The Environment

Recognizing environmental issues as important, the Yamaha Group is committed to continuing its contribution to the realization of a better global environment based on its Yamaha Group Environmental Policy.

Yamaha is engaged in initiatives through its business activities, products, and services to respond to shared global issues, such as climate change, biodiversity, and the promotion of recycling. At the same time, Yamaha is involved in environmental conservation activities, such as the reduction of emissions of chemical substances, prevention of leaking of hazardous materials, the appropriate use of timber, forest preservation, and other activities that contribute to preserving the environment.

Environmental Management

Environmental Policy

Recognizing environmental issues as important management issues, the Yamaha Group is earnest in its efforts to make ongoing contributions to the realization of a better global environment based on the Yamaha Group Environmental Policy.

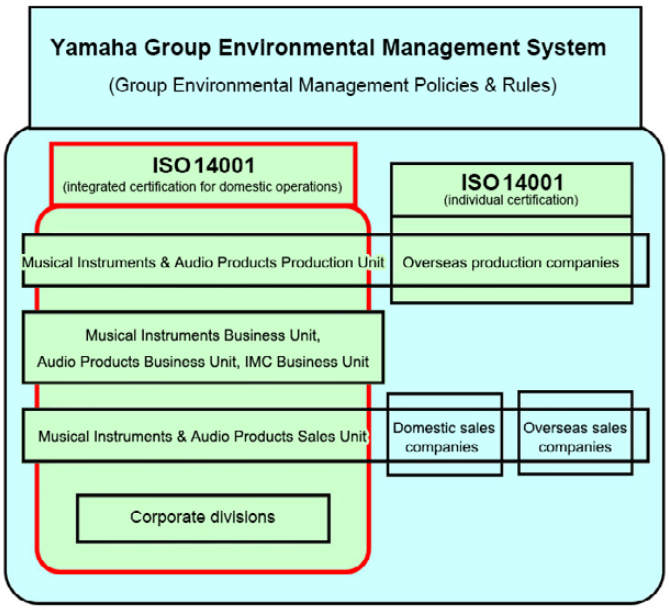
The Yamaha Group is engaged in initiatives through its business activities, products, and services to respond to shared global issues pertaining to matters such as climate change, biodiversity, and the promotion of recycling. At the same time, the Yamaha Group is engaged in environmental preservation activities including the reduction of emissions of chemical substances, the prevention of leaks of hazardous substances (to address water-related risks to prevent contamination of surface water, underground water, and soil), the appropriate use of timber, forest preservation for the purpose of protecting biodiversity, and other activities that contribute to preserving the environment.

Furthermore, such environmental issues are being addressed through their incorporation in the medium-term management plan and the action plan of relevant business divisions. The Yamaha Group Environmental Policy is approved by the managing executive officer responsible for environmental issues of Yamaha Corporation.

≫ Yamaha Group Environmental Policy

Environmental Management Systems

The Yamaha Group has created a system for promoting global environmental preservation activities that is overseen by the managing executive officer responsible for environmental issues of Yamaha Corporation. In January 2021, the Climate Change Working Group, the Resource Circulation Working Group, and the Procurement Working Group were established under the Sustainability Committee, which is chaired by the president. These working groups engage in discussions regarding important sustainability issues, such as climate change response and timber procurement, and report on these matters to the Board of Directors. Based on the Group Environmental Management Policies & Rules, we have established an integrated environmental management system for all domestic business sites while overseas sites develop their environmental management systems. These systems entail the formulation of business site-specific environmental goals along with priority measures and action plans for accomplishing these goals, which shape actual initiatives. The status of these initiatives and the issues faced are confirmed through internal environmental audits to drive a process of ongoing improvement and enhancement of these initiatives. The Environmental Division of Yamaha Corporation is responsible for supporting and leading Groupwide environmental activities. To this end, the division gathers information on regulatory and social trends related to the environment, enacts Groupwide policies and rules, monitors and audits activities, and provides technical support for introducing environmental facilities and performs environmental measurements.



