SUBARU Environmental Policies

< 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.

[Established in April 1998, revised in April 2017]

TOPIC Aiming for reduction in CO_2 Emissions

Environmental Management

Environmentally Friendly Automobiles

Climate Change

Resource Recycling

Water Resources

Biodiversity

Preventing Pollution

Environmentally Conscious Procurement

Environmental Communication

Environmental Data

[TOPIC] Aiming for significant reduction in CO_2 Emissions

Subaru aims to significantly reduce the Subaru Group's direct CO_2 emissions.

The Subaru has set a new target of reducing the Subaru Group's direct CO_2 emissions (Scope 1 and 2) to 30% below FYE2017 levels (on a total emissions volume basis) by FYE2031 and has begun formulating the Subaru Environmental Action Plan.
Ahead of the plan's implementation, we embarked on a precursor initiative in April 2018 that aims to reduce CO_2 emissions by approximately 5,400 t-CO_2/year. Under the Tochigi Furusato Denki program, Japan's first program for local production and local consumption of electricity without CO_2 emissions, approximately 11,500 MWh/year will be supplied to two plants at our Aerospace Company's Utsunomiya Plant.
We also plan to install Japan's largest-scale captive-consumption solar power system* (approximately 5,000 MWh/year) at the company's Gunma Oizumi Plant. Through this initiative, the new facility is expected to bring a reduction of approximately 2,370 tons of CO_2 per year, equivalent to around 2% of total annual carbon dioxide emissions at the Oizumi Plant by March 2020.

* Based on a study by Japan Facility Solutions, Inc., which will install and operate the facilities.

Established for "Tochigi Furusato Denki" program

Established for local electric power generated at hydroelectric power plants owned by Tochigi Prefecture is supplied to plants. The part of the power charges paid by Subaru being used for environmental protection initiatives in Tochigi prefecture. (photograph: Subaru presented with a certificate at the Tochigi prefectural government office)

Plan to install Japan's largest solar captive-consumption solar power system

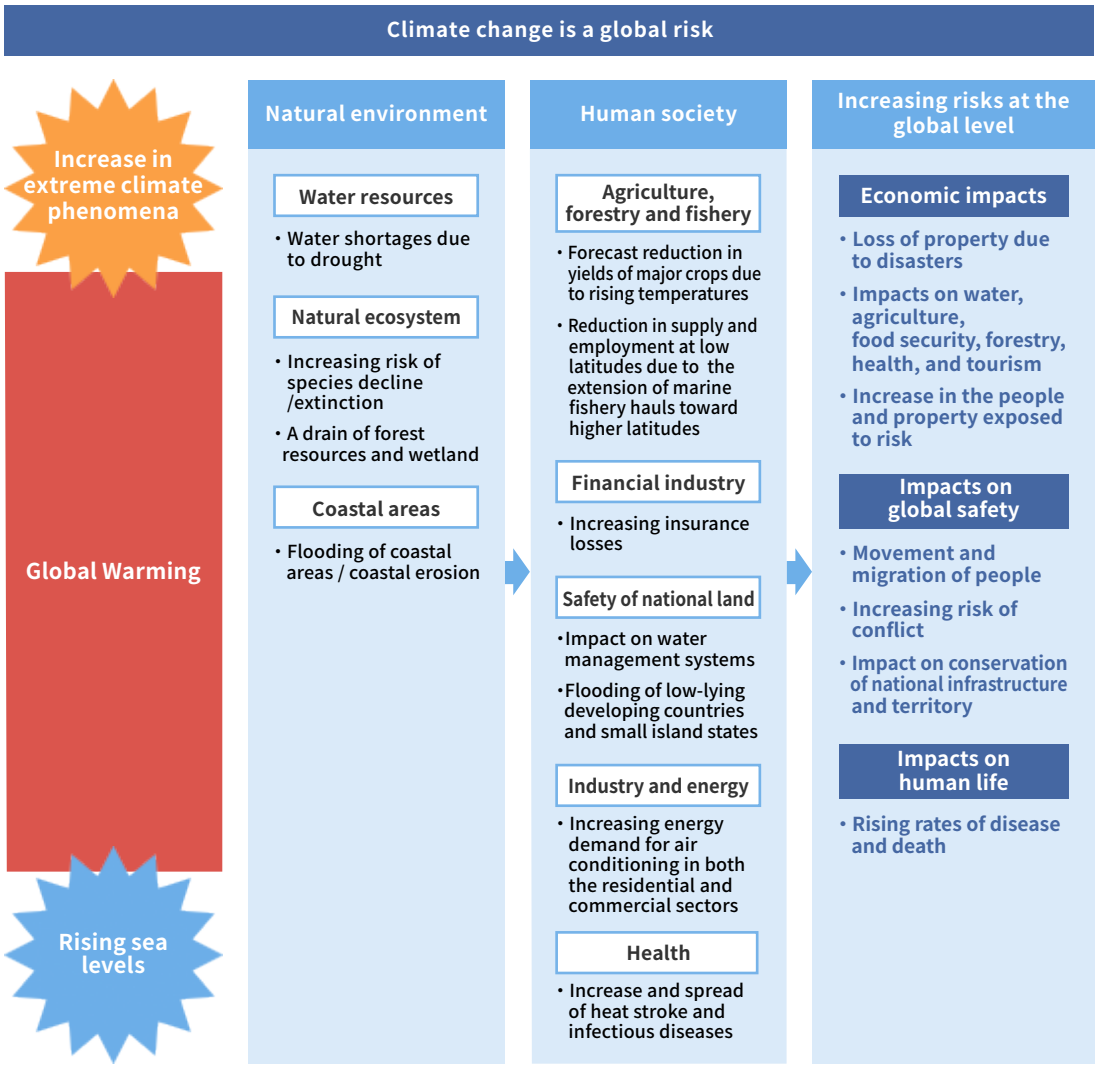
We aim to make our Gunma Oizumi Plant cleaner by introducing solar energy (Renderinge of the completed solar power system at the Gunma Oizumi Plant)

1. Climate change and their implications for society and the Subaru Group

It is difficult to fully explain how the impact that climate change (global warming) affects our lives. However, the IPCC*1 Fifth Assessment Report states that (1) global warming is the dominant cause of anthropogenic CO_2 emissions; and (2) the impact on our lives should be measured if the temperatures rise is not kept below 2 degrees Celsius.

*1 IPCC: Intergovernmental Panel on Climate Change

The Range of Impacts of Climate Change



Compiled on the basis of IPCC reports (SREX and ARS WG2 SPM) and translated.

Source: Trends in Global Warming and Other Recent Developments (Ministry of the Environment) (Japanese version only)

As an example of the risks of climate change, the report states that if effective measures to combat climate change are not taken, floods and/or droughts of a kind seen only once in 100 years in the 20th century will occur worldwide by the 2080s. Subaru's key markets in the U.S.A., Japan, and Oceania will not escape these impacts.

The report also points out that the global mean sea level could rise by as much as 82 cm by the end of the 21st century, which would impact major coastal cities worldwide and has the potential to affect the Subaru Group's business in some form or another.

2. Subaru will promote a medium- to long-term perspective in promoting environmental Initiatives

In light of this situation, we have been discussing our future approaches to environmental initiatives on our Environmental Committee (Chairman: Director of the Board and Corporate Executive Vice President). In the process of these deliberations, the committee discussed setting an overarching target by backcasting from the future environment facing the Subaru Group, as well as examining approaches to implementing the action plan with a view to achieving that target.

As a result, the committee decided to start by setting an overarching target of reducing the Subaru Group's direct CO_2 emissions (Scope 1 and 2) from plants, offices, and the like, taking into account the fact that Subaru Environmental Policies position climate change as the most crucial issue to be tackled. The new target is based on the IPCC's 2°C scenario*1 and encompasses the ideas of Japan's NDC*2 and SBT*3. We will assess and revise it as required, taking into account changes in society's expectations, the technical environment, and the Subaru Group's own circumstances.

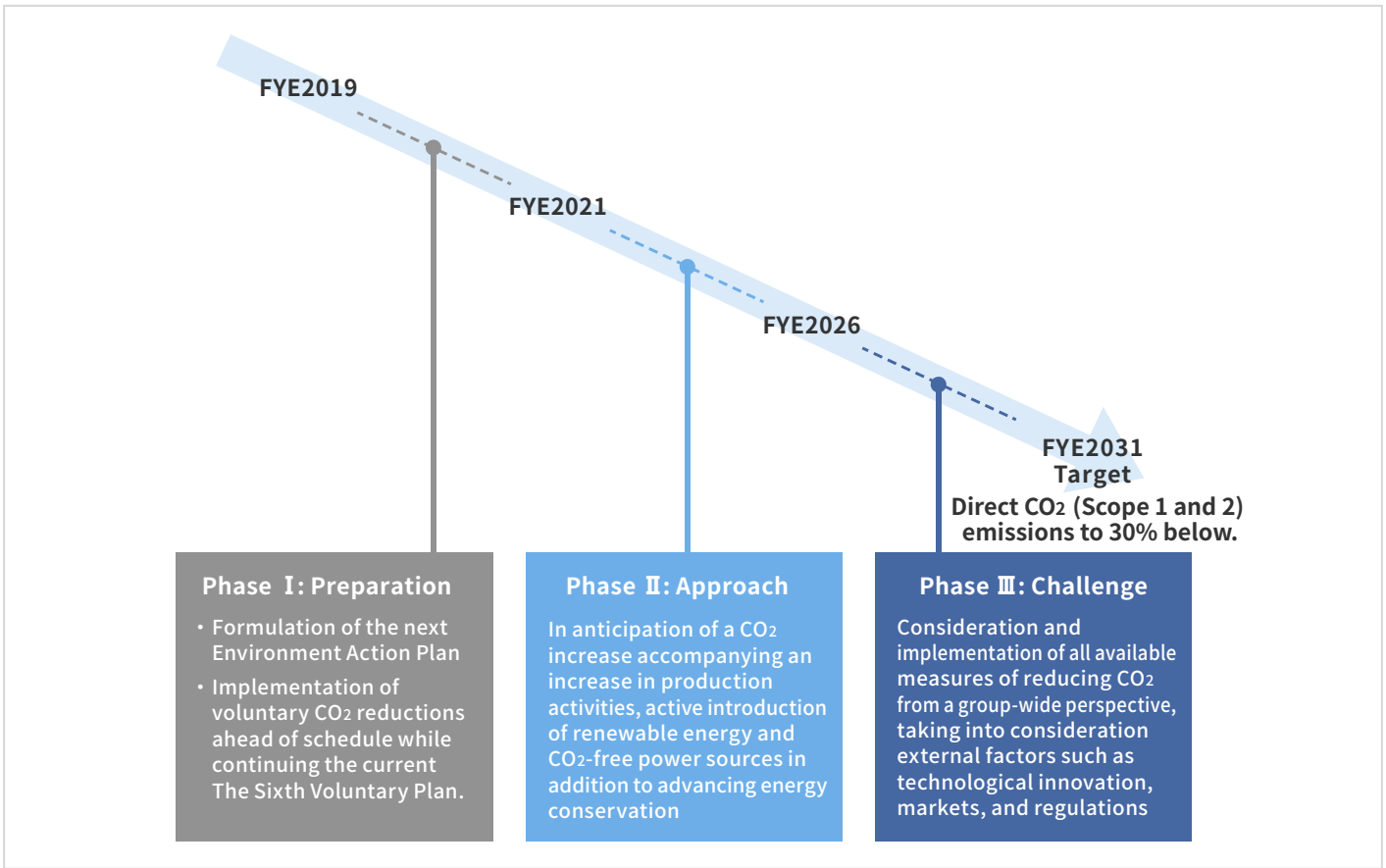
As it appears difficult to achieve this target under our current medium- to long-term action plan, the Subaru Voluntary Plan for the Environment, we began formulating the Subaru Action Plan for the Environment in FYE2019 to serve as a new action plan to encourage the whole of Subaru to do its utmost to contribute to this goal. While taking maximum advantage of the knowledge and know-how gained in the process of this initiative, the Subaru Group will move forward with deliberations concerning measures to reduce indirect CO_2 emissions and address other environmental issues.

*1 2°C scenario: A scenario in which CO_2 emissions are reduced by approximately 40–70% worldwide by 2050 to keep the rise in global temperatures since the Industrial Revolution below 2°C

*2 NDC: Nationally Determined Contribution. National targets submitted to the United Nations by each country that has ratified the Paris Agreement

*3 SBT: Science Based Targets. A process formulated by the United Nations and other bodies, used to determine the CO_2 reduction rates expected of companies and other bodies every five years from 2025

Subaru Action Plan for the Environment: Road Map



3. The Subaru Group will actively promote initiatives to tackle climate change

As the Subaru Group believes tackling climate change to be an issue of the utmost urgency, we are not only redoubling our efforts to conserve energy, but also introducing natural forms of energy that minimize CO_2 emissions.

For example, we have adopted “Tochigi Furusato Denki” program at the Aerospace Company’s Utsunomiya Plant. Under this initiative, which is Japan’s first program for locally produced and consumed CO_2-free electricity, power generated by hydroelectric plants belonging to the local government is supplied to the participating plants. The part of the electricity charges paid by Subaru will be used for environmental protection initiatives in Tochigi Prefecture.

We also plan to expand the use of natural forms of energy by installing Japan’s largest scale captive-consumption solar power system at the company’s Gunma Oizumi Plant (due to be completed before the close of FYE2020).

The Subaru Group will promote activities of this nature to strike a balance between the creation of low-carbon society in the areas and communities and the achievement of business sustainability.

“Tochigi Furusato Denki” program logo

Subaru Voluntary Plan for the Environment

The 6th Voluntary Plan for the Environment sets 2020 as its target year and is made to link with fiscal year plan of the Prominence 2020, Subaru's Mid-term Management Plan. The Voluntary Plan's activity content is deepened so that it links with global approach to the environment.

The 6th Voluntary Plan for the Environment (FYE2018-FYE2021)

The 6th Voluntary Plan for the Environment (FYE2018 to FYE2021)

【1】Global Warming Measures

Field	Item			Up to FYE2021 Target/Initiative	FYE2018 Target	FYE2018 Results	FYE2019 Target/Initiative
Products	Fuel economy improvement	Automobiles	◆ Continue to improve fuel economy through full model changes and annual improvements.	◇ Innovate to an environmental engine, and realize category top level fuel efficiency. ◇ Introduce horizontally opposed direct-injection downsized turbo engines to the market.	◇ Install the environmental engine and CVT on the next-term XV and expand globally. ◇ Advanced development ofthe horizontally opposed direct injection downsized turbo engine (under review for mass production).	・Installed a new direct injection engine and improved CVT on the new XV, and expanded globally. ・Completed the final phase of the advanced development of the horizontally opposed direct injection downsized turbo engine for mass production.	・Adopt newly developed power unit "e-BOXER" that combines the horizontally opposed engine and electrification technology to new Forester. Also adopt the e-BOXER to new SUBARU XV. ・Move to mass production phase of the horizontally opposed direct injection downsized turbo engine.
	Clean energy use		◆ Promote introduction of electric vehicles.	◇ Introduce plug-in hybrid cars into the main markets in FYE2019. ◇ Promote research for introducing electric vehicles into the market.	◇ Completed development of a plug-in hybrid car for North America and transition to a certification and mass production phase. ◇ Determine targetfunctions for electric vehicles and the means to achieve them, and begin manufacture of vehicle for checking functions.	・Completed development of a plug-in hybrid car. ・Manufactured EV for checking functions and confirmed the system's basic performance.	・Starting producton of plug-in hybrid vehicle based on Crosstrek (in Japan, SUBARU XV) and introduce to the US market by the end of 2018. ・Based on the last fiscal year's achievement, aim for electrification system with improved electric-
	Road traffic improvement - IT technology (Automate driving technology and preventive safety technology)		◆ Make efforts to expand deployment of advanced driver assist system EyeSight and development of automated driving technology, further advance technological development to prevent accidents before they happen, and contribute to CO_2 reduction through preventing traffic congestion due to accidents and improving traffic flow with driving support technology.	◇ 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 assistfeature that keeps a car in the same lane on expressways to the market in FYE2018. ◇ Introduce the highway automatic driving feature including lane changes to the market in FYE2021.	◇ 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.	・Accelerated the assessment and SIP/ASV activity plans, and continued to promote technological development of advanced systems. ・Further expanted the models with EyeSight, and promoted the technological development focusing on high level driving assist systems.	・Promote development that aims to eliminate traffic accident deaths. Assist driving operations in all speed ranges on highways. ・Continue to promote development of advanced driving assist system technology, focusing mainly on expanded deployment of EyeSight Driving Assist and popularization and dissemination of accident damage reduction technology using assessment. ・Continue to promote activities based on promotion plans of industry/government/academia such as SIP/ASV.
Production	Production facilities		◆ Reduce CO_2 emissions per unit of production at domestic production facilities.	◇ Reduce CO_2 emissions per unit of production by 14% from FYE2007 level by FYE2021 at domestic production facilities.	◇ Reduce CO_2 emissions per unit of production at domestic production facilities by 11% from FYE2007 level.	・Reduced CO_2 emissions per unit of production at domestic production facilities by 42.2% from FYE2007 level.	・Reduce CO_2 Emission per unit of production at domestic production facilities by 12% from FYE2007 level.
			◆ Promote activities to reduce CO_2 emissions at overseas production facilities*.	◇ For overseas production facilities, set medium term CO_2 emissions reduction targets and continue to promote activities to attain them.	◇ Emission target is set to 189,696 t-CO_2	・Due to production exceeding the original plan and development of new model, emission was 192,575t-CO_2	・Improve production efficiency and continue to reduce CO_2 emissions.
Distribution/Sales	Distribution		◆ Promote CO_2 emissions reduction activities synchronized with the Energy Saving Law.	◇ Use FYE2007 per unit of CO_2 emission as a benchmark, and reduce emission by 1% every year.	◇ With FYE2007 per unit of CO_2 emission as BM, continue to reduce emission by 1% every fiscal year. 【FYE2018 Target: 30.63kg/vehicle】	・Achieved the target of 1% reduction every year. [Achieved in FYE2018 :28.12kg/vehicle]	・Reivew transport efficiency and routes, and aim for 1% reduction every year. [Target for FYE2019: 30.32kg/vehicle]

* SIA: Subaru of Indiana Automotive,Inc.

The 6th Voluntary Plan for the Environment (FYE2018 to FYE2021)

【2】Resource Recycling

Field	Item		Up to FYE2021 Target/Initiative	FYE2018 Target	FYE2018 Results	FYE2019 Target/Initiative
Products	Recyclability improvement	◆ 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 aim for actual recycling rate of 95% by FYE2021.	◇ Maintain an actual recycling rate of 95% or better. ◇ Continue to promote designs that consider recycling.	・Achieved the actual recycling rate of 95% or better.	・Continue designs that consider recycling and aim to achieve the actual recycling rate target.
		◆ Make efforts for CFRP recycling technology.	◇ Promote technological development regarding easy dismantling of CFRP products.	◇ Promote technological development considering easy dismantling.	・Promoted technological development incorporating designs that consider recycling.	・Continue to promote technological development considering easy dismantling
	Promotion of life-cycle assessment	◆ Promote disclosure of life-cycle assessment (LCA) data.	◇ Promote release of LCA data from full model change vehicles.	◇ Promptly release of LCA data timed to model changes, and also enhance its contents.	・No targeted vehicle this term.	・Plan to release new Forester and hybrid vehicles.
Production	Domestic dealerships and dismantlers	◆ Establish processing schemes for difficult material to process, etc.	◇ Improve recycling and proper treatment.	◇ Promote review and verification for treatment and recycling.	・Demonstrated treatment and recycling and established higher level treatment scheme.	・Promote high-level treatment and recycling and demonstration experiment.
	Production facilities	◆ Continue the appropriate disposal of waste and reducing waste generation.	◇ Appropriately manage waste, and continue the waste reduction maintenance/management by improving yield and packaging.	◇ Continue improvement of yield, understand the outlook for volume produced, and manage/continue waste generation reduction.	・Waste generation was reduced to 97% of the target value of this fiscal year.	・Continue to reduce waste generation by thorough sorting and by charging cost.
		◆ 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.	◇ Continue zero emission at both domestic and overseas production facilities.	・Achieved zero emission at both domestic and overseas production facilities.	・Continue zero emission at both domestic and overseas production facilities.
		◆ Manage volume of water used at both domestic and overseas production facilities.	◇ Manage volume of water used at production facilities across Group companies in and outside Japan.	◇ Manage volume of water used at production facilities across Group companies in and outside Japan.	・Properly managed volume of water used at production facilities across Group companies in and outside Japan.	・Properly manage volume of water use at production facilities in and outside Japan.

