0~8.3	7.7	6.8	7.3
Suspended solids (SS)	50	40	1.6	Less than 1.0	1.3
Biochemical oxygen demand (BOD)	30	24	24.3	Less than 0.5	2.1
n-hexane extract content (Animal and plant oils and fats content)	5	4	Less than 1.0	Less than 1.0	Less than 1.0
Cyanide	1	0.8	Less than 0.1	Less than 0.1	Less than 0.1
Cadmium	0.1	0.08	Less than 0.005	Less than 0.005	Less than 0.005
Total chromium	2	1.6	Less than 0.01	Less than 0.01	Less than 0.01
Hexavalent chromium	0.5	0.4	Less than 0.02	Less than 0.02	Less than 0.02

2nd South Plant [Effluent discharged into public sewers]

[Unit: mg/ℓ except for pH]

Item	Regulated value	Voluntary standard	Maximum	Minimum	Average
Concentration of hydrogen ion (pH)	5~9	5.4~8.6	8	6.8	7.4
Suspended solids (SS)	600	480	111	Less than 1.0	27.9
Biochemical oxygen demand (BOD)	600	480	127	1.4	32.1
n-hexane extract content (Mineral oil content)	5	4	Less than 1.0	Less than 1.0	Less than 1.0
n-hexane extract content (Animal and plant oils and fats content)	30	24	9.9	Less than 1.0	2.1
Fluorine compounds	8	6.4	3.3	Less than 0.2	0.6
Cyanide	1	0.8	Less than 0.1	Less than 0.1	Less than 0.1
Cadmium	0.1	0.08	Less than 0.005	Less than 0.005	Less than 0.005
Total chromium	2	1.6	0.17	Less than 0.01	0.06
Hexavalent chromium	0.1	0.08	Less than 0.02	Less than 0.02	Less than 0.02

[Effluent discharged into public rivers]

[Unit: mg/ℓ except for pH]

Item	Regulated value	Voluntary standard	Maximum	Minimum	Average
Concentration of hydrogen ion (pH)	5.8~8.6	6.0~8.3	7.7	6.8	7.2
Suspended solids (SS)	50	40	1.6	Less than 1.0	1.3
Biochemical oxygen demand (BOD)	30	24	4.2	0.5	1.6
n-hexane extract content (Mineral oil content)	5	4	Less than 1.0	Less than 1.0	Less than 1.0
Cyanide	1	0.8	Less than 0.1	Less than 0.1	Less than 0.1
Cadmium	0.1	0.08	Less than 0.005	Less than 0.005	Less than 0.005
Total chromium	2	1.6	Less than 0.01	Less than 0.01	Less than 0.01
Hexavalent chromium	0.5	0.4	Less than 0.02	Less than 0.02	Less than 0.02

Handa Plant

[Unit: mg/ℓ except for pH]

Item	Regulated value	Voluntary standard	Maximum	Minimum	Average
Concentration of hydrogen ion (pH)	6~8	6.2~7.8	8.0	6.5	7.4
Suspended solids (SS)	25	20	10.0	Less than 1.0	3.1
Biochemical oxygen demand (BOD)	25	20	9.3	0.7	2.5
Chemical oxygen demand (COD)	25	20	17.0	0.8	6.1
n-hexane extract content (Mineral oil content)	5	4	Less than 0.5	Less than 0.5	Less than 0.5
Cyanide	1	0.8	Less than 0.1	Less than 0.1	Less than 0.1
Cadmium	0.1	0.08	Less than 0.005	Less than 0.005	Less than 0.005
Total chromium	2	1.6	Less than 0.04	Less than 0.04	Less than 0.04
Hexavalent chromium	0.5	0.4	Less than 0.04	Less than 0.04	Less than 0.04

Handa West Plant

[Unit: mg/ℓ except for pH]

Item	Regulated value	Voluntary standard	Maximum	Minimum	Average
Concentration of hydrogen ion (pH)	6~8	6.2~7.8	7.8	7.2	7.6
Suspended solids (SS)	15	12	8.0	2.0	4.5
Biochemical oxygen demand (BOD)	15	12	12.0	2.4	6.3
Chemical oxygen demand (COD)	15	12	11.0	3.4	8.3
n-hexane extract content (Mineral oil content)	2	1.6	Less than 0.5	Less than 0.5	Less than 0.5
Cyanide	0.5	0.4	Less than 0.1	Less than 0.1	Less than 0.1
Cadmium	0.05	0.04	Less than 0.005	Less than 0.005	Less than 0.005
Total chromium	0.2	0.16	Less than 0.04	Less than 0.04	Less than 0.04
Hexavalent chromium	0.3	0.24	Less than 0.04	Less than 0.04	Less than 0.04

Air measurements

All measurement results were compliant with Air Pollution Control Act and have met our voluntary standards that are 20% higher.