Acquisition of ISO 14001 Certification

The Yamaha Group has acquired certification under ISO 14001, an international standard for environmental management systems. As of March 31, 2020, Yamaha Corporation and 22 domestic and overseas Group companies had acquired certification. These companies account for approximately 95% of the Yamaha Group's greenhouse gas emissions (Scope 1 and 2).*1 The Yamaha Group believes that the current scope of certification acquisition is sufficient considering its own environmental load, laws and regulations, and other matters. Going forward, this scope will be expanded as necessary when constructing business sites that may have a large impact on the environment.

In 2017, Yamaha Corporation acquired integrated certification in Japan based on the revised standard implemented in September 2015.

*1 New production sites (Yamaha Music India Pvt. Ltd. and PT. Yamaha Musical Products Asia) have not acquired certification at this point in time.

ISO 14001-Certified Sites

Yamaha Corporation Business Sites in Japan

Site	Acquisition Date	Integrated Certification Acquisition Date
Kakegawa Factory	November 1998	November 2010
Toyooka Factory (including Yamaha Hi-Tech Design Corporation)	June 2000	November 2010
Headquarters area	February 2001	November 2010

Domestic Group Manufacturing Companies

Site	Acquisition Date	Integrated Certification Acquisition Date
Yamaha Fine Technologies Co., Ltd.	March 2001	November 2010
Sakuraba Mokuzai Co., Ltd.	September 2002	November 2010
Yamaha Music Manufacturing Japan Corporation	August 2014	August 2014
Kitami Mokuzai Co., Ltd.	August 2014	August 2014

Resort Facilities

Site	Acquisition Date	Integrated Certification Acquisition Date
Yamaha Resort Inc.	November 2001	August 2011

Overseas Group Manufacturing Companies

Site	Acquisition Date
Yamaha Electronics Manufacturing (M) Sdn. Bhd.	December 1998
Tianjin Yamaha Electronic Musical Instruments, Inc.	December 1999
PT. Yamaha Musical Products Indonesia	January 2001
PT. Yamaha Music Manufacturing Indonesia	December 2001
PT. Yamaha Indonesia	May 2002
PT. Yamaha Music Manufacturing Asia	July 2002
PT. Yamaha Electronics Manufacturing Indonesia	January 2003
Yamaha Electronics (Suzhou) Co., Ltd.	March 2004
Hangzhou Yamaha Musical Instruments Co., Ltd.	May 2012
Xiaoshan Yamaha Musical Instruments Co., Ltd.	March 2013

Environmental Management Promotion Initiatives

Environmental Accounting

Yamaha Corporation began conducting environmental accounting in fiscal 2000 as a means of quantitatively evaluating the effectiveness of its environmental initiatives. These environmental accounting practices are also currently being used at the Yamaha Group headquarters, domestic production bases and resort facilities, and production bases in Indonesia as well as at production bases in China and Malaysia, where environmental accounting was commenced in fiscal 2019.

For data related to environmental accounting, please refer to the Environmental Data page.

Environmental Data

Environmental Education and Training

The Yamaha Group offers a variety of training and education opportunities to employees in an effort to raise their knowledge and skills with respect to the environment. Such opportunities include the general education provided to all employees, specialty education for instructor candidates at production sites, and environmental facilities education and training for individuals in charge of environmental facilities.*2 Training is performed throughout the year as needed for specific business sites or processes.

*2 Environmental facilities are sites with the potential of polluting the environment should an accident occur. Lists of environmental facilities are compiled at each business site, and facilities are managed accordingly.

Specialized Training for Environmental Preservation Staff

The Yamaha Group has established specialized training curricula for employees engaged in areas that require specialized knowledge, including personnel involved in waste management, wastewater treatment facility operation and management, and chemical substance handling. Specialized training sessions are conducted after defining and compiling lists of the skills required for processes that have a particularly large impact on the environment and examining the related educational needs. Furthermore, staff of the Environmental Division of Yamaha Corporation perform follow-up monitoring regarding the education of employees responsible for the aforementioned tasks at overseas factories. Wastewater managers at Xiaoshan Yamaha Musical Instruments Co., Ltd., in China have received such specialized training in Japan.