The 6th Voluntary Plan for the Environment (FYE2018 to FYE2021)

【3】Pollution Prevention and Reduction of Hazardous Chemical Use

Field	Item		Up to FYE2021 Target/Initiative	FYE2018 Target	FYE2018 Results	FYE2019 Target/Initiative
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 developmentto control exhaust gas emissions in the real world. ◇ Mass production developmentin line with WLTP-based low emission regulations.	・Completed mass production development in line with domestic WLTP-based low emission regulations as planned.	・To conrol emission of particulates, continue to expand development of gasoline particulate filters (GPF) designed for destinations.
	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.	・Expanded the function of IMDS in-house system, and implemented an all part survey system. ・Comleted switching to substances with lower environmental impact.	・Strengthen management of chemical substances using IMDS. ・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^2) at production lines.	◇ Reduce per unit of VOC emissions.	◇ Reduce per unit of VOC emissions.	・Based on the man-hour increase deriving from color changes in just in time production system at paint process, have set the FYE target as 50.2g/m². Reduction efforts such as thinner recovery rate increase led to target achievement.	・Set the per unit of emission target lower than that of FYE2018, but we will contine to make efforts to reduce environmental burden.
		◆ 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.	・Continued aggregation management of chemical substances regulated by the PRTR law.	・Continue aggregation management of chemical substances regulated by the PRTR law.
		◆ Promote activities targeting the elimination of occurrences ofhazardous substances leaking off site, complaints, and exceeding legal standards.	◇ Promote activities targeting the zero occurrence of environmental accidents, complaints, and cases 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.	・Exceeding legal limit: 1case; complaints:8 cases; on-site leakage: 4 cases. All proplerly handled.	・Continue efforts to reduce environmental risk (enlightenment, education, and coexistence with community).

The 6th Voluntary Plan for the Environment (FYE2018 to FYE2021)

【4】Environmental Management

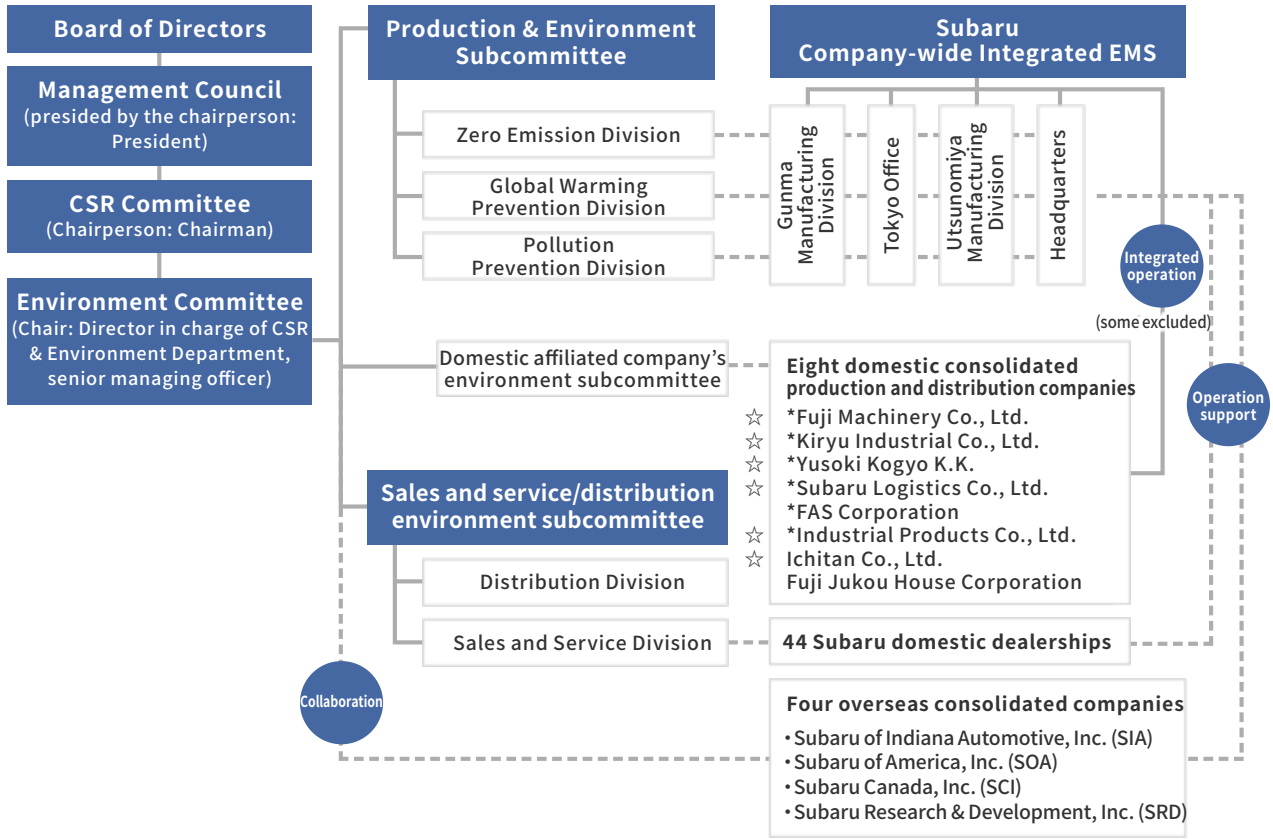
Field	Item		Up to FYE2021 Target/Initiative	FYE2018 Target	FYE2018 Results	FYE2019 Target/Initiative
Procurement	Green procurement activities	◆ Request both domestic and overseas suppliers to establish, maintain, and strengthen environmental management systems(EMS).	◇ Continue to establish and maintain the EMS including new suppliers.	◇ Continue to maintain the structure to establish EMS including new suppliers.	・Continue to maintain the structure to establish EMS including new suppliers.	・Continue to maintain the structure to establish EMS including new suppliers.
			◇ Request that the entire supply chain improve environmental management throughout the product life cycle.	◇ Revise the guidelines and deploy them to suppliers.	・Collected answers to Guidelines' effectiveness confirmation questionnairs from suppliers and gained their understanding.	・Publish the revised guidelines, and deploy and disseminate 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.	・Continued to promote input IMDS input request, and lead-free solder.	・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.	・Confirmed the actual operation of Guidelines at Subaru suppliers.	・Publish the revised guidelines and deploy and disseminate them to suppliers.
Distribution/Sales	Promotion of environmental conservation activities among dealerships. (Automobiles)	◆ Provide support to Subaru dealerships' environmental activities.	◇ 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".	◇ 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	・Confirmed all dealerships maintaining EA21. ・Continued support for D-SPECS system utilization, and for dealerships yet to introduce the system, helped to created an environment for introduction. Improved the system's function and made efforts to improve operation efficiency and to strengthen comformity to laws and regulations.	・Continue to support voluntary environmental risk reduction activities of each company. ・Integrate environmental related reports from dealerships to D-SPECS system so that work efficiency is improved and comformity with laws and regulations strengthened.
Management	Promotion of environmentalconservation 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 conduct cleanup and greening activities, including biodiversity conservation efforts, near factories. ◆ Support activities of and work with environmental organizations.	◇ 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 into oonsideration.	◇ Continue environmental class visits. ◇ Continue to welcome visitors to the Gunma Visitor's Center. ◇ Continue clean-up activities around each business site. ◇ Start Subaru Forest Project. ◇ Support and cooperate in local environmental conservation activities.	・Provided school visit on the environment 25 times, invited visitors to the Visitor Center, and continued cleanup activities at each site. ・Continued cleanup activities this fical year as well at areas that have close involvement with each site. ・Started the Subaru Forest Project, and completed the selection of fields in Gunma and Utsunomiya areas. ・Concluded the Basic Agreement regarding Forest Conservation Activities with Bifuka Town.	・Continue to provide school visits to lecture on the environment and invite visitors to the Gunma Visitor Center. ・Continue to carry out community cleaning activities. ・Concrete forest conservation projects to be carried out in Gunma, Utsunomiya and Bifuka, where Subaru has close ties with communities.
	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.	・Disclosed the CSR Report 2017. ・Answered to third-party survey on ESG investment. ・Cooperated in the environmental disclosure infrastructure demonstration program of the Ministry of the Environment. ・Still deliberating on the acquisition of third-party certification.	・While trying to improve the quality of information, publicize CSR Report of the next fiscal year. ・Promote active answering to third-party survey that contributes to ESG investment promotion. ・Carry out timely information provision by press releases, etc.
		◆ Improve and enhance the contents of environmental information pages in the CSR Report (Compliance with environmental reporting guidelines, and inclusion of Group companies in the scope of reporting)	◇ Improve compliance of environmental pages in the CSR Reportto environmental reporting guidelines of the Ministry of the Environment, and improve the contents of environmental reporting.	◇ Further enrich the contents of environmental information pages in the CSR Report, and maek preliminary preparations for receiving certification for the report.	・Revised the environmental contents and structure from the perspective of readers. Certification will remain to be an issue.	・Collect information regarding the new Environmental Reporting Guidelines (Ministry of the Environment) and the GRI Standards, and feed the information gathered back to our company's reporting contents.
		◆ Participate in environmental events and publicize corporate environmental activities.	◇ Participate in Eco-Products Exhibitions, etc. to widely publicize the company's eco-friendly activities.	◇ Actively publicize the company's environmental initiatives at events.	・Participated in the EcoPro 2017, and disseminated our environmental initiatives to many people.	・Plan to participate in the EcoPro 2018.
	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.	◇ 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, etc. ◇ Inform all employees of the revised environmental policies.	・Carried out environmental training for managers and all employees. ・Deployed Embironmental Policy, etc. in company's general in-house magazine Shuho. ・Renewed the environmental card, and distributed to all employees.	・Promote education, enlightenment, presentation regarding environment-relatedl laws and regulations, in particular.
	Establishment of an Environmental Management System	◆ Subaru to maintain ISO14001 integrated certification. ◆ Make continuous improvements to the Environmental Management System. ◆ Increase cooperation with subsidiaries and suppliers, and maintain and improve the establishement of consolidated 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 four subsidiaries (Subaru Logistics Co., Ltd., Kiryu Industrial Co., Ltd., Fuji Machinery Co.Ltd. and Industrial Products Co., Ltd.), in order to further improve the system. ◇ Deloy the EA21 value chain to subsidiaries and suppliers.	◇ Continue the integrated certification system, including the four subsidiaries (Subaru Logistics Co., Ltd., Kiryu Industrial Co., Ltd., Fuji Machinery Co. Ltd., and Industrial Products Co., Ltd.) and obtain certification with the revised version. ◇ Explain the EA21 value chain to suppliers, and support participating suppliers.	・Obtained ISO14001:2015 version integrated certification. ・Among EA21 value chain, support for certification completed for 20 secondary suppliers.	・Maintain and expand environmental system mechanism from the perspective of Subaru Group. ・Expand the number of companies with EA21 value chain certification.

*Eco Action 21: An environmental management system designed by the Ministry of the Environment based on ISO14001, aiming at easy implementation by small-to-medium sized corporations.

Organization

Subaru 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 for the Environment.
Serving as the head of the Company-wide EMS and the chairperson of the Environmental Committee, the director responsible for environmental issues conducts 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



☆Companies participate in the domestic affiliated company meeting
* Group certification

Status of Establishing the Environmental Management System

Subaru, actively engaging in establishing an environmental management system for the entire Subaru Group, has established environmental management systems at offices, business partners, foreign and domestic consolidated manufacturing companies, and foreign and domestic Subaru dealerships, and is acquiring third-party certification.

Since FYE2018, Subaru, its eight domestic consolidated manufacturing and transport companies (among them, six companies with * obtained group certification) and three north American consolidated manufacturing and sales companies have obtained ISO14001:2015 certification, and have started its operation. 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 of Japan. In addition, in May 2012, Subaru of Indiana Automotive, Inc. (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 their activities.

Furthermore, Subaru Logistics Co., Ltd. obtained ISO39001 certification, the international standard for road traffic safety management systems, in August 2015, and ISO39001, the quality management systems standard, in February 2016.

In addition to these achievements, Subaru Group, through global business activities, will 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 Subaru Group's EMS/EnMS Establishment

Factories and Offices					Dealerships/Distributors	
Category	**Subaru Corporation**	**Business Partners**	**Domestic Consolidated Production and Distribution Companies**	**Overseas Consolidated Production Company**	**Domestic Consolidated Dealerships**	**Overseas Consolidated Distributors**
Divisions	Gunma plant Tokyo Office Utsunomiya Plant Handa Plant West Handa Plant Headquarters	Green procurement Raw material procurement vendors	*Fuji Machinery Co., Ltd. *Kiryu Industrial Co., Ltd. *Yusoki Kogyo K.K. *Subaru Logistics Co., Ltd. *FAS Corporation *Industrial Products Co., Ltd. Ichitan Co., Ltd. Fuji Jukou House Corporation Total: 8 companies	SIA	All domestic Subaru dealerships Total: 44 dealerships	SOA SCI Total: 2 distributors
Acquired EMS/EnMS	ISO14001: 2015 version	Either ISO 14001 or Eco Action 21	ISO14001	ISO14001 ISO50001	Eco Action 21	ISO14001

* Group certification

Introduction of Eco Action 21 Value Chain Model Business

Subaru was the first automobile manufacturer to acquire Eco Action 21 certification for all domestic dealerships and outlets in March 2011 and are promoting operation under these guidelines. In November 2016, this achievement was recognized and approved as the “First Value Chain Model Business” for further promotion of the certification 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 Institute for Promoting Sustainable Societies (IPSuS)*, an accreditation institute for eco action. Last fiscal year, we supported 20 Tier2 business partners’ Eco Action 21 certification registration in order for the value chain as a whole to promote the certification.

* IPSuS: Institute for Promoting Sustainable Societies
This organization studies, plans and implements new initiatives for building sustainable societies by integrating initiatives related to business, such as Eco Action 21, and initiatives related to products and services that make use of the supply chain.

Related information

› Environmental Management System Request to Business Partners
› CSR Guidelines for Suppliers

Scope 3 Calculation

Regarding greenhouse gas emissions, it is a demand of society for companies to calculate and disclose emissions of their entire supply chain. Subaru has participated in the Ministry of the Environment “Support for Calculating Supply Chain Greenhouse Gas Emissions toward an Environmental Information Disclosure Infrastructure,” and receives assistance from NTT Data Institute of Management Consulting, Inc. in Scope 3 calculations. We will continue to promote identifying and managing GHG emissions. For detailed performance of Scope 1, Scope 2, and Scope 3, please refer to the section on climate change.

Related information

› Climate Change

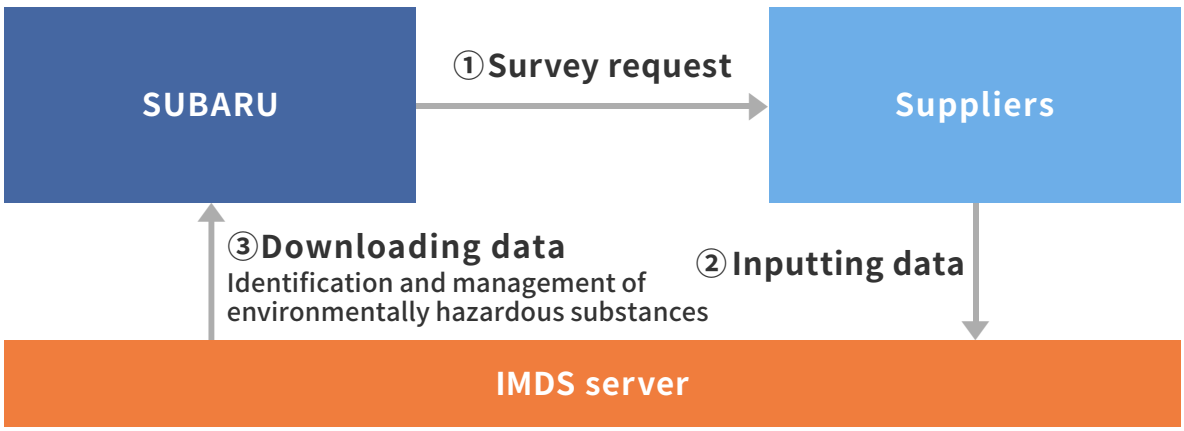
Management of Chemical Substances (Operation of the IMDS)

Since the enforcement of the European Union's Registration, Evaluation and Authorization of Chemicals (REACH) regulation, End-of Life Vehicles (ELV) Directive, Chemical Substance Control Law of Japan, etc. various chemical substances have been regulated, 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.

Subaru is promoting strengthened supply chain management by using the IMDS in order to identify the names and amounts of chemical substance used in every one of several tens of thousands of parts that are in automobiles.

Through this initiative, we are managing the restricted substances (lead, mercury, cadmium, hexavalent chromium, etc.) before use, promoting replacement of regulated substances with alternatives, and establishing a management system that can promptly disclose information regarding the usage of substances requiring management according to EU REACH, etc.. Furthermore, Subaru promotes reduction and management of environmentally hazardous substances in cooperation with entire supply chain.

Environmentally Hazardous Substances Management System through IMDS



Related website

› International Material Data System (IMDS)

Environmental Risk Management

Subaru works 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/identification and promoting management of environmental risks.

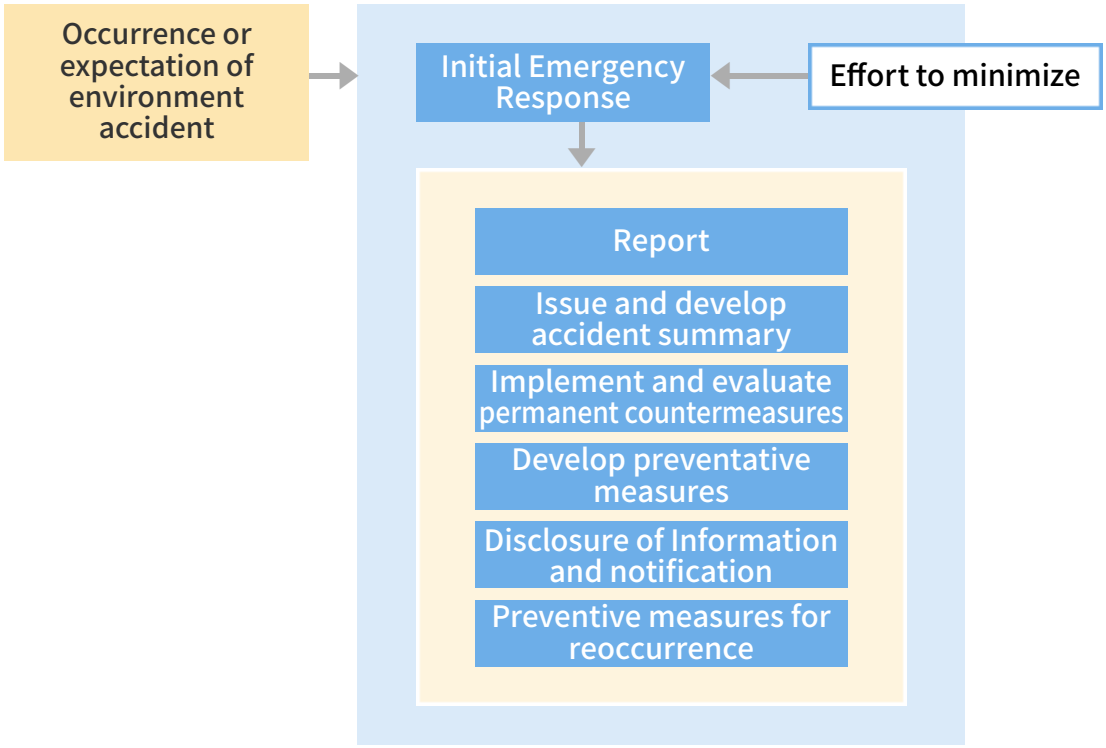
In addition, by standardizing the management process when an environmental risk is discovered and by carrying out training during normal times, we strive to quickly implement emergency measures and measures to prevent recurrence so that secondary risks due to confusion can be avoided.