Main Plant

[Unit: ppm for NOx, and g/Nm³ for particulate matter]

Equipment/facility	Substance	Regulated value	Voluntary standard	Maximum	Average
Cogeneration	NOx	600	480	161	121
Drying furnace	NOx	230	184	Less than 100	Less than 100
	Particulate matter	0.2	0.16	Less than 0.001	Less than 0.001

Among the 9 regulation specified equipment/facilities, cogeneration and drying furnace data are shown above. Measured values for the other specified equipment/facilities not presented here have also met the voluntary standards.

South Plant, 2nd South Plant

No equipment/facility to be regulated.

Handa Plant

Regulated by Air Pollution Control Act.

[Unit: ppm for NOx, and g/Nm³ for particulate matter]

Equipment/facility	Substance	Regulated value	Voluntary standard	Maximum	Average
2 ton boiler	SOx	1.5	1.2	0.007	Less than 0.002
	NOx	180	144	35	22
	Particulate matter	0.1	0.08	Less than 0.002	Less than 0.002

Among the 6 regulation specified equipment/facility, boiler data is shown above. Measured values for the other specified facilities not presented here have also met the voluntary standards.

Handa West Plant

Regulated by the Air Pollution Control Act.

[Unit: ppm for NOx, and g/Nm³ for particulate matter]

Equipment/facility	Substance	Regulated value	Voluntary standard	Maximum	Average
2 ton boiler	SOx	1.5	1.2	Less than 0.002	Less than 0.002
	NOx	180	144	35	22
	Particulate matter	0.1	0.08	Less than 0.002	Less than 0.002

Among the 5 regulation specified equipment/facility, boiler data is shown above. Measured values for the other specified facilities not presented here have also met the voluntary standards.

Noise and vibration measurements

All measurement results are compliant with Noise Regulation Act and Vibration Regulation Act and have met our voluntary standards.

Noise: Noise Regulation Act

[Unit: dB(A)]

Measurement Location	Regulated value (Night)	Voluntary standard	Measured value	Maximum
Main Plant	60	58	8	52
South Plant	50	48	3	45
2nd South Plant	50	48	3	47
Handa Plant	65	63	3	63
Handa West Plant	65	63	6	63

Vibration: Vibration Regulation Act

[Unit: dB(A)]

Measurement Location	Regulated value (Night)	Voluntary standard	Measured value	Maximum
Main Plant	65	63	8	47
South Plant	60	58	2	Less than 30
2nd South Plant	60	58	3	Less than 30
Handa Plant	70	68	3	40
Handa West Plant	70	68	5	362

PRTR Substances Handled and Emitted

PRTR Substances: Japan's Pollutant Release and Transfer Register (PRTR) Law.

Aerospace Company

[Unit: kg/year; for dioxins only: mg-TEQ/year]

Chemical substance	Amount handled	Atmospheric emissions	Water emissions (Public waters)	Amount moved (Sewage)	Amount moved	Amount consumed	Amount removed through processing	Amount recycled
Bisphenol-A	1,674	0	0	0	1,541	133	0	0
Xylene	10,444	6,211	0	0	2,022	2,211	0	0
Hexavalent chromium compounds	2,618	0	0	0	1,882	282	454	0
Toluene	25,197	19,027	0	0	6,122	48	0	0
Manganese and compounds	1,361	0	0	0	551	810	0	0
1,3-dioxolane	9,242	7,120	0	0	2,122	0	0	0
Total	50,536	32,358	0	0	14,240	3,484	454	0

Signing of the Environmental Protection Agreement with Handa City

We previously had a pollution prevention agreement focusing on conventional pollution prevention with Handa City. On February 22, 2011, based on a request by the city, we signed an environmental protection agreement that expanded our activities to focus further on the environment such as energy conservation and waste.