In addition, we conduct education related to chemical substance management and the prevention of accidents such as leaks of environmental pollutants based on the Yamaha Group Chemical Substances Usage Standard and the Yamaha Group Environmental Equipment Standards. Emergency response drills are also performed.

Furthermore, Yamaha's technical academy program includes the Eco-design Course for product planners, developers, and designers through which education on eco-friendliness in products is provided.

Internal Environmental Auditor Training

Training for the personnel that carry out activities for self-regulating environmental preservation measures is imperative to improving the operation of our environmental management system. The Yamaha Group invites lecturers from external organizations and holds annual seminars to train internal environmental auditors as an initiative to enhance our environmental preservation activities.

At business sites in Japan, an aggregate total of 1,175 participants have obtained internal environmental auditor qualification, and of these, 327 employees are still currently employed by the Group, which represents approximately 6% of employees at relevant business sites.

We also hold an Internal Environmental Auditor Brush-Up Seminar to improve the skills of staff members responsible for internal audits in the given fiscal year.

Promotion of Eco-Conscious Activities by Employees

The Yamaha Group provides support and training to improve the environmental awareness of all employees and to promote eco-conscious activities by employees in their daily lives. Environment Month and Environment Day campaigns are held every year in June, and these campaigns are used as opportunities for advancing environmental preservation and education activities through joint labor–management efforts.

Workplace Environmental Education Activities

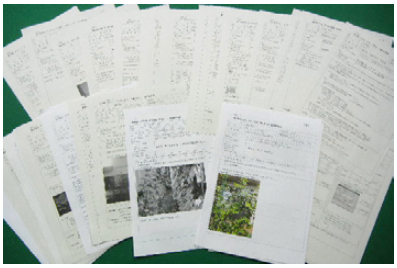
To foster environmental awareness among employees, the Yamaha Group implements “Cool Biz” and “Warm Biz” programs aimed at cutting back on unnecessary air-conditioning use by encouraging employees to wear cooler attire in the summer and dress warmer in the winter. In addition, environmental education posters are displayed. The Group also endorses the FUJINOKUNI COOL Challenge, a citizen-driven global warming prevention campaign implemented in Shizuoka Prefecture, and encourages employees to prevent food loss by eating their entire meal at employee cafeterias and to participate in environmental events.

≫ Climate Change Mitigation and Adaptation

Environmental Awareness Activities in the Home

The Yamaha Group works with the Yamaha labor union to promote eco-conscious activities in daily life through projects and tools such as the tracking of eco-conscious household activities, “Smart Life in My Home Commitments” conducted by employees based on themes matched to their homes, and the “My Eco Commitment Coloring Page” for families with children.

In fiscal 2021, an aggregate total of 507 employees declared “Smart Life in My Home Commitments,” and reports were made on superior energy conservation and other activities performed in the home. Awards were presented to eight particularly exemplary activities.



“Smart Life in My Home Commitments” activity reports

“My Eco Commitment Coloring Page”

Also, the Yamaha Group has been encouraging employees to create Green Eco Curtains in their homes since fiscal 2010.