In November 2017, the Tokyo Office implemented emergency response training with 165 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.

Status of Implementation of Environmental Audits

(1) Regular audit in accordance with the ISO14001 Environmental Management System
(2) On-site review at the contractors for the proper treatment of industrial wastes
(3) Review of compliance status with environmental laws and regulations

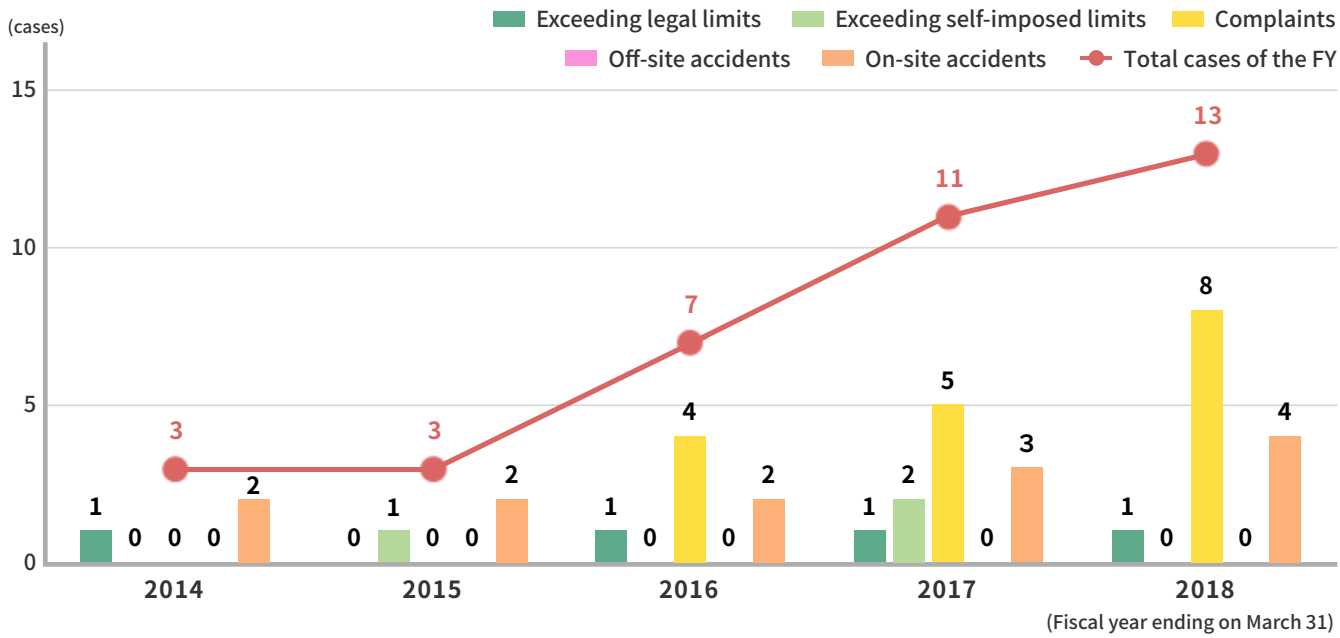
Process When An Environment-related Accident Occurs



Environmental Compliance

Status of Compliance with Environmental Laws and Regulations

Subaru strives 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.



Status of Compliance with Environmental Laws and Regulations in Fiscal Year Ending on March 31, 2018

Subaru sets self-imposed voluntary standards, which are 20% higher than the standards set by environmental laws. We are committed to achieving “zero non-compliance” with both the legal and voluntary standards. There was one case of exceeding water quality-related legal standards in FYE2018, so measures were taken to prevent a recurrence.

Name	Number of Cases	Details of Main Corrective Measures
Gunma Plant	1 case	Immediately took measures including chemical processes.

Environmental Complaints Received in Fiscal Year Ending on March 31, 2018

We are striving to achieve the goal of zero environmental complaints. However, we received 8 complaints and took corrective measures in FYE2018.

Name	Number of Cases	Details of Main Corrective Measures
Gunma Plant	Noise: 1 case	Time of parking lot use restricted and change of parking lots.
	Odor: 3 cases	Facilities checked.
Utsunomiya Plant	Noise: 3 cases	Soundproofing measures, muffling measures and daily inspection.
		Facilities repaired and addition of daily inspection.
		To reduce noise from the facility when it operated. Measures to be taken within FYE2019.
Tokyo Office	Noise: 1 case	Facility's operation noise level reduced. Addition of regular voluntary noise check at night time.

Status of Environmental Accident Occurrences in Fiscal Year Ending on March 31, 2018

We are striving to achieve the goal of zero accidents, both on and off site. While there were no off-site accident, there were four incidents of on-site water flow accidents, and we took measures to prevent recurrence.

Name	Number of Cases	Details of Main Corrective Measures
Gunma Plant	2 cases	Implemented preventive education.
		Reviewed part of work procedure document and implemented its thorough dissemination.
Parts Distribution Center	2 cases	Called attention to all suppliers.
		Made preliminary assumption of measures against effluent risk.

Environmental Education

Subaru regards initiatives for environmental issues as one of social responsibilities as a corporation, and provides employees at all levels and of all tasks with a range of environmental education programs.
In April 2017, we implemented “New Employee Environmental Conservation Education” for the 574 new employees. Our personnel in charge of environment gave lectures on global environmental issues and Subaru’s environmental policy and conservation activities, including the importance of each employee’s participation in these initiatives using case studies.

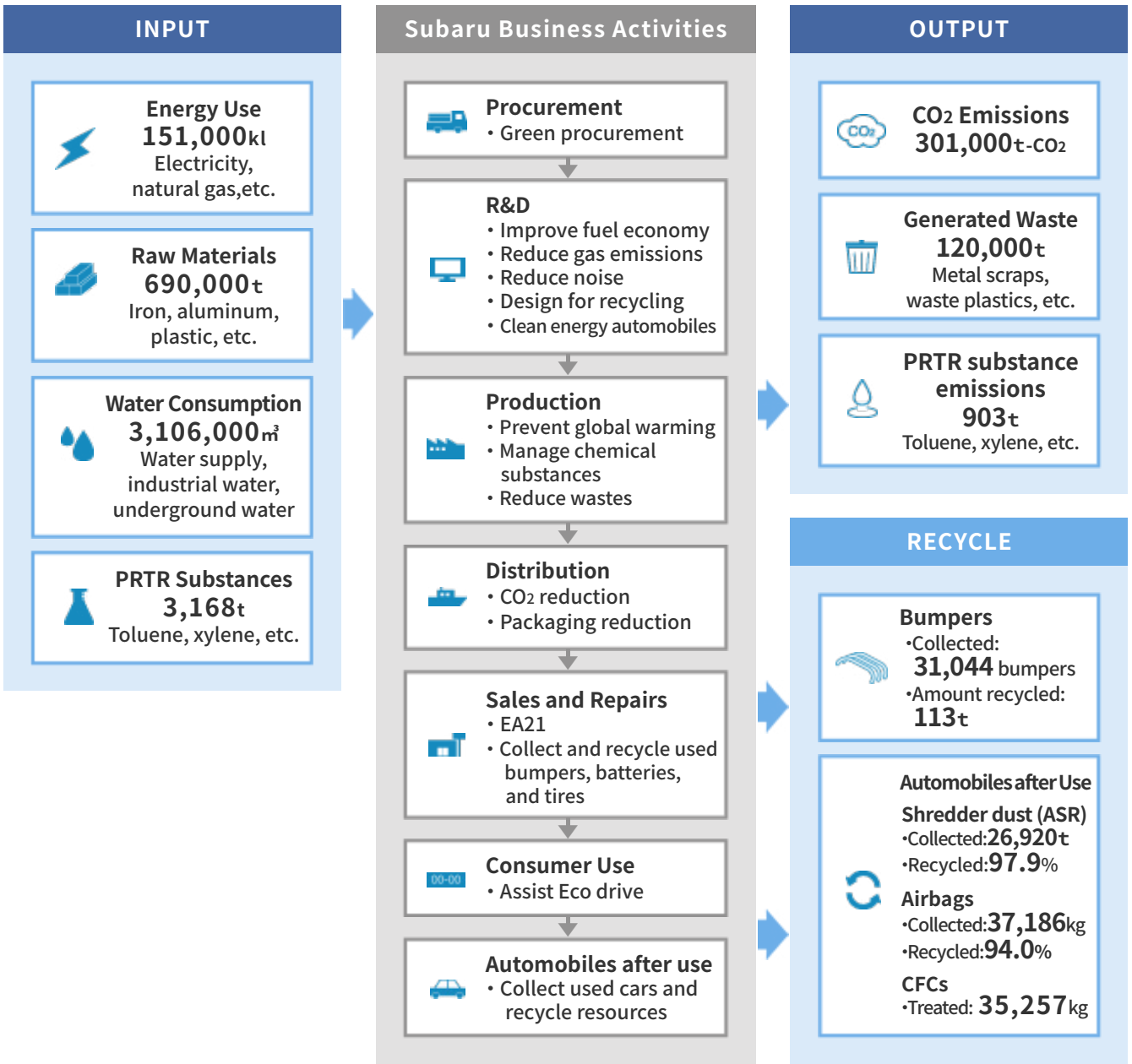
We also held the ISO14001 New Internal Auditors Training Seminar to enhance the internal auditing system for the ISO14001 environmental management system and to strengthen environmental conservation activities conducted at workplaces. In this seminar, external lecturers were invited for the two-day session, in which participants gained knowledge necessary as 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.

New Employee Environmental Conservation Education

ISO14001 New Internal Auditors Training Seminar

Overall Image of Subaru's Environmental Impact concerning Automobiles



Note: These are the main environmental impacts arising from our automobile manufacturing, sales, etc. In addition to this, we carry out LCA and Scope 3 calculations.
Target: Tokyo Office, Gunma Plant
Energy use, CO_2 emissions: Calculated according to the Mandatory Greenhouse Gas Accounting and Reporting System based on the Act on the Promotion of Global Warming Countermeasures.
PRTR: Chemical substances listed under the PRTR Law of Japan

Environmental Accounting

Our Approach to Environmental Cost and Its Calculation Method

Referencing to the Guidelines of the Ministry of the Environment, Subaru's independent guidelines had been established for our environmental conservation activity organizations (Calculation methods have been changed partially starting in Fiscal Year Ending on March 31 2006), and environmental costs are calculated and summarized according to these guidelines (Group companies also use the same guidelines for calculations.).
Detailed calculation methods can be found on pages 9-13 in 2006 Report on the Environment and Society, separate volume DATA.

Environmental Cost and Capital Investment Calculation Method

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

Capital investment and environmental cost =
{(Total investment – Investment not for energy conservation)/Total investment}
x (Capital investments in the production facility, maintenance costs, etc.)

For smaller facilities with investments of less than 25 million yen, all the 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 small 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.

FYE2018 Calculation Results

Environmental cost came to 36.2 billion yen on a non-consolidated basis, up 1.69 billion yen (4.9%) from the previous fiscal year, and 38.0 billion yen on a consolidated basis, up 1.83 billion yen (5.1%). The cost increase was mainly due to an increase in research and development (R&D) costs (1.97 billion yen on a non-consolidated basis).
Environmental Costs and Effects Calculation Results (Fiscal year ending March 2018)

Environmental Costs and Effects Calculation Results (Fiscal year ending on March 31, 2018)

(Unit: million yen)

Item	Category	Subaru (non-consolidated)				Consolidated			
		FYE2017		FYE2018		FYE2017		FYE2018	
		Investment	Cost	Investment	Cost	Investment	Cost	Investment	Cost
(1) Cost in the business area	①Pollution prevention cost	1,346	410	452	316	1,372	677	452	742
	②Global environmental conservation cost	175	49	112	42	228	77	139	75
	③Resource recycling cost	9	617	0	618	9	1,176	4	1,410
(2) Upstream and downstream costs	Recycling related cost Cost arising from changes in product materials	-	340	-	259	-	340	-	322
(3) Administration cost	Cost for monitoring environmental impact Cost for the Environmental management Cost for environmental education	-	80	-	71	-	159	-	152
(4) R&D cost	R&D cost for environmental impact reduction	4,017	32,535	2,773	34,504	4,232	33,238	2,884	34,889
(5) Social Activity Cost	Cost related to donation, etc. for environmental conservation groups	-	98	-	121	-	102	-	124
(6) Environmental remediation cost	Cost to remedy soil and underground pollution	0	359	0	244	0	381	0	262
(7) Other cost		-	0	-	0	-	0	-	0
Grand total		5,547	34,488	3,337	36,176	5,841	36,150	3,479	37,976
		40,035		39,512		41,991		41,455	

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

Economic Effect Calculation Results (Fiscal year ending on March 31, 2018)

Item	Economic effect (Millions of yen)	
	Non-consolidated	Consolidated
Reduction in energy cost from energy conservation	16	20
Sales from recycling (sales of valuable items: metals, waste liquids, and cardboard boxes)	1,820	3,633
Reduced raw material cost due to recycling (packaging cost, etc.)	0	0

[Companies included in the consolidated calculation]
Six domestic subsidiaries: Yusoki Kogyo K.K., Fuji Machinery Co., Ltd., Ichitan Co., Ltd., Kiryu Industrial Co., Ltd. , Subaru Logistics Co., Ltd., Industrial Products Co., Ltd.
Four overseas subsidiaries: Subaru of Indiana Automotive, Inc., Subaru of America, Inc., Subaru Canada、Inc., Subaru Research & Development, Inc.

Our Approach to Environmentally Friendly Automobiles

Subaru recognizes the importance of reducing CO_2 emissions, which is said to be a factor of global warming. Aiming for compatibility between "protection of the global environment" and "Enjoyment and Peace of Mind," we are pursuing to develop environmentally friendly products unique to Subaru with advanced technology that considers the life cycle of vehicles, from mining of raw materials to manufacturing, transportation, use, and disposal. We aim for providing our customers with trustworthy, highly utility automobiles that meet a variety of uses of our customers and that can be used for a long time.

Initiatives for Improving Fuel Economy

Subaru thinks how we achieve ultimate fuel efficiency – the environmental performance of products – is important in order to reduce CO_2 emissions, which is said to be a factor of global warming. We will continue to improve the performance of electricity management of gasoline engines. Furthermore, since vehicle weight is expected to increase due to compliance to strengthened safety and environmental regulations and to product improvements, we will strive to make the automobiles lightweight by rationalizing the structure, reviewing materials, and integrating functions. In addition, we will improve the performance of Subaru Global Platform*, deploy it horizontally to other models, and steadily improve the fuel efficiency of existing gasoline- engine vehicles.

* Subaru Global Platform: Next generation platform where Subaru's will as well as knowledge and technology that had been cultivated over many years are embodied.

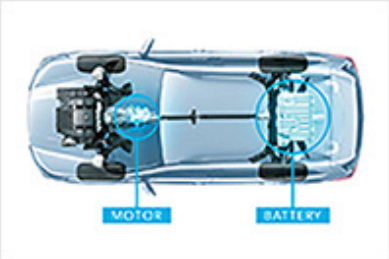
"SUBARU XV" released in May 2017 is equipped with a new direct injection engine and an improved continuously variable transmission (CVT), thereby improving drivability and fuel consumption performance. From the ease of operation, wasteful operation of the accelerator has decreased, and actual fuel efficiency has improved.

"Legacy" currently on sale has partially adopted reinforced high tensile steel instead of steel plate commonly used, achieving both weight reduction and strength. Rationalization of the body reinforcement material is also realized by attaching the engine not to the body but to the cradle-shaped frame. By precisely reviewing the body structure, we have realized a lightweight body while increasing the rigidity balance and collision safety that create stability of driving.

Legacy's lightweight body that achieved both weight reduction and strength

Expanding Electric Vehicle Lineup

We will expand our lineup of SUV type EVs that have excellent capability and loadability distinctive to Subaru as well as new electric vehicles that achieve both improved fuel efficiency and sports performance utilizing motors.
Regarding electrification, we intend to concentrate our technologies in creating electric vehicles distinctive to Subaru while actively promoting collaboration with others in areas of base technology development and standardization.



e-BOXER: Newly developed power unit

New model “Forester”*1 launched in July 2018 and “SUBARU XV”*1 released in October 2018 adopt a newly developed power unit “e-BOXER”*2 that combines horizontally-opposed engine and electrification technology. Equipped with 2.0L direct-injection engine with increased efficiency, the combination of the compact, high performance motor and battery as well as “Lineatronic”*3 pursuing improved fuel efficiency enables high driving performance for any driving scene. For example, by using “ECO Cruise Control” function, Subaru’s environmental technology realizes the new dimension of driving and driving control, such as maximizing utilization of the motor assist and regenerative braking and making more fuel-efficient follow-up run possible.

*1 Adopted in Advance grade.

*2 “e-BOXER” is a generic term used for “horizontally-opposed engine + electrification technology” that not only realizes enjoyment of driving that is traditional of Subaru but also considers the environment.

*3 Lineatronic: New generation CVT “automatic transmission” with vertically placed chain.

In addition, we are planning to launch plug-In hybrid vehicle（PHEV） based on “CrossTrek” (Japanese name: SUBARU XV) in the US market in accordance with regulations on fuel efficiency of countries around the world that will become even more severe in the future as well as Zero Emission Vehicle (ZEV) regulation of the US. We also plan to sell electric vehicle (EV) at the global level aiming for 2021. To achieve Japan’s FYE2021 Fuel Efficiency Standards, we intend to expand the introduction of electric vehicles and newly developed “Downsizing Turbo Engine.”

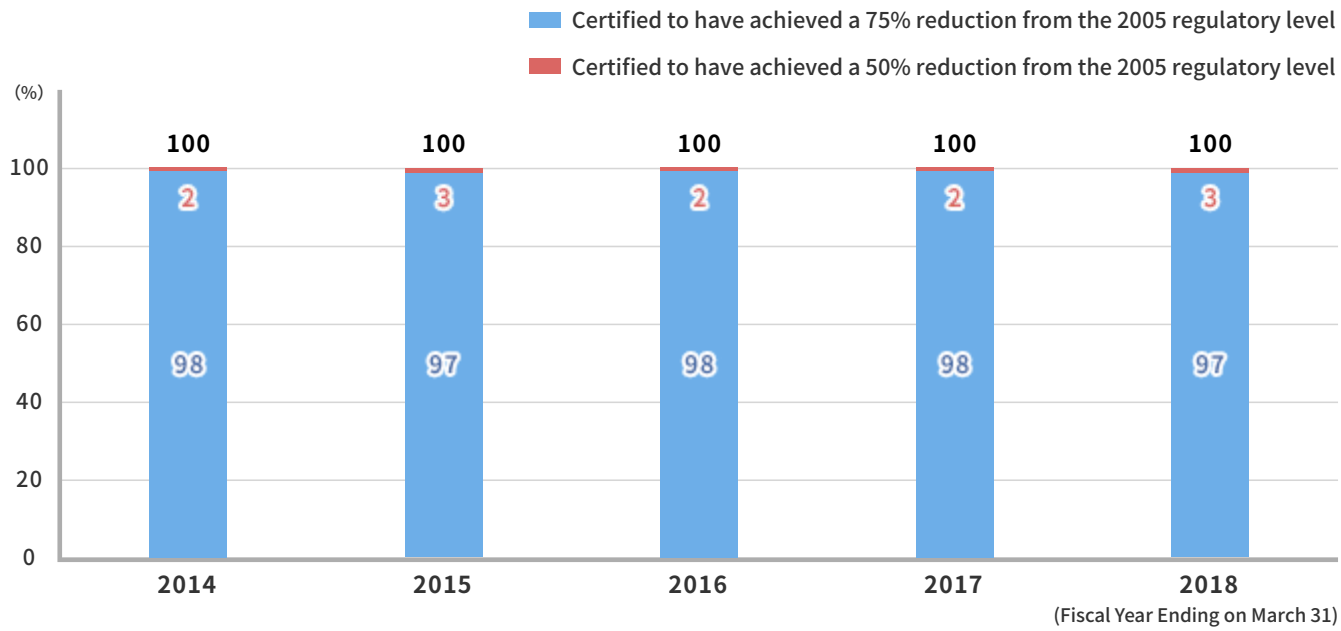
Going forward, with utility and customer preferences in mind, we will promote the development and lineup of electric vehicles and will gradually increase the proportion of eco-friendly vehicles and will enhance each market.