Green Eco Curtains at employee homes

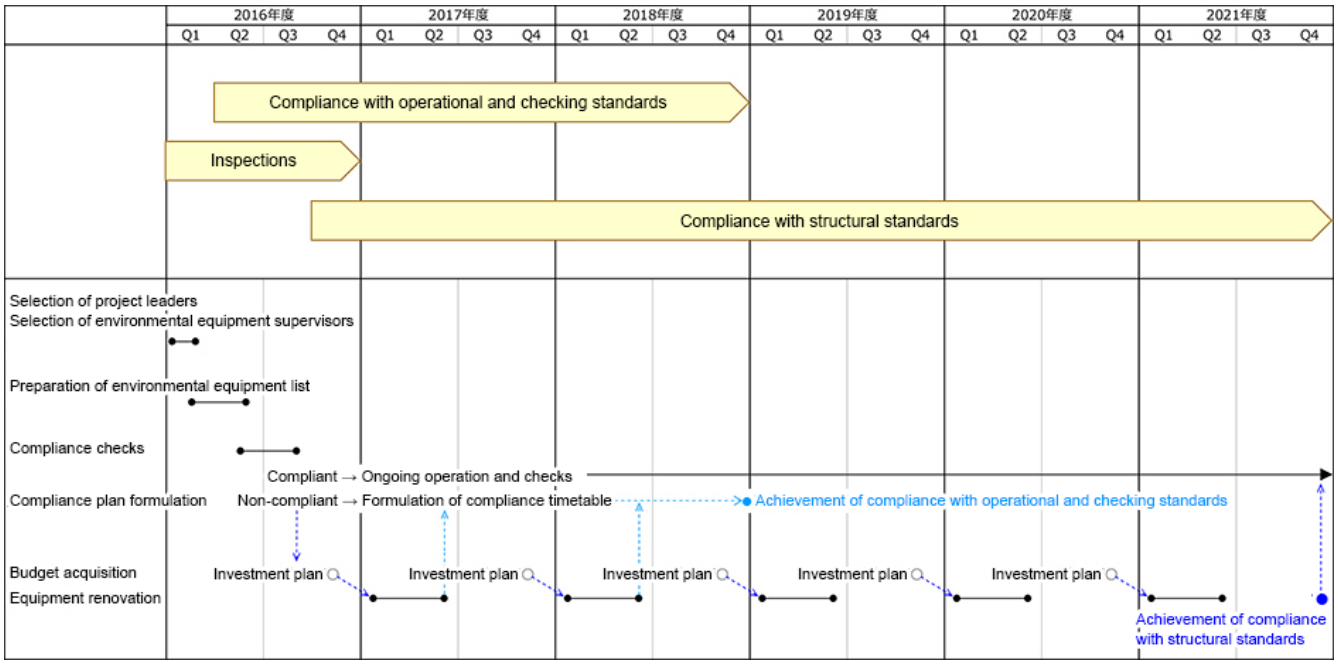
Prevention of Pollution

Environmental Pollution Prevention Frameworks

The Yamaha Group established the Yamaha Group Environmental Equipment Standards in 2014 to guide efforts to prevent environmental pollution during the course of its business activities. These Group standards contain provisions regarding the installation, management, and operation of environmental facilities. Compliance with these standards is being pursued in a systematic matter based on roadmaps set on an individual business site-basis, and we plan to achieve full compliance with these standards at all sites in fiscal 2022. In this manner, we aim to keep the number of accidents resulting in environmental pollution at zero.

As of March 31, 2021, 16 of 19 sites were in full compliance with the Yamaha Group Environmental Equipment Standards.

Yamaha Group Environmental Equipment Standards Compliance Roadmap



Monitoring and Legal Compliance

With the goal of reducing the environmental impact of its business activities and ensuring compliance with environmental laws, Yamaha Group divisions in charge of environmental measurement regularly monitor gas, wastewater, noise, odor, and other emissions to confirm the status of the management of these emissions and to assess compliance in accordance with the annual plans created by the Yamaha Corporation Environmental Division and the management divisions of individual business sites.

In monitoring environmental impacts, we employ our own standards, which are stricter than existing legal standards. In the event that measurements exceed standards or are unusual in some way, we take immediate emergency and correction measures.

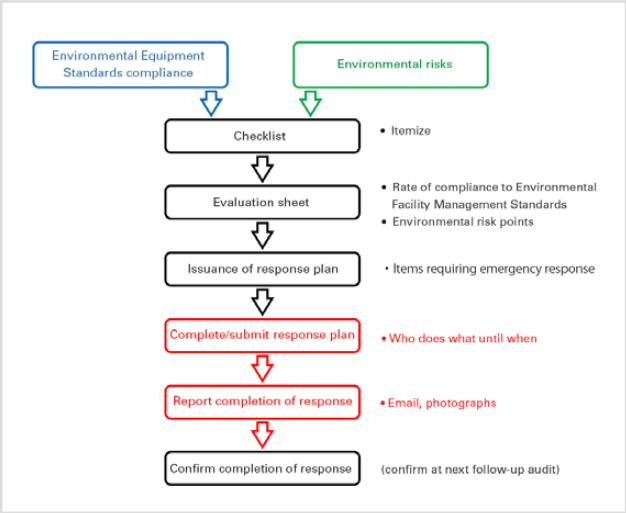
In addition, we have systems in place to facilitate quick responses to revisions to laws and regulations. The Group collects the latest legal and regulatory information, and the Yamaha Corporation Environmental Division compiles, checks, and communicates this information to business sites to ensure consistent compliance on a Groupwide basis. Furthermore, the Group has established working groups at business sites comprised of members of the management and production divisions of the respective sites to advance risk reduction measures. The Group is carrying out initiatives in both Japan and overseas. For example, in China, where environmental laws have been amended frequently in recent years, the Yamaha Group works closely with local Group companies to strengthen compliance systems.

Environmental measurements being performed

Environmental Audits

The Yamaha Group conducts internal environmental audits according to the ISO 14001 integrated management system standard in order to prevent environmental accidents and violations of law. In addition, we conduct environmental audits calling on the expert knowledge of the Yamaha Corporation Environmental Division and in accordance with the Yamaha Group Environmental Equipment Standards. Yamaha auditing staff acquire internal environmental auditor certification based on ISO 14001 standards as well as official qualifications related to environmental preservation, such as Pollution Control Manager and Working Environment Measurement Expert certifications.

Shared Groupwide checklists are used to score compliance with equipment standards at business sites and environmental risks. By clarifying priorities and items requiring a response, the Company is pursuing efficient improvements to mitigate risks.



In addition, the frequency of audits is determined based on risk levels, and audits are conducted regularly. In fiscal 2021, we conducted environmental audits at six sites in Japan.

Environmental audit conducted by auditing staff of Yamaha Corporation Environmental Division

Emergency Preparedness

The Yamaha Group implements frameworks and conducts training sessions to prevent environmental pollution caused by leaks of hazardous substances and oils from business sites as part of its efforts to ensure preparedness for emergency situations, such as natural disasters or accidents. The Yamaha Group identifies risks using uniform Groupwide evaluation standards and implements improvement measures and refines procedures pertaining to emergence response measures at business sites deemed to face significant risks through these evaluations. Additionally, business sites have prepared procedures, equipment, and stockpiles to respond to such emergency situations and are conducting emergency response training.

Emergency response training

Pollution and Hazardous Substance Response Measures

The Yamaha Group constantly monitors wastewater to prevent wastewater from business sites from negatively impacting water and related habitats. Furthermore, we conduct regular surveys on the impact of wastewater on life-forms and the water quality in waterways to which wastewater is discharged. In the past, the Group has conducted cleanup measures at two sites where soil and groundwater contamination occurred due to chlorine-based organic solvents. We have already completed groundwater cleanup activities at the Toyooka Factory of Yamaha Corporation. In addition, conditions at Yamaha's headquarters have been restored to near-standard levels, and we continue to advance cleanup activities today. We have completed soil contamination cleanup activities at both sites.

In addition, all domestic Group business sites have completely disposed of large machinery, such as transformers and condensers that contain high-density polychlorinated biphenyl (PCB), and received registration for disposal of small, high-density PCB waste articles, such as fluorescent lamp stabilizers. Furthermore, disposal of devices containing low-

density PCBs has been completed at four sites: Toyooka, Tenryu, Iwata, and Katsuragi. At the main factory of Yamaha Music Manufacturing Japan Corporation, the Company upgraded wastewater processing equipment in March 2018 in order to improve earthquake resistance and processing capabilities. This new equipment can process twice as much wastewater as the previous equipment and has been designed to withstand an earthquake with an intensity of 6 upper to 7 on the Japanese seismic scale.