Clean Gas Emissions

Improvement and Popularization of Certified Low Emission Vehicles

All Subaru vehicles equipped with Natural Aspiration (NA) 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 FYE2013. 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



Reducing Environmentally Hazardous Substances

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

Reduction Targets of JAMAs Voluntary Action Program and Achievement Status

Substance	Target	Subaru's achievement
Lead	Implemented in Jan. 2006. Reduce the amount used per vehicle to less than 1/10 of 1996 levels.	All models achieved the target (Target achievement still continuing since Jan. 2006.)
Mercury	Use prohibited since Jan. 2005, with the following exceptions. (The following parts used for traffic safety are excluded.) (1) Liquid crystal panels for navigation, etc. (2) Combination meter (3) Discharge lamp (4) Interior lighting	All models achieved the target (Target achievement still continuing since Jan. 2005.)
Hexavalent Chromium	Use prohibited since Jan. 2008.	All models achieved the target (Target achievement still continuing since Jan. 2008.)
Cadmium	Use prohibited since Jan. 2007	All models achieved the target (Target achievement still continuing since Jan. 2007.)

Reducing VOCs in Vehicle Interiors

Subaru is 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, 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 to further make the environment in vehicle interiors comfortable.

* Voluntary target by JAMA: To reduce cabin concentrations of the 13 substances designated 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 FYE2007 and after) under the Voluntary Approach in Reducing Cabin VOC Concentration Levels initiated by JAMA.

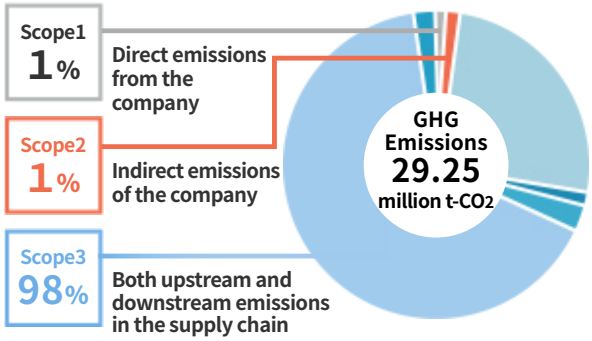
Our Approach to Climate Change

Subaru's business requires much energy at the production stage and also at the stage when Subaru products are used, and most of the energy we use currently depends on fossil fuels. Governments such as Japan, the United States, Canada, Australia, Europe and China, which are the main markets of Subaru, have established automobile fuel efficiency regulations and CO_2 emission regulations, which directly and continuously impact our use of energy. Similarly, the energy consumed by factories and others in the process of production is affected by the Energy Conservation Law and others.
In order to contribute to the realization of the 2°C Scenario, Subaru revised in April 2017 for the first time in about seven years the "Environmental Policy," which is the basis of our principles. The revised Environmental Policy declares that we tackle climate change from a medium- to long-term perspective in order to achieve sustainable growth of Subaru and society. Based on this policy, we announced specific targets to achieve in the New Mid-Term Management Vision "STEP" announced in July 2018 and the business report in the same year. We have begun formulating striving towards these goals.
As part of our efforts, we announced that we aim to reduce our direct CO_2 emissions (Scope 1 and 2) by 30% on a total emissions volume basis by FYE 2031 (compared with FYE 2017). We have also announced the direction of our efforts towards low carbonization of Subaru products, such as electrification of our products, in the New Mid-Term Management Vision "STEP."

Greenhouse Gas Emissions Related to Subaru Group

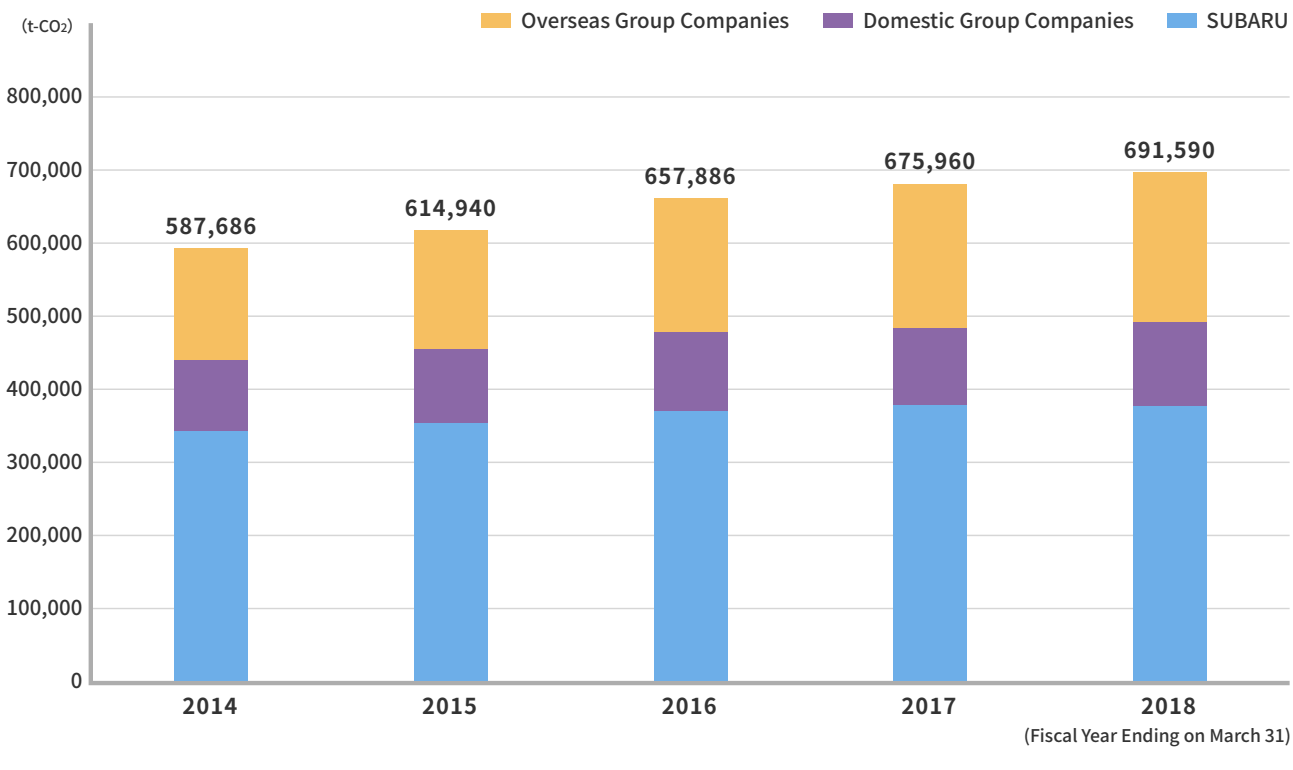
Greenhouse Gas Emissions in the Supply Chain

Greenhouse gas emissions in the supply chain for FYE2018 were 29.25 million t-CO_2.
Subaru 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.



CO_2 Emissions (Scope 1, Scope 2)

CO_2 Emissions



Targeted companies Subaru Corporation

Domestic Group Companies: Yusoki Kogyo K.K., Fuji Machinery Co., Ltd., Ichitan Co., Ltd., Kiryu Industrial Co., Ltd., Subaru Logistics Co., Ltd., Industrial Products Co., Ltd., Subaru dealerships

Overseas Group Companies: Subaru of Indiana Automotive, Inc., Subaru of America, Inc., Subaru of Canada, Inc., Subaru Research & Development, Inc.

<Changes in the targeted companies and emission factor>
From this fiscal year, we have added Subaru dealerships to our calculation to further enhance the CO_2 emission data. At the same time, we have changed the emission factor applied to Subaru and its domestic group companies from our own emission factor to the emission factor of the Act on Promotion of Global Warming Countermeasures.
Based on these changes, we recalculated and revised the figures as far back as to FYE2014.

CO_2 Emissions (Scope 3)

Scope 3 Breakdown

Division	Category		Greenhouse Gas Emissions (t-CO_2)	Calculation Scope, etc.
Upstream	1	Purchased goods and services	7,251,192	Domestic and overseas
	2	Capital goods	463,638	Domestic and overseas
	3	Fuel and energy related activities not included in Scopes 1 or 2	81,818	Domestic and overseas
	4	Transportation and delivery (upstream)	1,252,378	Domestic and overseas
	5	Waste generated in operations	28,776	Domestic and overseas
	6	Business travel	4,361	Domestic and overseas
	7	Employee commuting	11,766	Domestic and overseas
	8	Leased assets (upstream)	-	N/A
Downstream	9	Transportation and delivery (downstream)	-	N/A
	10	Processing of sold products	4,200	Domestic and overseas
	11	Use of sold products	18,806,767	Domestic and overseas
	12	End-of-life treatment of sold products	593,463	Domestic and overseas
	13	Leased assets (downstream)	-	N/A
	14	Franchises	56,056	Domestic and overseas
	15	Investments	-	N/A

Initiatives in Production

Based on the Act on the Rational Use of Energy, Subaru has set the mid- and long-term targets and has been making efforts to reduce CO_2 by quantitatively replacing equipment and devices such as lighting with energy-conserving equipment.

Energy Conservation Initiatives

Introduction of cogeneration system

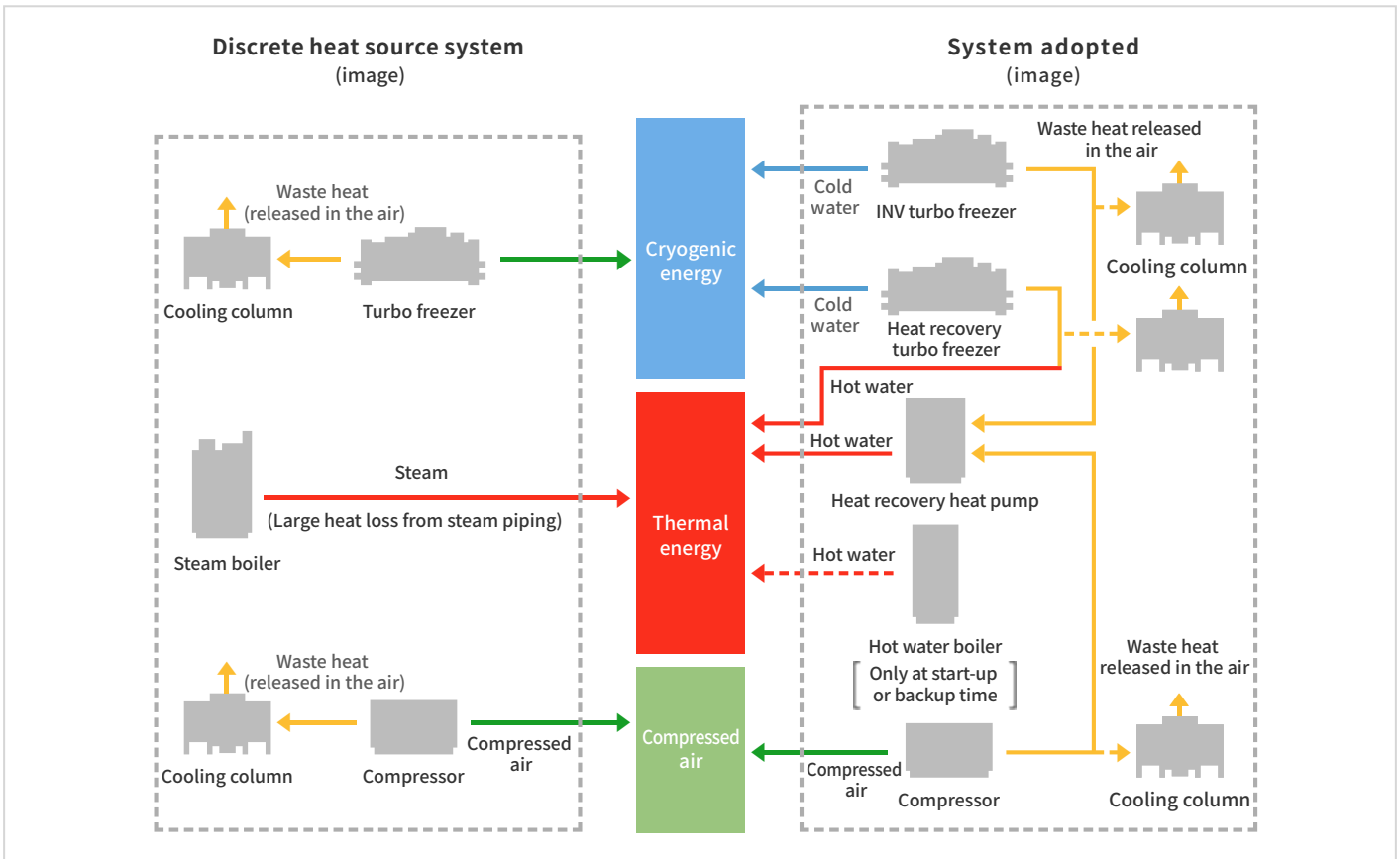
A gas cogeneration system was installed in the Subaru Training Facility in December 2015 to use energy more effectively.

By making use of the cleanness of city gas as the fuel for gas cogeneration and by effective utilization of waste heat, we have the effect of reducing CO_2 emissions by approximately one-third compared with conventional systems.

Cogeneration system installed in the Subaru Training Facility

Installed latest energy-saving equipment

In the automobile painting process, it is necessary to repeat “warm up” and “cool down,” which requires much energy. Thus at the Yajima Plant of GunmaPlant, we introduced a highly efficient heat source system centered on the heat pump in 2018 and efficiently produce hot and cold heat compared to conventional technology (individual heat source system).
With these improvements, we will continue work on energy conservation and reduction of CO_2 emissions.



Initiatives in Distribution

Reducing the Environmental Impact of Transport of Subaru Automobiles

Subaru will review the transport of Subaru automobile from time to time, and establish optimal standard transport routes, promote modal shift, change the composition of completed automobile model to be transported, improve loading efficiency by flexibly responding to larger automobile size, and introduce digital tachograph that contribute to energy saving. We will continue its efforts to reduce environmental impact by promoting efficient transportation.

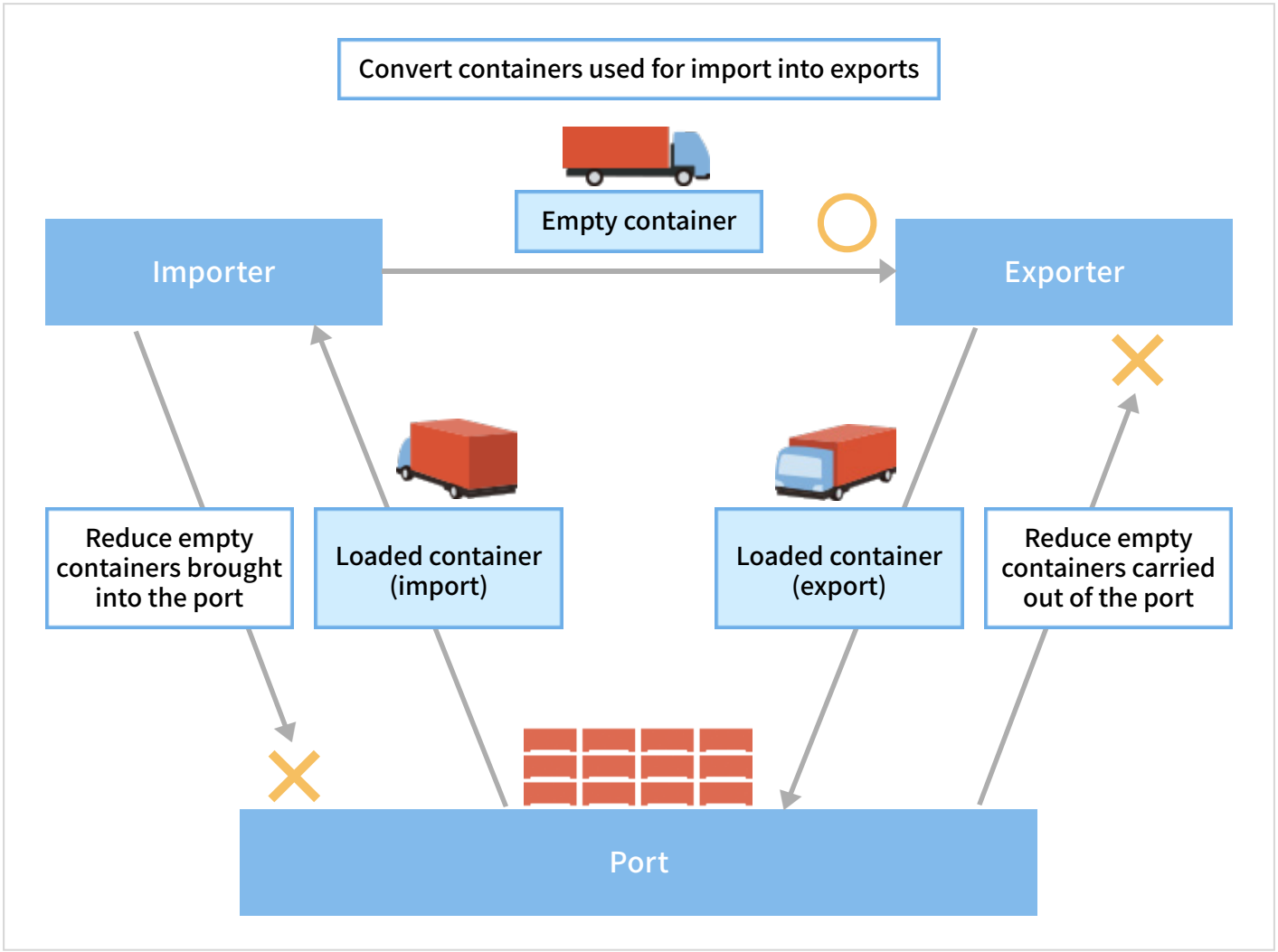
In recent years, we have been able to reduce the amount of fuel use (improved fuel efficiency) and CO_2 emissions from completed automobile transportation by effectively using the improved Tokyo metropolitan highway network.
In FYE 2018, CO_2 emissions during transport per Subaru automobile decreased by 8.3% compared with the target of 1% reduction from FYE 2007 level. We will continue its efforts to work on further reduce CO_2 emissions.

Reducing Environmental Impact on Exports of Subaru Automobile Overseas Production Parts

Introduction of round use

Round use is to convert empty maritime containers used for import into exports without returning them to the port, by directly transporting from importers to exporters, or by utilizing neighboring inland container depots. It is a mechanism to reduce the empty container transport from the port. Subaru Logistics Co., Ltd., which exports overseas production parts of Subaru automobiles, introduced this initiative in July 2017 and will continue to reduce CO_2 emissions.