Groundwater purification equipment at our headquarters

Wastewater processing equipment at the main factory of Yamaha Music Manufacturing Japan

Chemical Substance Management and Emission Reduction

Based on the Yamaha Group Chemical Substances Usage Standard, the Yamaha Group practices exhaustive management of chemical substances regulated under the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof (PRTR Act) and takes steps to reduce emissions of these substances from its production processes and products. These precautions are part of our efforts to minimize the negative impact on people and the environment from chemical substance use. At domestic Group companies, safety data sheets*1 pertaining to materials containing chemical substances are managed in an integrated manner via a database, evaluations of the dangers of these substances and their potential impacts on the environment are performed, and the necessary steps are taken to mitigate risks.

At present, the chemical emissions that occur in the course of production processes at Yamaha Group companies mainly consist of volatile organic compounds (VOCs)*2 from product coating and adhesive processes. The Group constantly monitors VOC emissions and is working to reduce such emissions by installing treatment equipment and using alternative substances. (For details regarding VOC emissions, please refer to the Environmental Data page.)

Factories in China are introducing VOC treatment equipment in their efforts to reduce emissions of such substances. Meanwhile, PT. Yamaha Music Manufacturing Asia of Indonesia is implementing thinning agent recycling initiatives and was thereby able to reduce emissions of these substances by approximately 70% in 2020.

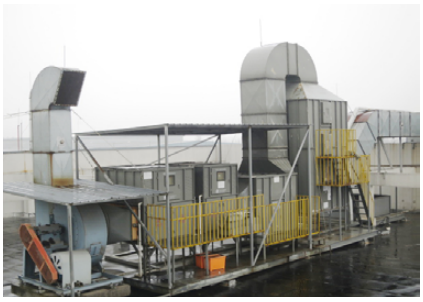
*1 Safety data sheets are used to record information on the potential dangers and handling methods for chemical substances and products containing chemical substances regulated under the Industrial Safety and Health Act, the Poisonous and Deleterious Substances Control Act, and the PRTR Act.

*2 VOCs are substances used in thinning agents as coatings and adhesives thought to be one factor in the release of photochemical oxidants and suspended particulate matter.

≫ Environmental Data

VOC treatment facility at Tianjin Yamaha Electronic Musical Instruments, Inc.

VOC treatment facility at Hangzhou Yamaha Musical Instruments Co., Ltd.



VOC treatment facility at Xiaoshan Yamaha Musical Instruments Co., Ltd.

Reduction of Chemical Substance Emissions in Coating Processes

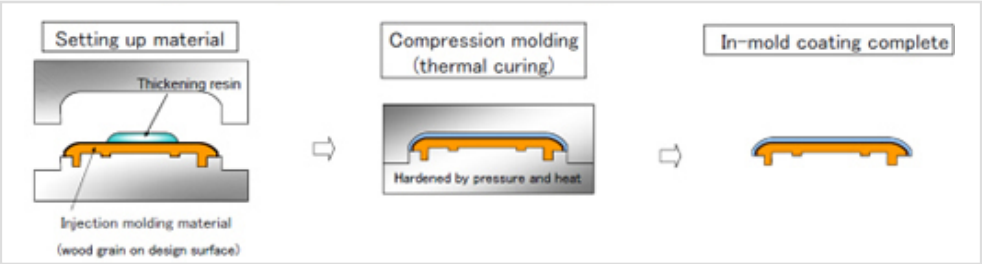
Coating processes are performed to give musical instruments and automotive interior components their beautiful appearance and durability. In these processes, the Yamaha Group continues to research and introduce coating methods that lower environmental impacts by reducing the use of coating agents and the emission of organic solvents. To date, we have developed applications for electrostatic coating, powder coating, and flow coating matched to our products, and we are making use of these applications in the production process.

Yamaha Music Manufacturing Japan Corporation has been replacing the coating agents used for parts from agents containing organic solvents to water-based coating agents in the piano manufacturing process. Water-based coating also has the positive effect of improving the work environment.

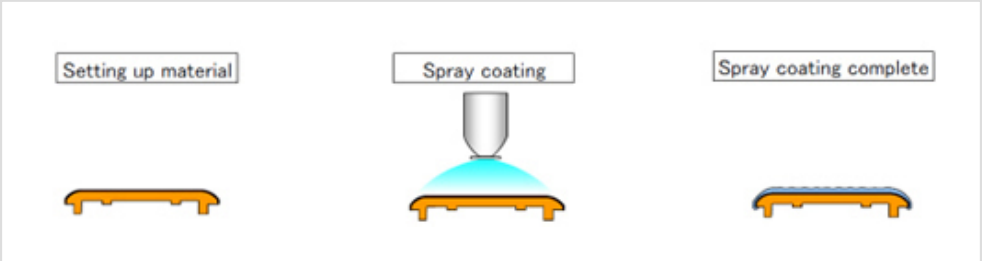
Similarly, Yamaha Fine Technologies Co., Ltd., has developed an in-mold coating method that completes the coating process inside of the mold. This method has been adapted for automobile interior components. By switching from traditional spray coating to in-mold coating, this company has achieved adhesion efficiency*3 of more than 90% while lowering the amount of organic solvents released into the atmosphere using less coating. Ventilating operations in the workplace have been significantly reduced as well, contributing to a reduction in the amount of energy used. Through this coating method, we were able to reduce the amount of styrene used in fiscal 2021 by approximately 41 tons.

*3 Adhesion efficiency is the ratio of materials adhering as a coating compared to total used.

In-mold coating process (YMC: Yamaha Mold Coating)



Spray coating process



Protection of the Ozone Layer

The Yamaha Group has historically worked to reduce usage of fluorocarbons to protect the ozone layer. We have eliminated the use of all specified chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs). Since eliminating the use of all specified CFCs in manufacturing processes in fiscal 1994, we have been using HCFCs, which have a lower ozone depletion potential compared to specified CFCs, in the degreasing process for metal materials. However, we also eliminated the use of all HCFCs in fiscal 2006 because of its large contribution to global warming.

Environmental Accidents and Litigation

In fiscal 2021, the Yamaha Group did not violate any laws, receive fines, pay fees, or be named in any lawsuits with respect to environmental concerns. The Group did not experience any accidents having an effect on the outside environment, nor did we receive any significant complaints.

Environmentally Friendly Products and Services

Environmentally Friendly Design and Green Procurement

The Yamaha Group performs product life-cycle assessments that cover all product life-cycle stages, ranging from material procurement to production, transportation, use, and disposal, and uses other methodologies to identify the characteristics of the environmental impacts of its various product lines. This information is used to practice environmentally friendly design based on the major environmental impact characteristics of specific products.

For chemical substances contained in our products, we have created standards for use in products, established a management system, and perform green procurement.

Yamaha Group Environmental Policy

Major Product Characteristics Identified through Life-Cycle Assessments and Measures

Note: The size of each circle indicates the relative environmental impact associated with the respective stage in the product life cycle.

Acoustic Instruments

Characteristics

- No energy consumption during use (lack of need for electricity, etc.)
- Long lifespans (often used for several decades)
- Primarily made using renewable timber, but present risks of deforestation and resource depletion via illegal thinning
- Lack of material recycling infrastructure like that seen for household appliances

Measures

- Sustainable timber procurement that does not contribute to deforestation or resource depletion
- Extension of lifespans through enhancement of maintenance services and reuse frameworks
- Development of material recycling frameworks

Acoustic instrument life cycle

Electronic Instruments

Characteristics

- Lower energy consumption than standard household appliances as most products do not have idle power consumption
- Lifespan on par with standard household appliances
- Large environmental impact from manufacturing metal components due to need for excavation and smelting, environmental pollution risks from runoffs attributable to plastics and chemical substances
- Lack of material recycling infrastructure like that seen for household appliances