Concept of Container Round Use

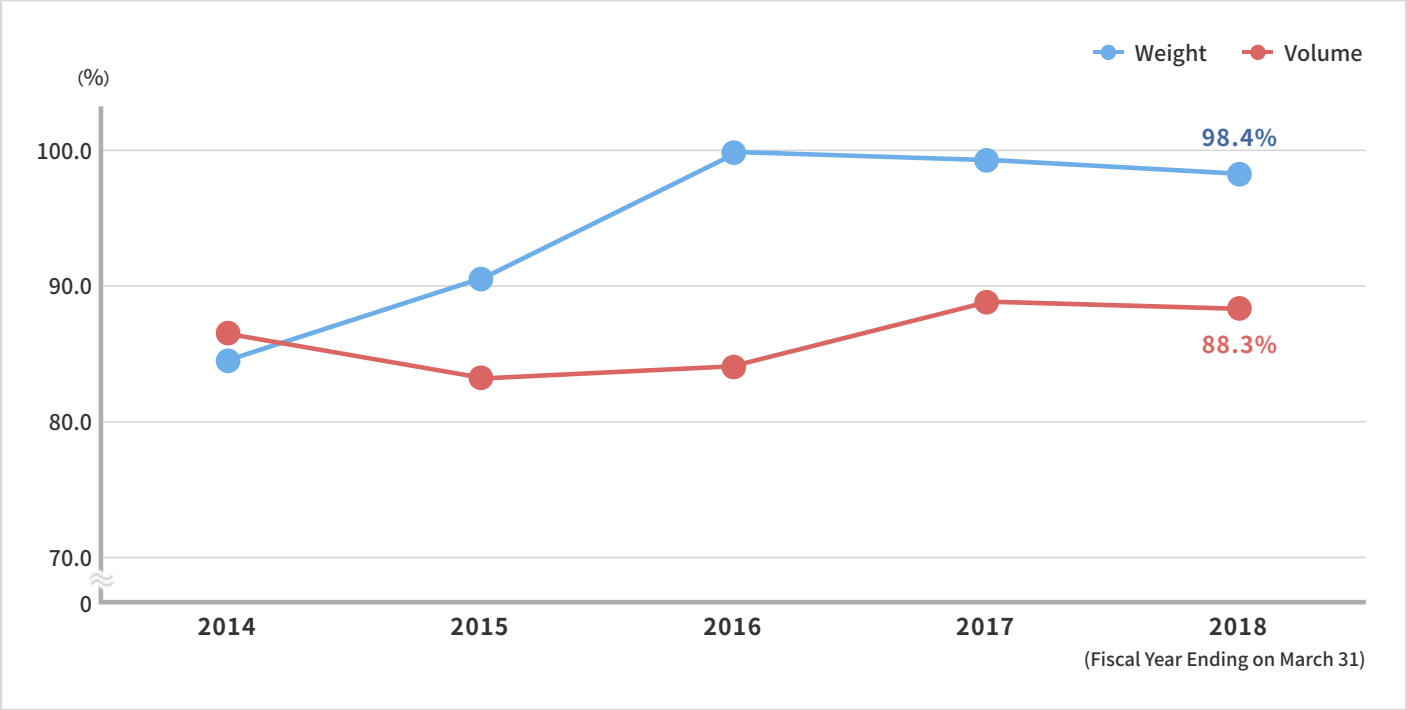


Improvement of container filling rate

Subaru Logistics Co., Ltd., (SLCO) which handles packaging and transport of complete knockdown (CKD)* parts of Subaru automobiles has been carrying out activities to improve container filling ratio to reduce unnecessary space inside containers by improving packaging such as through slimming of and reducing weight of packaging material. As a result, the filling rate (weight) in FYE 2018 reached 98.4%, and the filling rate (volume) improved to 88.3%. SLCO will continue to improve the container filling rate and work on improving transport efficiency and reducing CO_2 emissions.

* CKD: To be fully assembled overseas

Changes in Container Filling Rate



Optimizing parts supply

Subaru had established four domestic area parts centers between October 2013 and October 2016 with the goal of making part supply more efficient.
By consolidating the parts warehouses that had been scattered among the 44 Subaru domestic dealerships throughout Japan into four centers and reviewing the transport routes from there, CO_2 emissions during transport were reduced by 64.8% in FYE2017 from the FYE2013 level.

Introduction of natural gas vehicles

Subaru of Indiana Automotive, Inc. (SIA), the US production base of Subaru automobiles, in cooperation with Venture Logistics, a company in charge of parts delivery, is proceeding 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 reliability. One significant hurdle to CNG was that there were no supply stations for natural gas close by. SIA financed the Venture Logistics with CNG truck installation fee of more than $ 1 million in 2014 and established a natural gas stand at the SIA property site to promote the introduction. As a result of introducing CNG fleet trucks, 1,097 tons of CO_2 emissions per day were eliminated (corresponding to 85% of emissions before the introduction). Energy costs were also reduced by a total of $389,136 compared to using diesel fuel.

Initiatives in Sales

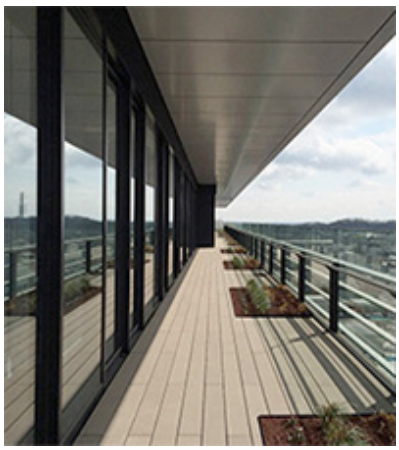
Energy Conservation Initiatives in Domestic Dealerships

In order to reduce greenhouse gas emissions, Subaru Domestic dealerships are sequentially switching to LED lights and high-efficient type air conditioners at the timing of renovation.

Initiatives in Offices

Introduction of Environmentally Advanced Building

The New West Building in Gunma Plant completed in April 2016 had 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 for the kitchens. In addition, a new-generation lighting system combining 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.



Solar radiation shielding due to the effect of the balcony eaves

It has also introduced low-emissivity glazed window glass with 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 to pre-cool or preheat the air and supplies 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.

The new headquarters building and training center of Subaru of America, Inc. (SOA), completed in April 2018, is designed with consideration for the environmental impact based on the LEED (Leadership in Energy & Environmental Design) certification system (Environmental Performance Evaluation System operated by US Green Building Council). SOA plan to promoting activities with the aim of acquiring LEED certification next fiscal year.

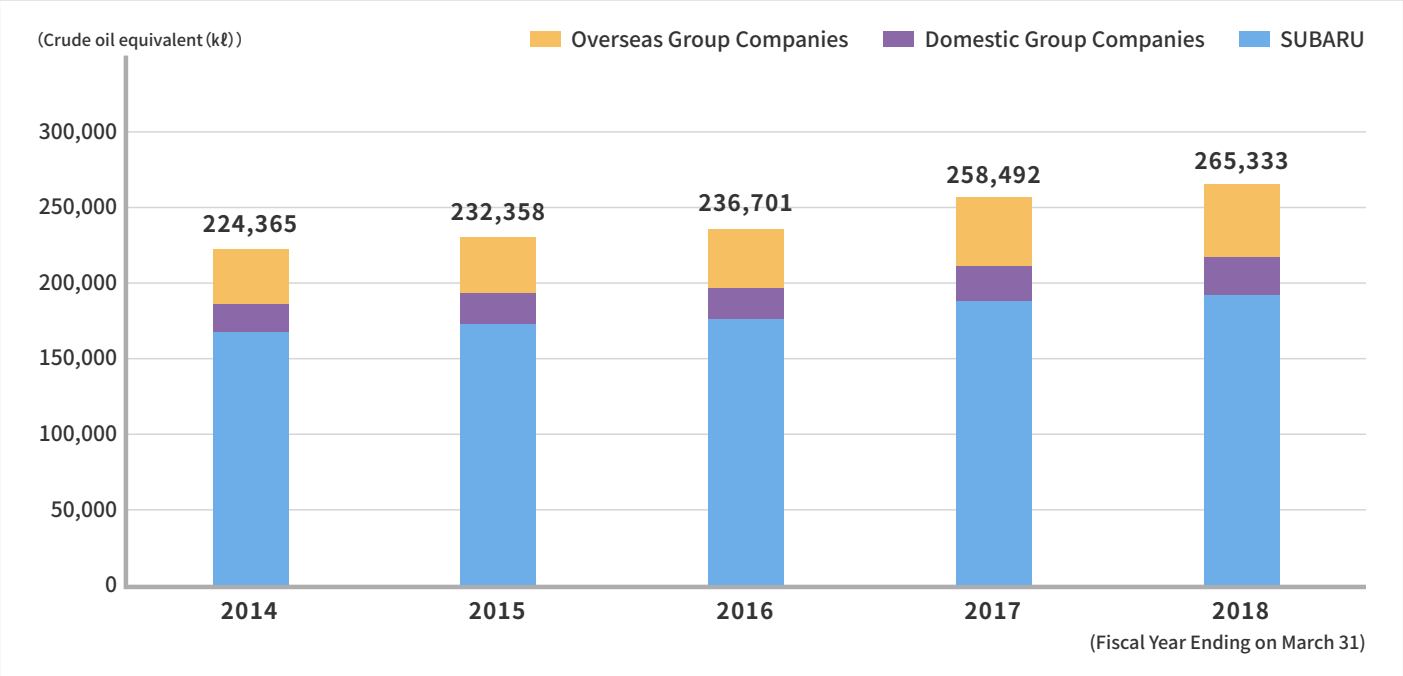
SOA'S new headquarters building and training center with consideration for the environmental impact

Basic Concept regarding Energy

Based on the Law Concerning the Act on the Rational Use, etc. of Energy, we are working on energy conservation through switching facilities and equipment including lighting equipment and through use of renewable energy.

Energy Consumption

Energy consumption in FYE2018 increased by 6,841 kℓ from the previous year.
The main reason for this is an increase in the production volume of automobiles. We will continue aiming for further energy conservation by introducing the latest energy-saving equipment and renewable energy.



Target companies Subaru Corporation

Domestic Group Companies: Yusoki Kogyo K.K., Fuji Machinery Co., Ltd., Ichitan Co., Ltd., Kiryu Industrial Co., Ltd., Subaru Logistics Co., Ltd., Industrial Products Co., Ltd., Subaru dealerships

Overseas Group Companies: Subaru of Indiana Automotive, Inc., Subaru of America, Inc., Subaru of Canada, Inc., Subaru Research & Development, Inc.

Subaru Corporation: Calculated based on the notification of the Energy Conservation Law.

Related information

› Overall Environmental Impact
› CO_2 Emissions (Scope 3)

Introduction of Renewable Energy

Subaru installed solar power system facilities at the Subaru Research and Experiment Center building constructed in FYE 2018 and the Oizumi Plant of Fuji Machinery Co., Ltd. Utilization of renewable energy such as solar power system is becoming an increasingly important option as an energy source that does not emit CO_2. It is also effective for securing stable supply by diversifying energy sources. At the Gunma Oizumi Plant, we are planning to reduce CO_2 emissions of about 2,370 tons of CO_2 per year by installing the Japan's largest-scale solar power generation system (for an annual output of 5,000 MWh/year).

Subaru Research And Experiment Center

Oizumi Plant of Fuji Machinery Co., Ltd.

In the Tokyo Office, two 10kw solar power generation systems in December 2009 and March 2014 and one 5kw facility in January 2014 on the main office building roof, one 2kw system in March 2014 in the guardhouse, and one 2.7kw facility in 2016 in the special high-voltage substation were introduced. We now generate 33,809.7 kWh per year, and effectively utilize it as part of the electric power of the Tokyo Office.

In 2014, we introduced solar power system with a rated output of 420 kw (corresponding to 100 detached houses) as a power distribution project in Kiryu City, Gunma Prefecture, and we started a project to generate and sell electricity of 427,706 kWh per year.

Solar power generation system with the output corresponding to the use by 100 detached houses.

Establishment of Environmentally Conscious Parts center and Training Center

Subaru of America, Inc.'s Parts and Training Center in Florence, New Jersey opened in June 2013 has awarded LEED certification for environmentally conscious buildings. This facility has a solar power generation system with 1 MW power generation capacity is installed on the rooftop, and a new server with about half the power consumption compared to the conventional one is being introduced.
In FYE2018, SOA switched the lighting fixtures to LED light bulbs, reducing the total electricity consumption by 13.13%.

1 MW Power Generation Facility

Parts and Training Center in Florence

Introduction of Micro-Hydroelectric Power Generation System using circulating water

In January 2014, the Tokyo Office installed micro-hydroelectric power generation system (2.9 kW) as an energy recovery system using cooling circulating water at some of its research facilities, and its system is now generating about 13,000 kWh of electricity per year (corresponds to electricity use of three households). This system installs water wheel which rotates with the water's head to generate electricity. Power generated by this system is used for circulating water pump.

Introduction of "Tochigi Furusato Denki" Program

Please see here for the details.

Our Approach to Resource Recycling

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 overseas production plants, and aiming for a higher dimensional recycling.

Specifically, we put “resource recycling” as one of the themes of Subarus Voluntary Plan for the Environment, and we will steadily implement an environmental conservation voluntary action plan based on it.

Recycling of Raw Materials

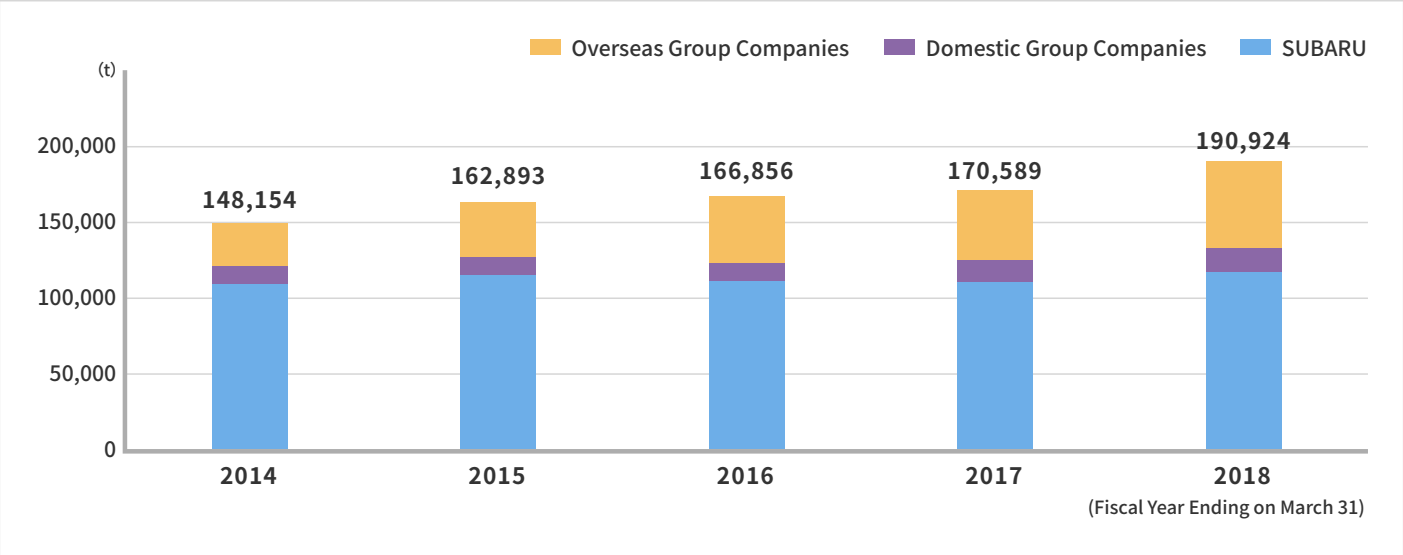
By reusing the discard generated at the time of Subaru’s automobile production, scraps, collected used materials, etc. in place of new materials to be used such as iron, aluminum, plastics, etc., which account for a large proportion of the contents of the automobile, Subaru is working on the closed loop recycling, which reduces natural resource consumption, environmentally hazardous substances, and wastes.

Raw material used in automobiles in FYE2018		Recycling method
Iron	646,147 ton	Provide professional dealers with iron scraps and they reuse them.
Aluminum	20,338 ton	Aluminum scraps are re-melted at plants and reused almost entirely.
Plastic	22,000 ton	Plastic scraps are re-melted at plants and reused almost entirely.

Wastes

Wastes generated in FYE2018 increased by 20,335 tons from the previous year.
The main cause is due to an increase of the automobiles volumes. But we consider wastes as a valuable resources, we collect and reuse them as much as possible or appropriately treat them, and we will continue zero landfill.

Waste Generation



Targeted companies/divisions:
Subaru: Gunma Plant, Tokyo Office, Utsunomiya Plant, Handa Plant, Handa West Plant
Six Domestic Group Companies: Yusoki Kogyo K.K., Fuji Machinery Co., Ltd., Ichitan Co., Ltd., Kiryu Industrial Co., Ltd., Subaru Logistics Co., Ltd., Industrial Products Co., Ltd.
Four Overseas Group Companies: Subaru of Indiana Automotive, Inc., Subaru of America, Inc., Subaru of Canada, Inc., Subaru Research & Development, Inc.

* Includes scrap metal sold.

We do not import/export hazardous wastes stipulated in Basel Convention 2 Annex I, II, III, and IV.

Related information

› Reuse of Packaging Materials

Processing of End-of-Life Vehicles (ELVs)

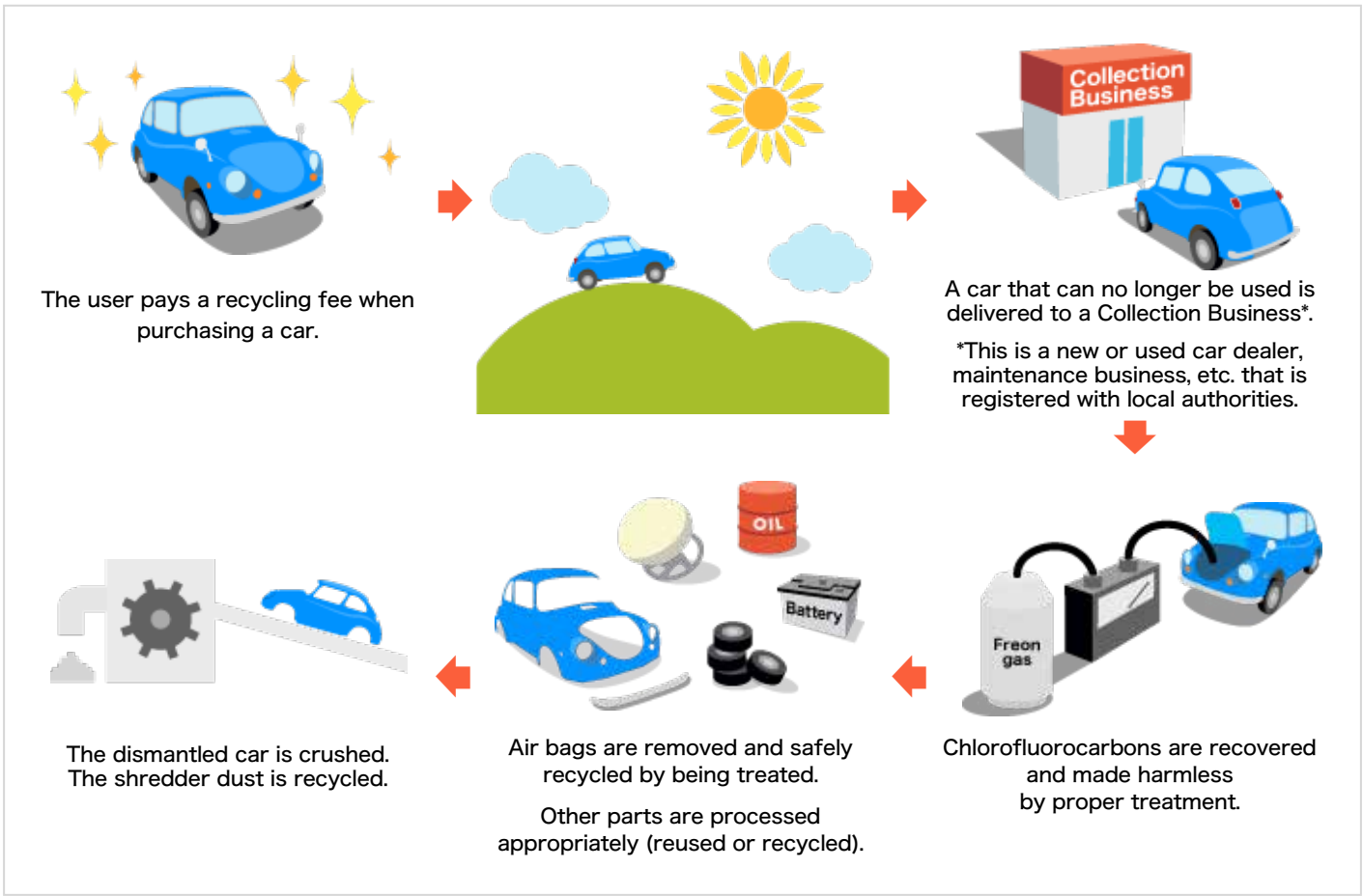
Based on the End-of-Life Recycling Law in Japan (Act on Recycling, etc. of End-of-Life Vehicles), car manufacturers are obliged to fully recover and appropriately recycle automotive shredder residue (ASR), airbags, and chlorofluorocarbons (CFCs) when cars they manufacture become end-of-life vehicles.

Subaru aims to ensure smooth recovery and recycling of three items, namely ASR, airbags and CFCs, generated from end-of-life vehicles, and to stably maintain a high level of recycling rates. Through ART, a consortium Subaru and 12 other car manufactures, etc. have established, Subaru promotes proper recycling of ASR smoothly and efficiently. Regarding the recycling of airbags and CFCs, appropriate processing is carried out through Japan Auto Recycling Partnership Ltd., established jointly with domestic automobile manufacturers and importers.

The ASR recycling rate for Fiscal year ending on March 2018 was 97.9%, satisfying the Fiscal year ending March 2016 legal standard of 70%.

As for airbags, a recycling rate of 94% has been attained, exceeding the legal standard of 85%. Also, the entire amount of recovered CFCs was appropriately treated. Please go over the following pages for the latest information on our recycling achievement based on the End-of-Life Recycling Law.

Automobile Recycling Process



Promotion of Recycling Conscious Design

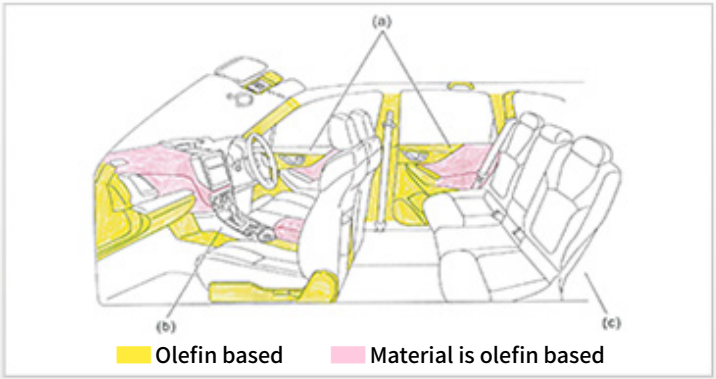
In order to use limited resources effectively, Subaru promotes recycling conscious design in automobile manufacturing.

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.

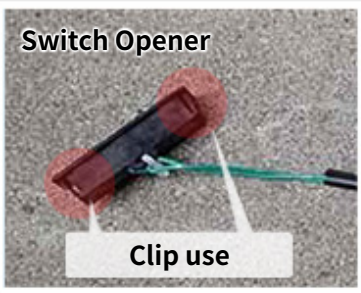


Improved Material Identification

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

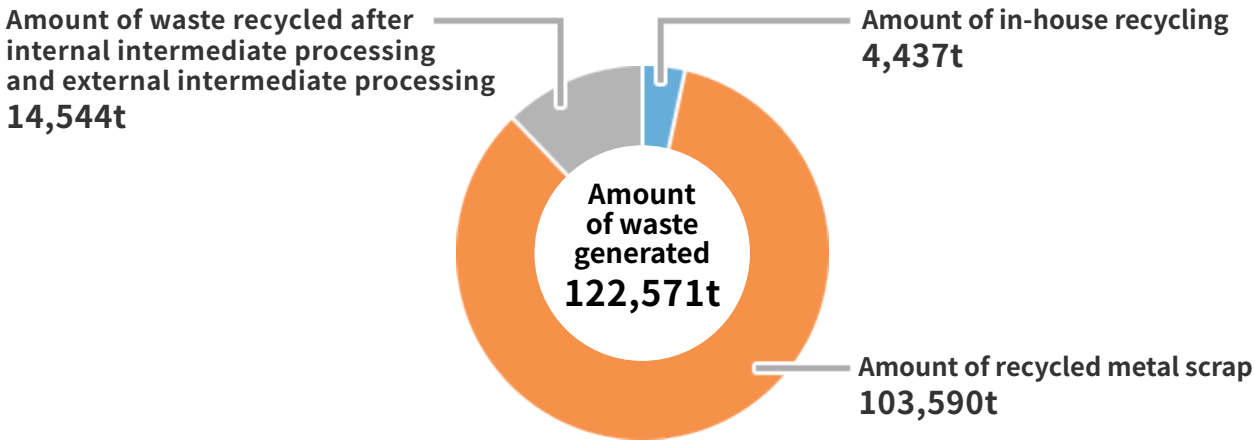
Eliminated screws for the switch opener of the trunk and rear gate by using clips.



Initiatives for Waste Reduction at Plants

All Subaru manufacturing plants in and out of Japan have maintained zero landfill for waste materials since Fiscal year ending March 2005.

Overview of Waste Generation and Processing in All Sites in Fiscal year ending March 2018



Aggregation range: Gunma Plant, Tokyo Office, Utsunomiya Pant, Handa Plant, Handa Nishi Plant

There is no landfill after external intermediate treatment.

Primary Waste and Recycling Method

Primary waste	Primary Recycling Method
Wastewater treatment plant sludge	Raw material for cement
Paint sludge	Iron-making reducer
Waste plastics	RPF (solid fuels, etc.)
Paper waste	Recycled paper, RPF, etc.

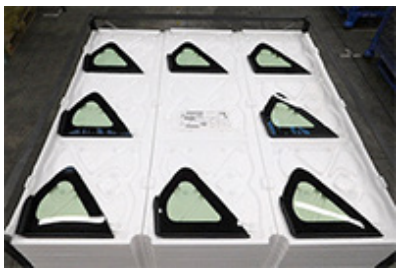
Initiatives in Distribution

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 Fiscal year ending on March 2018 was 698.7 tons, 7% increase from the previous year. This was caused by the increase in production of Impreza in the United States.

We will continue to our efforts to reduce environmental impact by expanding the reuse of packaging materials.


Vacuum molded tray for water pump


Foam material for rear quarter glass

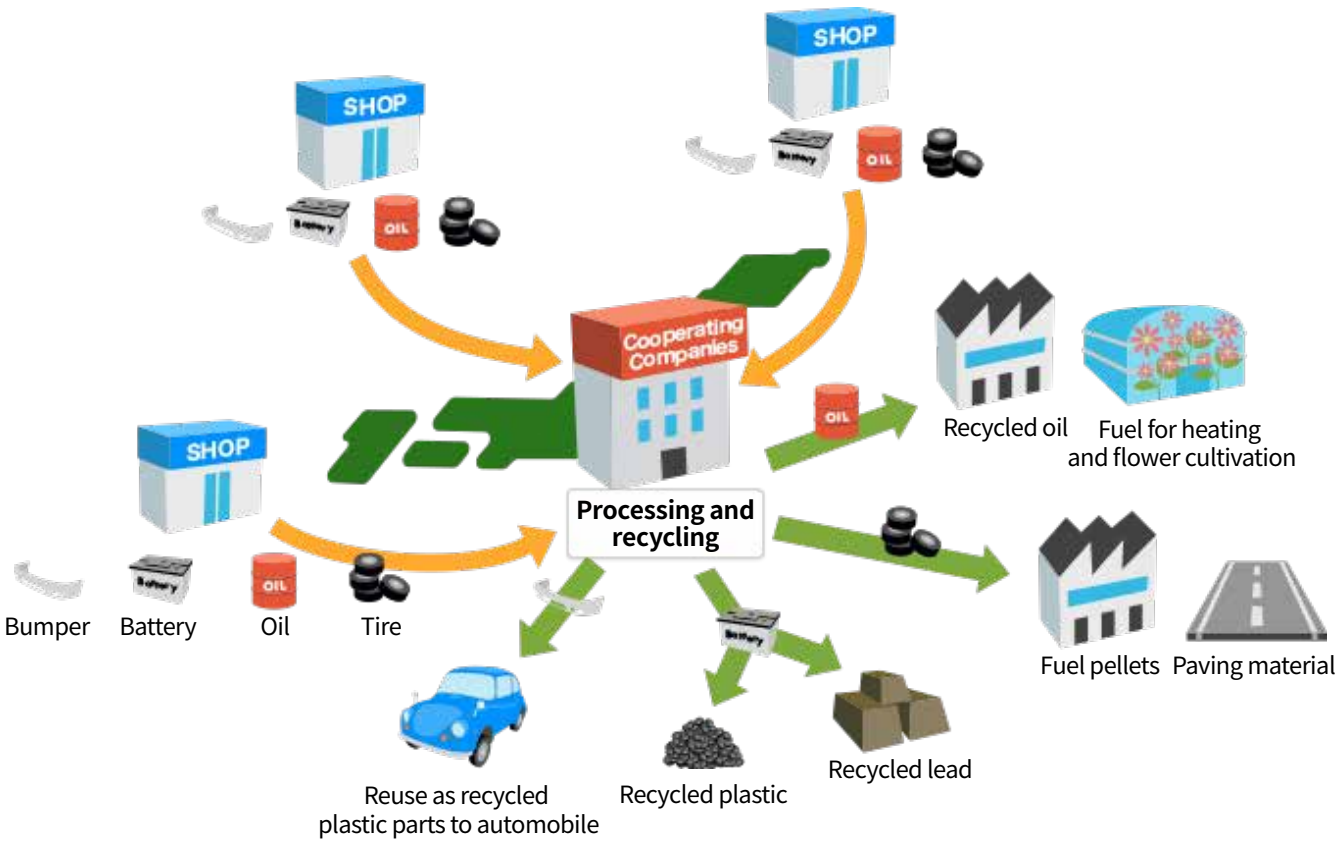
Initiatives in Sales

Zero Emission at Subaru Dealerships in Japan

From April 2012, Subaru domestic dealerships began improving appropriate treatment activities for waste generated from their business activities to promote environmental conservation.

Collaboration and cooperation with 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 FYE2018, 1,433 tons of used lead-acid batteries (113,395 used batteries), 5,457 kiloliters of used oil, and 167,444 used tires were collected and recycled.

We believe that the zero emission activities of Subaru domestic dealerships, who are closest to stakeholders, are environmental conservation activities closer to home. They can also provide an environment with safety and peace of mind, in addition to products, by promoting more effective use and appropriate processing through defining corporate responsibility and recycling resources.



Recycling of Waste Oil

Waste oil generated at Subaru domestic dealerships during oil changes is recycled as recycled fuel oil based on the zero emissions scheme created by Subaru. Every year, farmers in Yamagata Prefecture grow beautiful poinsettia and cyclamen using this recycled fuel oil for heating greenhouses. Subaru distributed these cyclamens to visitors to Subaru events and EcoPro exhibition.

Cyclamen cultivated in horticultural farmers

Distributing cyclamen to visitors

Recycling of used tires

Used tires changed and collected at Subaru domestic dealerships are crushed and made into rubber chips, which are then reused as fuel at plants such as power plant, paper making company (pulp), steelworks, etc. In addition to this kind of thermal recycling, 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

Animal Square in Stellar Town

Effective Reuse of Old Company Pins

Along with company name change in April 2017, each business site collected old company pins.
Subaru had metal processors take over the former company pins of 42 kg collected to make effective use of them as a metal resource.

Recycling of collected old company pins

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.
In order to make it easier to separate waste generated in national parks, we reduce the amount of waste to be landfilled by making stickers and garbage boxes, or making organic fertilizer from food scraps generated in parks.
In FYE2018, more than 5,000 people including SOA employees and local residents participated in various initiatives. In addition to organizing meetings and events participated by all employees, we create and distribute logos, and post information on the state of these initiatives in newsletters and on bulletin boards to make them widely known to people.
Here, SOA is working to test various approaches to eliminate waste from their parks and then create best practices that can be applied, ideally, across the entire National Parks system.

Recycling container at Grand Teton National Park installed by SOA

Water Resources

Our Approach to Water Resources

Water resources are one of the valuable resources that support our life, living and business activities. But due to the impact of climate change, population growth, and demand growth deriving from economic development, the risk of water resources is predicted to grow in the future.
Water resources are indispensable in the production process at Subaru, and their shortage has the potential of affecting our business activities, we started conducting water risk assessment at major production bases, and has confirmed that our risk is low.
In addition, we appropriately ensure, use, and discharge water in our business activities.

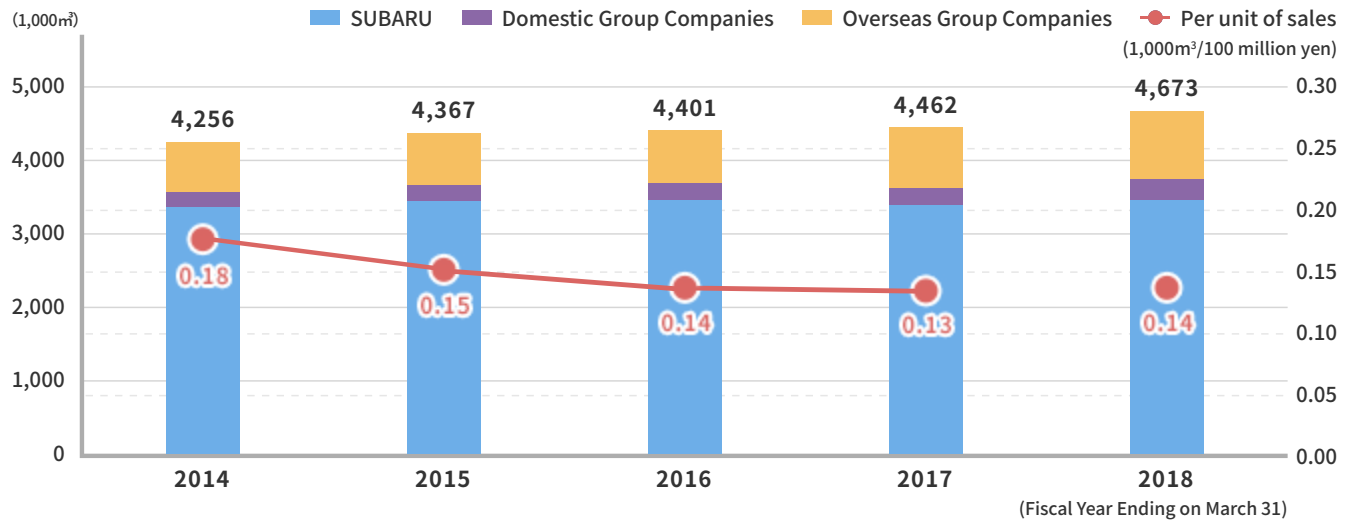
Subaru has established its own voluntary management standards of water quality to be 20% higher than legal standards for water quality. Voluntary inspections and third-party inspections are also conducted regularly. In the water quality test results in FYE2018, there was one case that exceeded the voluntary management standards, and we immediately took measures.

› Status of Compliance with Environmental Laws and Regulations in FYE2018

Water Consumption

The total amount of water use and water used per unit of production are managed by totaling the amount of water for each facilities and reporting and verifying these figures at the biannual meeting.

Water Consumption (Total Amount of Water Use)



Targeted companies/divisions:
Subaru: Gunma Plant, Tokyo Office, Utsunomiya Plant, Handa Plant, Handa West Plant
Domestic Group Companies: Yusoki Kogyo K.K., Fuji Machinery Co., Ltd., Ichitan Co., Ltd., Kiryu Industrial Co., Ltd., Subaru Logistics Co., Ltd., Industrial Products Co., Ltd.
Overseas Group Companies: Subaru of Indiana Automotive, Inc., Subaru of America, Inc., Subaru Canada, Inc., Subaru Research & Development, Inc.

Breakdown of Water Consumption by Water Source at Major Production Bases

(Unit: 1,000m³)

Region	Industrial Water	Tap Water	Source of Water Intake
Japan	3,130	295	Tone River, Watarase River
North America	0	825	Mississippi River
Total	**3,130**	**1,120**	

Targeted companies/divisions:
Japan: Gunma Plant, Utsunomiya Plant, Handa Plant, Handa West Plant, Yusoki Kogyo K.K., Fuji Machinery Co., Ltd., Ichitan Co., Ltd., Kiryu Industrial Co., Ltd., Industrial Products Co., Ltd.
North America: Subaru of Indiana Automotive, Inc.

Implementation of Water Risk Assessment

Subaru has a third-party expert implement a water risk assessment* related to water intake and discharge in order to use water resources sustainably. In FYE2017, it was conducted at Gunma Plant and Subaru of Indiana Automotive, Inc. (SIA), which are our bases for automobile manufacturing. In FYE2018, it was also conducted at Utsunomiya Plant, which is our base for aerospace manufacturing.

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 measures.

Assessment Target	Water supply and demand		Water disaster	Vulnerability to water pollution		Comprehensive evaluation
	Current	Future trend		Public health	Ecosystem	
Gunma Plant	B	A	A-	B	A	A-
SIA	B-	B	A	B	A	B+
Utsunomiya Plant	B	A	A+	A-	A+	A-

Gunma Plant and Subaru of Indiana Automotive, Inc.

These sites, which are our bases for automobile manufacturing, 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 taking climate change into consideration. No biodiversity protection areas have been confirmed downstream and a low vulnerability to water pollution has been confirmed.

Utsunomiya Plant

The Utsunomiya Plant, which is our base for aerospace manufacturing, currently has a moderate water supply and demand risk. However, it is predicted that in the future river flow rate increases while the water demand decreases, and thus the water supply and demand risk is expected to improve in the future. Since the site is not in a flood inundation area and a sediment disaster area, a low water disaster risk was confirmed. No biodiversity protection areas and rare aquatic life are confirmed 10 km downstream of the site, and a low ecosystem risk was confirmed.

Going forward, we will review our use and conservation of water resources to meet the local demand 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, National Land Numerical Information: Possible Inundation Area Data/Sediment Disaster Dangerous Site Data (Only for Gunma Plant and Utsunomiya Plant)

Water Reuse

An Initiative to Reuse Water at A Production Base

Subaru introduced a surface treatment facility incorporating an ion exchange/recycled water production system at Utsunomiya Plant, and reprocess wastewater to utilize it as recycled water (pure water). In FYE2018, 42,000 m3 (29%) of the total 146,000 m3 of water used in the surface treatment facility was treated and used as recycled water. Recycled water is used at the plant as washing water in the surface treatment facility.

Recycling Treatment of Surface Treatment Wastewater (Image)

Chromium type surface treatment washing wastewater

↓

Sand filtration tower (Removal of the solid substance)

↓

Activated carbon tower (Removal of the organic matter)

↓

Ion exchange tower (Strong acid anion exchange resin)

Ion exchange tower (Weak base anion exchange resin)

Ion exchange tower (Strong base anion exchange resin)

↓

Recycled water (pure water)

Reuse as surface treatment washing water

Ion exchange/recycled water production system incorporated in the wastewater treatment facility

29% of the total amount of wastewater was recycled

Biodiversity

Our Approach to Biodiversity

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

Subaru launched a working group in FYE March 2015 across all business sites, studied the relationship between our business activities and biodiversity, and then identified potential risks. After identifying the priority issues that we need to tackle first, we have formulated roadmaps and are steadily addressing and promoting them by the entire Subaru Group.

Domestic Initiatives

Subaru Forest Project

Subaru has launched the Subaru Forest Project initiative that directly links to the biodiversity conservation. Among various corporate activities, this is the one that embodies “coexistence with nature” of Subaru Environmental Policies.

Conservation of Forest within the Subaru Test & Development Center Bifuka Proving Ground, Hokkaido

Subaru launched development and conservation activities in June 2017, including tree-planting, forest-thinning and nature conservation programs, in a forest of 115 ha which Subaru Test & Development Center Bifuka Proving Ground owns in its site. Additionally, Subaru are seeking possibilities of forest development and specific activities in collaboration with local communities, such as with Bifuka-cho. In June 2018, we signed an “Agreement on Implementation of Forest Conservation Activities” with Bifuka-cho municipal govermmrnt, Hokkaido, Japan and a signing ceremony was held.

Subaru Test & Development Center Bifuka Proving Ground and its surrounding forests

Outline of the agreement on the Implementation of Forest Conservation Activities

1. Gain Group Forest Certification*1 covering a wide area to exercise sustainable forestry practices for the common good in the aim of preserving the global environment.
2. Utilize the J-Credit Scheme*2 certified by the Japanese government to promote carbon sink measures through appropriate forest management.
3. Collaborate in the annual tree-planting event organized by Bifuka-cho as part of efforts to conserve forests, encourage planting, and promote tree-growing.
4. Support environmental improvements at Matsuyama Marsh*3, a local tourism resource.
5. Supply surplus timber from forest-thinning in forests owned by Subaru for use as fuel in wood-burning biomass boilers.

*1 "Group certification" enables several forest managers to form a group and obtain certification together rather than singly.
*2 "J-Credit System": Under the J-Credit Scheme, the government certifies the amount of greenhouse gas emissions (such as CO_2) reduced or removed by sinks through efforts to introduce energy-saving devices and manage forests, as "credit." Credits created under the scheme can be used for various purposes, such as achieving the targets of low carbon society initiatives and carbon offset efforts.
*3 Matsuyama Marsh: Located 797m above sea level, Matsuyama Marsh is one of Japan's 500 most important wetlands and designated Nature Conservation Area in Hokkaido.

Subaru Friendship Forest Akagi: Gunma Prefectural Forest Park

Subaru obtained the naming rights of the Prefectural Forest Park in Gunma Prefecture where Subaru's automobile production plant is located. The name "Subaru Fureai Forest Akagi" will be used for 5 years from April 2018. Going forward, and will support conservation improvement activities of surrounding prefectural forests and hold and support environmental events in this park.

Use as a place for forest environmental education

Subaru Forest Utsunomiya: Forest Park in Utsunomiya City, Tochigi Prefecture

Part of the municipal forest in the forest park in Utsunomiya City, Tochigi Prefecture, where the Aerospace Company of Subaru is located, is now called "Subaru Forest Utsunomiya," and in collaboration with Utsunomiya City, we will support forest conservation improvement activities there.

Parks are suitable for forest bathing and nature walks

Related information

› Social Contribution

Activities for Preserving Rare Species

In the Tokoji temple in Kitamoto City, Saitama Prefecture, where our Industrial Products Co.,Ltd.is situated, there stands IshitoKabazakura (cherry tree), one of the five major cherry trees in Japan, designated as Japan's natural monument in 1922. Our Industrial Products Co.,Ltd. inherited the descendants of the tree in March 2003, and are carefully nurturing them at our site.

The IshitoKabazakura tree brings forth pretty cherry blossoms every spring.

Initiatives with Careful Consideration to Biodiversity in Green Space

Based on the Ikimono Plus®*, a simple evaluation tool for biodiversity, the boundary areas of the north and east sides of 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®: A simple evaluation tool for biodiversity jointly developed by 8 major construction companies.

Green space with consideration for biodiversity in nature-rich area around Musashino, Tokyo

Flower Distribution Activities Contributing to Biodiversity Consideration

Gunma Plant promotes biodiversity contribution initiatives as part of activities carried out by Subaru Community Exchange Association.

Flower distribution activities

Three times a year, flower seedlings are distributed to member corporations of the Subaru Community Exchange Association. We changed the seedlings to the varieties that contribute to biodiversity in September 2015, and since then each corporation is promoting greening activities in consideration with biodiversity.

Providing varieties in consideration to biodiversity

Elementary school flower bed contest

A flower bed contest is held for the elementary schools in Ota City and Oizumi Town. We have donated flower seedlings that contribute to biodiversity to the elementary schools to create flower beds since September 2015.

In FYE March 2018, 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 flower beds.

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

The Subaru of China Ltd. (SOC) established the “The SUBARU Ecology Conservation Forests Project” at the end of 2012 in collaboration with China Wildlife Conservation Society in China National Forestry Administration.
Since 2013, the SOC has established 31 Subaru Ecology Conservation Forests in nature reserves in 31 provinces in China, in collaboration with China Wildlife Conservation Society. By 2017, it was carried out “31 Forest Star Tours” events that aim at afforestation and rare species protection for five consecutive years. For those events, the SOC has regularly provided vehicles and needed goods. As a result, over 300,000 or so people in total have participated, with touring over 60 nature reserves throughout China making the total traveled distance over 60,000 km. Now, the 31 Forest Star Tours is widely recognized in China.


Plants trees at Kubuchi Desert

In China, the “Forests of China Public Interest Platform” (Forests of China) was established under the leadership of the government in 2014, promoting natural environment protection and forest ecology protection at national level. SOC has partnered with Forests of China in 2015 and has cooperated with their ecological conservation activities. Having been appreciated for its activities, SOC together with Forests of China received a “Letter of Appreciation” from the United Nations, and gained international recognition. In September 2017, the 13th Conference of the Parties (COP 13) to the United Nations Convention to Combat Desertification (UNCCD) was held in Ordos City, Inner Mongolia, and SOC participated in this conference by invitation of Forests of China.

SOC will continue to perform activities in harmony with the local natural environment and will promote initiatives to conserve biodiversity.

› SOC “31 Forest Star Tours”

Initiatives Aiming at Coexistence with Nature

At Subaru of Indiana Automotive, Inc. (SIA), as a result of its ecology protection efforts such as to improve the area of anti-flood ponds within the plant and surrounding greenery to make local wildlife easy to inhabit, the SIA had been certified from the National Wildlife Foundation (NWF) in 2003 as an area that wildlife lives. This was the first certification as a U.S. automobile production plant
Wild Canadian wild geese, herons and American bald eagle the water field installed inside the circulation circuit of the test course on the north side of the factory as feeding and resting grounds and many wild deer inhabit the green area behind the recreation center. SIA still now maintains a factory surrounded by rich nature.

SIA surrounded by rich nature

Supporting Activities to Establish Certified National Wildlife Habitats in the US

Subaru of America, Inc. (SOA) has worked in cooperation with NWF from 2016 to protect wildlife with “Subaru Loves the Earth” as its slogan. As of April 2017, 412 SUBARU dealers across the US have partnered with NWF and are cooperating in activities to establish Certified National Wildlife Habitats at local schools. Participating dealers have donated kit sets including NWF-designated feeding boxes, bird’s nest boxes and bathing places, organic soils, watering tools, shovels, etc. to elementary schools and supported activities. As a result, by April 2017, 421 Certified National Wildlife Habitats were established.

Monarch Butterfly Heroes Kits

In this activity, particular attention is paid to the monarch butterfly. The monarch butterfly is a butterfly mainly inhabiting North America, but in recent years the population has decreased significantly due to the disappearance of their habitats. In cooperation with the NWF protection program “Butterfly Heroes Program”, SUBARU has provided 100,000 Butterfly Heroes Kits for the protection of 400,000 butterflies.

As part of the enlightenment activities, these activities are also communicated from dealers to customers in collaboration with NWF, which has become an opportunity for the customers to have interest in protecting the wildlife.

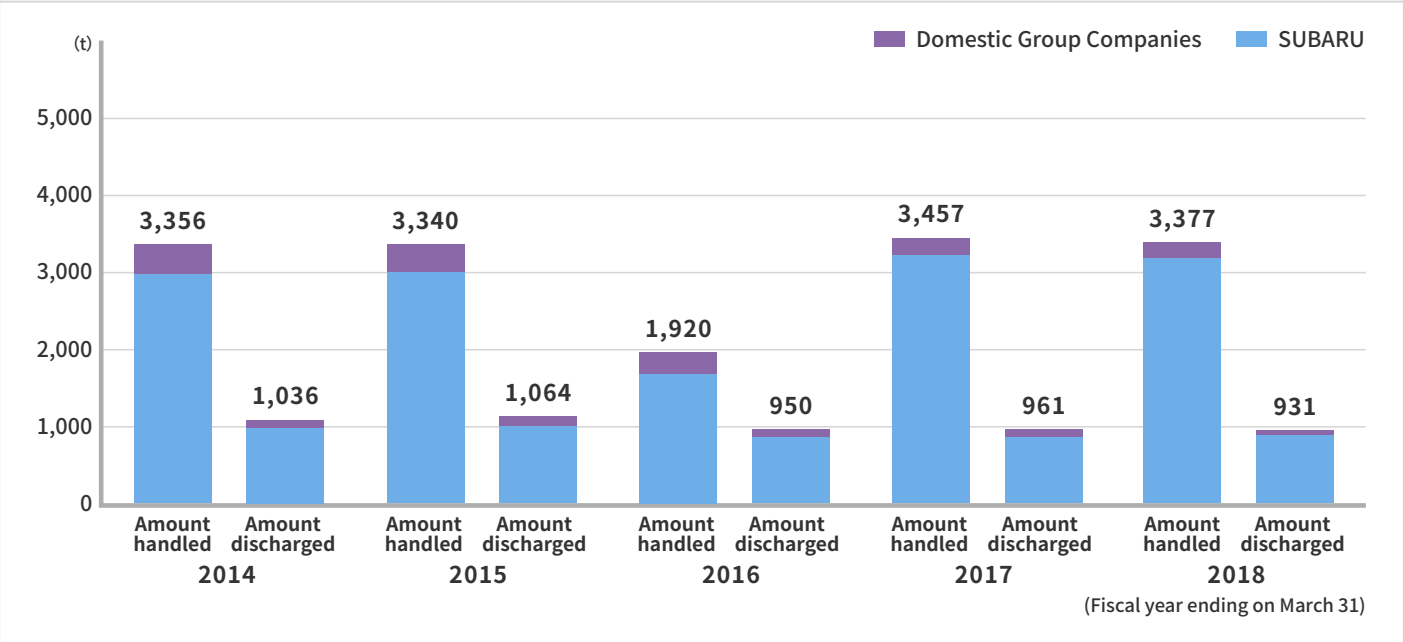
Our Approach to Preventing Pollution

The Subaru Group has “The earth, the sky and nature” are Subaru’s fields of business as its environmental policy and understands that the prevention of pollution of the soil, air, and the like is an important responsibility for the continuation of a sustainable society and our business. Accordingly, we established voluntary action standards above and beyond the legal standards and have dealt appropriately with soil, air, noise, etc.

Reducing Environmentally Hazardous Substances

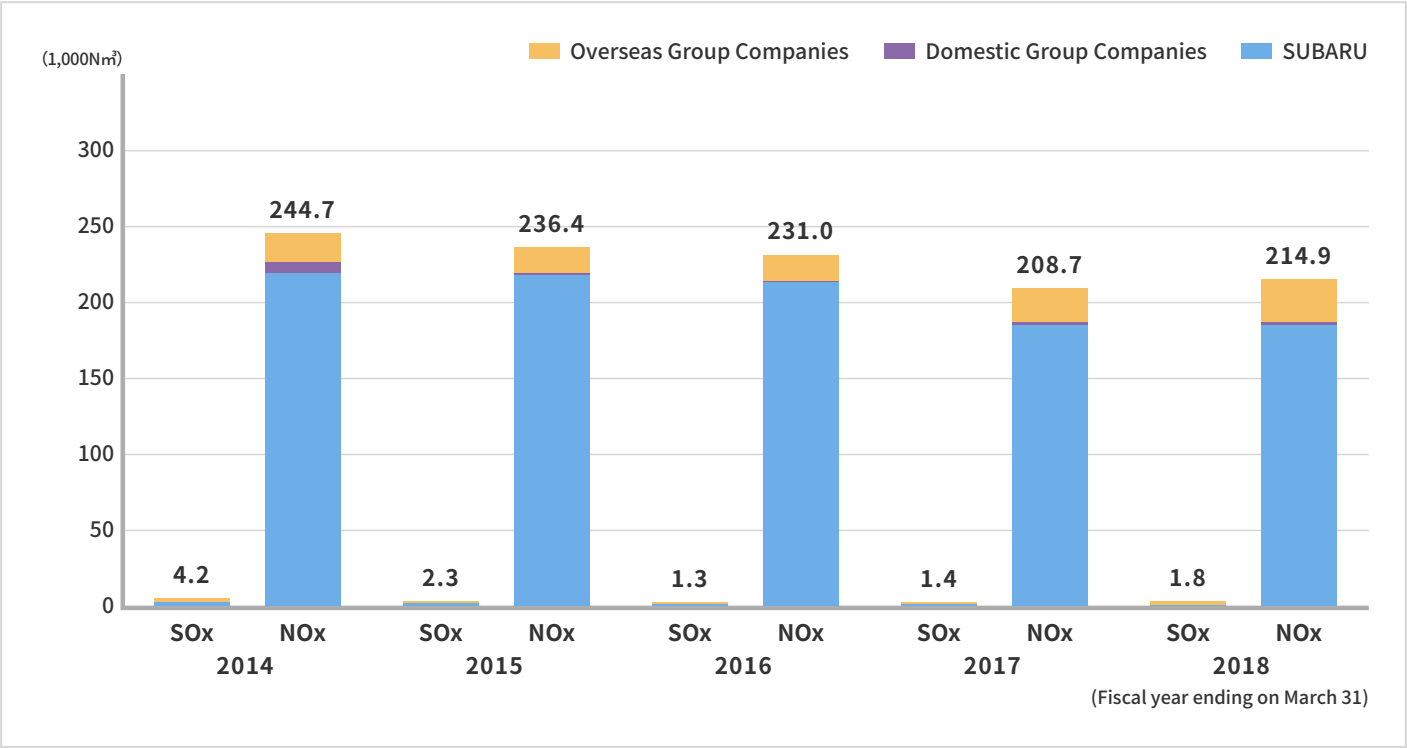
PRTR Substances Handled and Emitted

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



Targeted companies/divisions:
Subaru: Gunma Plant, Tokyo Office, Utsunomiya Plant, Handa Plant, Handa West Plant
Domestic Group Companies: Yusoki Kogyo K.K., Fuji Machinery Co. Ltd., Ichitan Co., Ltd., Kiryu Industrial Co., Ltd., Subaru Logistics Co., Ltd., Industrial Products Co., Ltd.
Note: There has been changes in the amount handled by Subaru Logistics Co., Ltd. between FYE March 2014 and FYE March 2017

NOx and SOx Emissions



Targeted companies/divisions:
Subaru: Gunma Plant, Tokyo Office, Utsunomiya Plant, Handa Plant, Handa West Plant
Domestic Group Companies: Yusoki Kogyo K.K., Fuji Machinery Co., Ltd., Ichitan Co., Ltd., Kiryu Industrial Co., Ltd., Subaru Logistics Co., Ltd., Industrial Products Co., Ltd.
Overseas Group Company: Subaru of Indiana Automotive, Inc.

VOC Emissions

The Amount of volatile organic compounds (VOCs) Subaru emitted from the automobile coating process in FYE March 2018 was 49.4g/m^2, down 46.0% from the FYE March 2001 level.

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

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

Subaru store PCB wastes appropriately according to the law, and plan to complete their disposal by a predetermined time.

Significant Spills

Subaru promptly and appropriately responds in accordance with relevant laws and regulations in the event of significant spill accidents. The number of the accident was zero in FYE March 2018.

Transportation of Hazardous Waste

Subaru had no significant spills and transportation of hazardous wastes specified in the Basel Convention Annex I, II, III, and VIII.

Environmentally-conscious Procurement

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 policies states 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.

Fundamental Procurement Policy

Fundamental Procurement Policy

Subaru has been promoting procurement activities under the following basic policy.

1. Compliance & Green Procurement
   We engage in procurement activities in a way to harmonize man, society and the environment and conduct transactions paying due care to observe legal and societal rules and to protect the environment.
2. Establishment of Best Partnership
   We establish “WIN-WIN” relationships with suppliers through transactions based on mutual trust under the doctrine of good faith.
3. Fair and Open Way of Selecting Suppliers
   In selecting suppliers, the door is wide-open to all firms, domestic and overseas, for fair and equitable business to procure goods and services most excellent from six perspectives: quality, cost, delivery, technical development, management and environment (QCDDME).

Green Procurement

Initiatives in Subaru

Subaru 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. In addition, we recommend new business partners to acquire ISO14001. Currently, all of our Tier1 business partners have already acquired ISO14001 certification. In case our new business partners have difficulty acquiring ISO14001, we review their compliance status by having them submit reports on their voluntary assessment based on environmental guidelines, while supporting them with the acquisition of Eco Action 21.

Related information

› Subaru Green Procurement Guidelines PDF/913KB

Management and Reduction of Environmentally Hazardous Substances Contained in Parts

Subaru complies with laws and regulations concerning substances of concern in each country, including the REACH regulation and ELV Directive. 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 with Consideration for Biodiversity

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

Environmental Management System Request to Business Partners

Subaru 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 acquire Eco Action 21 or to pass 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.

Environmental Communication

Subaru values the relations with all our stakeholders, and to become a trustworthy corporation that brings peace of mind to our stakeholders, we widely disseminate examples of our environmental conservation activities, environmental data, etc. in an easy-to-understand manner through various media, such as CSR reports and our website.

Exhibit at "EcoPro 2017-International Exhibition on Environment and Energy"

"EcoPro 2017-International Exhibition on Environment and Energy," the largest environmental exhibition in Japan was held in December 2017. Our exhibition booth featured the Subaru Forest made of white birch trees in Bifuka Town, Hokkaido, where we have the Subaru Test & Development Center Bifuka Proving Ground. We introduced Subaru Group's environmental initiatives, and more than 6,000 people visited the SUBARU booth in three days. Additionally, as an effort to reduce CO_2 emissions, we participated in J-Credit Scheme for disaster area reconstruction support and had offset CO_2 emissions by 12.0 t-CO_2 resulting from exhibition.

Our booth made of white birch trees of Bifuka Town where Subaru Forest Project was launched

Carbon Offset Certificate

Communication with Local Residents

At the Gunma Plant, we communicate daily with people in the community who live near the factories, dormitories, and corporate housing. Representatives of the factories visit local government representatives every month and exchange information about circumstance in the area and requests to our factories while introducing Subaru events.

In addition, once a year we open our factories for visits and explain the status of the Gunma Plant and our environmental initiatives so that visitors gain deeper understand of our activities.

Checking the Perimeter of our Factories for Odor, etc.

At the Gunma Plant, we check the perimeter of the factories on a daily basis because as a rule of thumb, the levels of odor, noise and the like are greatly different between the levels shown by the measuring instrument and how people actually feel. In addition, by setting up the consultation desk to hold a dialogue with local government representatives and holding factory tours, we closely communicate with neighboring residents, and improve production facilities as appropriate, based on their valuable feedback.

Factory Tour of the Gunma Plant

At the Gunma Plant, we invite elementary school children to utilize factory tours for their field trips. In FYE2018, 91,694 people, including the public, visited our factory. Also, in the SUBARU Visitor Center, we exhibit what is being recycled and what comes out of the recycling in the panel on the wall, which helps visitors to learn about recycling of automobiles.

Area to learn about automobile recycling

Eco-Science Fair and Go Green Event 2017

The Fair and Go Green event is a single event of which Subaru of Indiana Automotive, Inc.（SIA） was the title sponsor. The event was held in April, 2017 at the Indiana State Museum, which is located in downtown Indianapolis. About 100 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 the sponsorship.

SIA booth introducing recycling activities

Environmental Data Performance*

(Fiscal year ending on March 31, 2018)

In addition to complying with the laws and regulations, Subaru sets and manages voluntary standards that are 20% higher than the air, water quality, noise and vibration legal standards.

* Data are measured values of major regulated substances/facilities in each plant and office.

Atmosphere

(Air Pollution Control Act, Prefectural Regulations)

Automotive Business

Gunma Plant

Main Plant

Substance	Equipment/facility	Unit	Regulation	Voluntary standard	Maximum	Average
NOx	Paint drying oven	ppm	230	184	53	32
Particulate matter	Paint drying oven	g/Nm^3	0.2	0.16	0.003	0.002
VOC	Paint booth, etc.	ppm-C	700	-	642	239

Yajima Plant

Substance	Equipment/facility	Unit	Regulation	Voluntary standard	Maximum	Average
NOx	Paint drying oven	ppm	230	184	50	30
Particulate matter	Paint drying oven	g/Nm^3	0.2	0.16	0.003	0.002
VOC	Paint booth, etc.	ppm-C	700	-	434	50
VOC	Paint booth, etc.	ppm-C	400	-	319	102

Oizumi Plant

Substance	Equipment/facility	Unit	Regulation	Voluntary standard	Maximum	Average
NOx	Aluminum melting oven	ppm	180	144	46	38
Particulate matter	Aluminum melting oven	g/Nm^3	0.3	0.24	0.010	0.007

Ota North Plant

There is no applicable equipment/facility.

Tokyo Office

There is no applicable equipment/facility.

Aerospace Company

Utsunomiya Plant

Main Plant

Substance	Equipment/facility	Unit	Regulation	Voluntary standard	Maximum	Average
NOx	cogeneration	ppm	600	480	94	88
NOx	Drying oven	g/Nm^3	230	184	<100	<100
Particulate matter	Drying oven	ppm-C	0.2	0.16	<0.001	<0.001

South Plant and 2nd South Plant

There is no applicable equipment/facility.

Handa Plant

Substance	Equipment/facility	Unit	Regulation	Voluntary standard	Maximum	Average
SOx	2 ton boiler	ppm	1.5	1.2	0.02	<0.02
NOx	2 ton boiler	ppm	180	144	110	37
Particulate matter	2 ton boiler	g/Nm^3	0.1	0.08	<0.002	<0.002

Handa West Plant

Substance	Equipment/facility	Unit	Regulation	Voluntary standard	Maximum	Average
SOx	2 ton boiler	ppm	1.5	1.2	<0.02	<0.02
NOx	2 ton boiler	ppm	180	144	55	33
Particulate matter	2 ton boiler	g/Nm^3	0.1	0.08	<0.002	<0.002

Water Quality

(Water Pollution Prevention Act, Sewerage Act, Prefectural/Municipal Regulations)

Automotive Business

Gunma Plant

Main Plant

Item	Unit	Regulation (Prefectural regulations)	Voluntary standard	Maximum	Minimum	Average
Concentration of hydrogen ion (pH)	-	5.8~8.6	6.1~8.3	7.7	7.3	7.5
Biochemical oxygen demand (BOD)	mg/ℓ	25	20	5.3	1.1	3.2
Suspended solids (SS)	mg/ℓ	50	40	2.8	1.0	2.0
n-hexane extract content (Mineral oil content)	mg/ℓ	5	4	<1.0	<1.0	<1.0
n-hexane extract content (Animal and plant oils and fats content)	mg/ℓ	30	24	<1.0	<1.0	<1.0
Fluorine and its compounds	mg/ℓ	8	6.4	2.0	0.2	0.8
Zinc content	mg/ℓ	2	1.6	0.703	0.081	0.317
Soluble iron content	mg/ℓ	10	8	<0.1	<0.1	<0.1
Soluble manganese content	mg/ℓ	10	8	<0.1	<0.1	<0.1
Phosphorus content	mg/ℓ	16 (8)	6.4	1.1	0.2	0.6
Nitrogen content	mg/ℓ	120 (60)	48	6.5	2.3	4.4

[Effluent is discharged into public rivers. Measurement was conducted at two drainage outlets (New No.2 and No.5 waterways). Values for total phosphorus content and total nitrogen content are daily averages.]

Yajima Plant

Item	Unit	Regulation (Prefectural regulations)	Voluntary standard	Maximum	Minimum	Average
Concentration of hydrogen ion (pH)	-	5.8～8.6	6.1～8.3	7.4	7.3	7.4
Biochemical oxygen demand (BOD)	mg/ℓ	25	20	7.0	2.9	5.0
Suspended solids (SS)	mg/ℓ	50	40	5.2	2.4	3.8
n-hexane extract content (Mineral oil content)	mg/ℓ	5	4	＜1.0	＜1.0	＜1.0
n-hexane extract content (Animal and plant oils and fats content)	mg/ℓ	30	24	＜1.0	＜1.0	＜1.0
Fluorine and its compounds	mg/ℓ	8	6.4	1.3	0.9	1.1
Zinc content	mg/ℓ	2	1.6	2.54	0.215	1.38
Soluble iron content	mg/ℓ	10	8	0.1	0.1	0.1
Soluble manganese content	mg/ℓ	10	8	0.4	0.2	0.3
Phosphorus content	mg/ℓ	16 (8)	6.4	0.5	0.3	0.4
Nitrogen content	mg/ℓ	120 (60)	48	5.9	3.2	4.6

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

Oizumi Plant

Item	Unit	Regulation (Prefectural regulations)	Voluntary standard	Maximum	Minimum	Average
Concentration of hydrogen ion (pH)	-	5.8～8.6	6.1～8.3	7.9	7.1	7.4
Biochemical oxygen demand (BOD)	mg/ℓ	10	8	4.6	1.0	2.4
Suspended solids (SS)	mg/ℓ	10	8	6.0	1.0	4.2
n-hexane extract content (Mineral oil content)	mg/ℓ	3	2.4	＜1.0	＜1.0	＜1.0
n-hexane extract content (Animal and plant oils and fats content)	mg/ℓ	30	24	＜1.0	＜1.0	＜1.0
Fluorine and its compounds	mg/ℓ	8	6.4	＜0.2	＜0.2	＜0.2
Zinc content	mg/ℓ	2	1.6	0.233	0.086	0.140
Soluble iron content	mg/ℓ	5	4	＜0.1	＜0.1	＜0.1
Soluble manganese content	mg/ℓ	5	4	＜0.1	＜0.1	＜0.1
Phosphorus content	mg/ℓ	16 (8)	6.4	＜0.1	＜0.1	＜0.1
Nitrogen content	mg/ℓ	120 (60)	48	13.6	2.8	8.2

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

Ota North Plant

Item	Unit	Regulation (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)	mg/ℓ	25	20	‹1.0	<1.0	<1.0
Suspended solids (SS)	mg/ℓ	50	40	3.2	3.2	3.2
n-hexane extract content (Mineral oil content)	mg/ℓ	5	4	<1.0	<1.0	<1.0
n-hexane extract content (Animal and plant oils and fats content)	mg/ℓ	30	24	<1.0	<1.0	<1.0
Fluorine and its compounds	mg/ℓ	8	6.4	<0.2	<0.2	<0.2
Zinc content	mg/ℓ	2	1.6	0.04	0.027	0.034
Soluble iron content	mg/ℓ	10	8	0.2	0.1	0.2
Soluble manganese content	mg/ℓ	10	8	0.2	<0.1	0.2
Phosphorus content	mg/ℓ	16 (8)	6.4	<0.1	<0.1	<0.1
Nitrogen content	mg/ℓ	120 (60)	48	1.6	1.0	1.3

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

Tokyo Office

Item	Unit	Regulation*	Voluntary standard	Maximum	Minimum	Average
Concentration of hydrogen ion (pH)	-	5.7～8.7	5.9～8.4	8.4	8.0	8.3
Biochemical oxygen demand (BOD)	mg/ℓ	300	240	230	43	126
Suspended solids (SS)	mg/ℓ	300	240	240	45	102
n-hexane extract content (Mineral oil content)	mg/ℓ	5	4	<4.0	<4.0	<4.0
n-hexane extract content (Animal and plant oils and fats content)	mg/ℓ	30	24	17	<4.0	7
Total phosphorus	mg/ℓ	16	12.8	8.7	3.1	4.9
Total nitrogen	mg/ℓ	120	96	79.9	21	40.5
Soluble manganese	mg/ℓ	10	8	0.02	0.01	0.01
Cyanogen	mg/ℓ	1	0.8	<0.01	<0.01	<0.01

[Effluent is discharged into public sewer. Unit: mg/L except for pH.]

* Water Pollution Prevention Act and Mitaka City Sewer Regulation.

Aerospace Company

Utsunomiya Plant

Main Plant

Item	Unit	Regulation	Voluntary standard	Maximum	Minimum	Average
Concentration of hydrogen ion (pH)	-	5～9	5.4～8.6	8.5	6.3	7.1
Suspended solids (SS)	mg/ℓ	600	480	407	<1.0	64
Biochemical oxygen demand (BOD)	mg/ℓ	600	480	355	0.7	64
n-hexane extract content (Mineral oil content)	mg/ℓ	5	4	<1.0	<1.0	<1.0
n-hexane extract content (Animal and plant oils and fats content)	mg/ℓ	30	24	20.3	<1.0	8.4
Fluorine compounds	mg/ℓ	8	6.4	1.5	<0.2	0.3
Cyanogen	mg/ℓ	1	0.8	<0.1	<0.1	<0.1
Cadmium	mg/ℓ	0.03	0.024	0.007	<0.003	0.004
Total chromium	mg/ℓ	2	1.6	0.36	<0.01	0.01
Hexavalent chromium	mg/ℓ	0.1	0.08	<0.02	<0.02	<0.02

[Effluent is discharged into public sewer.]

Item	Unit	Regulation	Voluntary standard	Maximum	Minimum	Average
Concentration of hydrogen ion (pH)	-	5.8～8.6	6.0～8.3	7.9	6.9	7.4
Suspended solids (SS)	mg/ℓ	50	40	<1.0	<1.0	<1.0
Biochemical oxygen demand (BOD)	mg/ℓ	30	24	11.8	<0.5	1.7
n-hexane extract content (Mineral oil content)	mg/ℓ	5	4	<1.0	<1.0	<1.0
n-hexane extract content (Animal and plant oils and fats content)	mg/ℓ	30	24	<1.0	<1.0	<1.0
Cyanogen	mg/ℓ	1	0.8	<0.1	<0.1	<0.1
Cadmium	mg/ℓ	0.03	0.024	<0.003	<0.003	<0.003
Total chromium	mg/ℓ	2	1.6	<0.01	<0.01	<0.01
Hexavalent chromium	mg/ℓ	0.5	0.4	<0.02	<0.02	<0.02

[Effluent is discharged into public rivers.]

South Plant

Item	Unit	Regulation	Voluntary standard	Maximum	Minimum	Average
Concentration of hydrogen ion (pH)	-	5～9	5.4～8.6	8.6	6.8	7.5
Suspended solids (SS)	mg/ℓ	600	480	151	2.4	45
Biochemical oxygen demand (BOD)	mg/ℓ	600	480	412	5.1	102
n-hexane extract content (Mineral oil content)	mg/ℓ	5	4	<1.0	<1.0	<1.0
n-hexane extract content (Animal and plant oils and fats content)	mg/ℓ	30	24	17.1	<1.0	6.9
Cyanogen	mg/ℓ	1	0.8	<0.1	<0.1	<0.1
Cadmium	mg/ℓ	0.03	0.024	<0.003	<0.003	<0.003
Total chromium	mg/ℓ	2	1.6	<0.01	<0.01	<0.01
Hexavalent chromium	mg/ℓ	0.1	0.08	<0.02	<0.02	<0.02

[Effluent is discharged into public sewer.]

South Plant

Item	Unit	Regulation	Voluntary standard	Maximum	Minimum	Average
Concentration of hydrogen ion (pH)	-	5.8～8.6	6.0～8.3	8.1	6.8	7.2
Suspended solids (SS)	mg/ℓ	50	40	1.6	<1.0	1.3
Biochemical oxygen demand (BOD)	mg/ℓ	30	24	16.7	<0.5	2.6
n-hexane extract content (Mineral oil content)	mg/ℓ	5	4	<1.0	<1.0	<1.0
Cyanogen	mg/ℓ	1	0.8	<0.1	<0.1	<0.1
Cadmium	mg/ℓ	0.03	0.024	<0.003	<0.003	<0.003
Total chromium	mg/ℓ	2	1.6	<0.01	<0.01	<0.01
Hexavalent chromium	mg/ℓ	0.5	0.4	<0.02	<0.02	<0.02

[Effluent is discharged into public rivers.]

2nd South Plant

Item	Unit	Regulation	Voluntary standard	Maximum	Minimum	Average
Concentration of hydrogen ion (pH)	-	5～9	5.4～8.6	7.6	7	7.3
Suspended solids (SS)	mg/ℓ	600	480	98	<1.0	19
Biochemical oxygen demand (BOD)	mg/ℓ	600	480	100	1.2	22
n-hexane extract content (Mineral oil content)	mg/ℓ	5	4	<1.0	<1.0	<1.0
n-hexane extract content (Animal and plant oils and fats content)	mg/ℓ	30	24	5.1	<1.0	1.5
Fluorine compounds	mg/ℓ	8	6.4	1.7	<0.2	0.5
Cyanogen	mg/ℓ	1	0.8	<0.1	<0.1	<0.1
Cadmium	mg/ℓ	0.03	0.024	<0.003	<0.003	<0.003
Total chromium	mg/ℓ	2	1.6	1.0	<0.01	0.20
Hexavalent chromium	mg/ℓ	0.1	0.08	<0.02	<0.02	<0.02

[Effluent is discharged into public sewer.]

2nd South Plant

Item	Unit	Regulation	Voluntary standard	Maximum	Minimum	Average
Concentration of hydrogen ion (pH)	-	5.8～8.6	6.0～8.3	7.5	6.5	7.1
Suspended solids (SS)	mg/ℓ	50	40	5.2	<1.0	2.7
Biochemical oxygen demand (BOD)	mg/ℓ	30	24	3.7	0.6	1.9
n-hexane extract content (Mineral oil content)	mg/ℓ	5	4	<1.0	<1.0	<1.0
Cyanogen	mg/ℓ	1	0.8	<0.1	<0.1	<0.1
Cadmium	mg/ℓ	0.03	0.024	<0.003	<0.003	<0.003
Total chromium	mg/ℓ	2	1.6	<0.01	<0.01	<0.01
Hexavalent chromium	mg/ℓ	0.5	0.4	<0.02	<0.02	<0.02

[Effluent is discharged into public rivers.]

Handa Plant

Item	Unit	Regulation	Voluntary standard	Maximum	Minimum	Average
Concentration of hydrogen ion (pH)	-	6～8	6.2～7.8	7.8	6.8	7.5
Suspended solids (SS)	mg/ℓ	25	20	6.0	<1.0	1.8
Biochemical oxygen demand (BOD)	mg/ℓ	25	20	13.0	1.0	2.8
Chemical oxygen demand (COD)	mg/ℓ	25	20	15.0	1.3	5.6
n-hexane extract content (Mineral oil content)	mg/ℓ	5	4	<0.5	<0.5	<0.5
Cyanogen	mg/ℓ	1	0.8	<0.1	<0.1	<0.1
Cadmium	mg/ℓ	0.03	0.024	<0.005	<0.005	<0.005
Total chromium	mg/ℓ	2	1.6	<0.04	<0.04	<0.04
Hexavalent chromium	mg/ℓ	0.5	0.4	<0.04	<0.04	<0.04

Handa West Plant

Item	Unit	Regulation	Voluntary standard	Maximum	Minimum	Average
Concentration of hydrogen ion (pH)	-	6～8	6.2～7.8	7.7	7.0	7.4
Suspended solids (SS)	mg/ℓ	15	12	8.0	2.0	3.8
Biochemical oxygen demand (BOD)	mg/ℓ	15	12	13.0	3.0	6.4
Chemical oxygen demand (COD)	mg/ℓ	15	12	12.0	4.6	7.8
n-hexane extract content (Mineral oil content)	mg/ℓ	2	1.6	<0.5	<0.5	<0.5
Cyanogen	mg/ℓ	0.5	0.4	<0.1	<0.1	<0.1
Cadmium	mg/ℓ	0.03	0.024	<0.005	<0.005	<0.005
Total chromium	mg/ℓ	0.2	0.16	<0.04	<0.04	<0.04
Hexavalent chromium	mg/ℓ	0.3	0.24	<0.04	<0.04	<0.04

Noise

(Noise Regulation Act, Prefectural Regulations and Agreements)

Automotive Business

Gunma Plant

Measurement Location	Unit	Regulation* (Night)	Voluntary standard	Measurement sites	Measured value
Main Plant	dB (A)	55	54	20	37～54
Yajima Plant	dB (A)	55	54	20	43～53
Oizumi Plant	dB (A)	50	49	20	40～50

* Gunma prefectural regulations, and Ota-Oizumi pollution prevention agreements.

Aerospace Company

Utsunomiya Plant

Measurement Location	Unit	Regulation (Night)	Voluntary standard	Measurement sites	Maximum
Main Plant	dB (A)	60	58	8	58
South Plant	dB (A)	50	48	3	38
2nd South Plant	dB (A)	50	48	3	46

Handa Plant

Measurement Location	Unit	Regulation (Night)	Voluntary standard	Measurement sites	Maximum
Handa Plant	dB (A)	65	63	3	51

Handa West Plant

Measurement Location	Unit	Regulation (Night)	Voluntary standard	Measurement sites	Maximum
Handa West Plant	dB (A)	65	63	6	58

Vibration

(Vibration Regulation Act, Prefectural Regulations and Agreements)

Automotive Business

Gunma Plant

Measurement Location	Unit	Regulation (Night)	Voluntary standard	Measurement sites	Measured value
Main Plant	dB (A)	65	64	20	18.5～38.2
Yajima Plant	dB (A)	65	64	20	26.1～41.4
Oizumi Plant	dB (A)	60	59	20	20.1～38.7

Aerospace Company

Utsunomiya Plant

Measurement Location	Unit	Regulation (Night)	Voluntary standard	Measurement sites	Maximum
Main Plant	dB (Z)	65	63	8	34
South Plant	dB (Z)	60	58	2	Less than 30
2nd South Plant	dB (Z)	60	58	3	Less than 30

Handa Plant and Handa West Plant

Measurement Location	Unit	Regulation (Night)	Voluntary standard	Measurement sites	Maximum
Handa Plant	dB (Z)	70	68	3	Less than 30
Handa West Plant	dB (Z)	70	68	5	Less than 30

Odor

(Offensive Odor Control Act)

Automotive Business

Gunma Plant

[Odor index]

Measurement Location	Regulation	Voluntary standard	Measurement sites	Measured value
Main Plant	21	20	6	Less than 10
Yajima Plant	21	20	6	Less than 10

PRTR Substances Handled and Emitted

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

Automotive Business

Gunma Plant (Main Plant, Yajima Plant, Oizumi Plant, Subaru Test & Development Center at Sano)

[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	184,364	0	1,600	0	0	182,764	0	0
Ethylbenzene	454,149	244,921	0	0	0	18,254	52,216	138,758
Xylene	732,121	337,354	0	0	0	182,700	120,503	91,564
1,2,4-Trimethylbenzene	253,174	1,321	0	0	0	241,678	10,175	0
1,3,5-Trimethylbenzene	39,083	21,339	0	0	0	2,413	8,443	6,887
Toluene	788,133	259,217	0	0	0	365,866	74,498	88,552
Naphthalene	12,802	8,453	0	0	0	0	3,010	1,339
Nickel compounds	8,449	0	228	0	3,995	4,226	0	0
Bis (2-ethylhexyl) phthalate	10,404	0	0	0	209	10,195	0	0
Hydrogen fluoride and its water-soluble salts	10,100	0	9,191	0	0	909	0	0
N-hexane	123,998	667	0	0	0	123,331	0	0
Benzene	22,108	126	0	0	0	21,982	0	0
Formaldehyde	19,214	9,801	0	0	1,995	0	4,259	3,159
Manganese and compounds	24,048	0	634	0	10,948	12,466	0	0
Dioxins Unit: mg-TEQ/year	0	0.0547	0	0	0.000	0	0	0
Cumener	13,917	8,360	0	0	0	0	3,375	2,182
Methylnaphthalene	15,849	73	0	0	0	15,776	0	0
Total	**2,711,912**	**891,632**	**11,653**	**0**	**17,147**	**1,182,560**	**276,479**	**332,441**
		903,285						

Tokyo Office

[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	15,839	0.17	0	0	0	15,839	0	0
Ethylene glycol	2,002	0.00	0	0	0	2,002	0	0
Xylene	70,788	0.67	0	0	0	70,787	0	0
1,3,5-Trimethylbenzene	11,326	0.03	0	0	0	11,326	0	0
Toluene	262,414	8.60	0	0	0	262,405	0	0
1,2,4-Trimethylbenzene	57,408	0.20	0	0	0	57,408	0	0
Benzene	8,684	1.01	0	0	0	8,683	0	0
n-Hexane	27,157	6.90	0	0	0	27,150	0	0
Total	**455,618**	**17.58**	**0**	**0**	**0**	**455,600**	**0**	**0**
		17.58						

Aerospace Company

[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
Bisphenol-A	2,656	0	0	0	1,062	1,594	0	0
Xylene	3,968	3,003	0	0	965	0	0	0
Hexavalent chromium compound	1,679	0	0	0	533	353	793	0
Toluene	24,989	19,500	0	0	5,489	0	0	0
Manganese and compounds	955	0	0	0	382	573	0	0
1,3-Dioxolan	4,480	3,494	0	0	986	0	0	0
Total	**38,727**	**25,997**	**0**	**0**	**9,417**	**2,520**	**793**	**0**