Measures

- Reduction of use and replacement of substances that impact the environment
- Extension of lifespans through retrofitting
- Utilization of biomass and other renewable resources
- Development of material recycling frameworks

Electronic instrument life cycle

AV Equipment and IT Equipment

Characteristics

- Relatively large energy consumption due to constant operation of some IT equipment and idle power consumption of AV equipment
- Lifespans heavily influenced by specifications and versions of connected equipment
- Large environmental impact from manufacturing metal components due to need for excavation and smelting, environmental pollution risks from runoffs attributable to plastics and chemical substances
- Lack of material recycling infrastructure like that seen for household appliances

Measures

- Energy efficient design
- Reduction of use and replacement of substances that impact the environment
- Utilization of biomass and other renewable resources
- Development of material recycling frameworks

AV equipment and IT equipment life cycle

Management of Chemical Substances Contained in Products

Some chemical substances contained in distributed or sold products require proper treatment at the time of disposal or have the potential to adversely impact people's health or the environment. For this reason, countries around the world have been strengthening restrictions on chemical substances contained in products and requiring data disclosure.

With this regard, Yamaha Corporation has established the Standards for Chemical Content in Products. These standards are used to manage chemical substances in products during design and development to help ensure legal compliance and reduce environmental impacts. The standards are revised when necessary in response to legislative changes, the accession of voluntary standards, and other factors.

Management System for Chemical Substances Contained in Products

In order to manage the chemical substances contained in products, it is imperative to identify and control the chemical substances contained in the parts and materials that make up finished products. The Yamaha Group established a management system in fiscal 2009, and supplier cooperation is requested as we conduct surveys of the chemical substances contained in parts and work to manage these substances.

Furthermore, the Group has adopted the industry-standard format for the communication of information on the chemical substances contained in products.*1 We also have systems in place for furnishing flexible responses to the ongoing addition of chemical substance regulations, such as the expansion of the list of substances of very high concern in the European Union's Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) regulations.*2 At the same time, Yamaha holds briefing sessions to gain the understanding and cooperation of suppliers in regard to managing the chemical substances used in components.

*1 The Article Information Sheet (AIS), a basic communication sheet endorsed by the Joint Article Management Promotion-consortium (JAMP) for providing information on chemical substances contained in products, is the industry-standard format. However, a transition is currently under way from AIS to the chemSHERPA® (chemical information SHaring and Exchange under Reporting PArtnership in supply chain) standard. Through the adoption of such standards, parts manufacturers are able to use the information on chemical contents that they receive from material manufacturers to convey information on the chemical contents of parts to the entities they supply.

*2 Substances of very high concern are substances, such as carcinogens, for which disclosure and management are required under REACH regulations should an amount exceeding a defined threshold be contained within a product.

Promotion of Green Procurement

The Yamaha Group promotes green procurement in which it sources materials with low environmental impacts throughout the entirety of product life cycles, spanning from resource extraction to disposal. The Yamaha Group Green Procurement Policy unveiled in 2002 compiles our requests of suppliers, and we ask suppliers to cooperate with surveys on the chemical substances used and contained in the articles they supply as well as the status of chemical substance management. Information on chemical contents and chemical substance management practices received from suppliers is compiled in a database for use in confirming the chemical substances contained in products and in complying with environmental regulations. The Yamaha Group Green Procurement Policy is revised as necessary by changes in the global regulatory climate.

Yamaha Eco-Products Program

The Yamaha Group launched the Yamaha Eco-Products Program in 2015. This program is designed to clarify environmental standards for products and promote environmentally friendly products. A Yamaha Eco-Label is affixed to those products meeting our environmental standards, thus certifying them as Yamaha Eco-Products. Our objective is to provide straightforward information on the environmental considerations incorporated into products to assist customers in the decision-making process when selecting a product.

Certification under Yamaha Eco-Products Program (As of March 31, 2021)

A total of 29 new product models were certified under the Yamaha Eco-Products Program in fiscal 2021. As of March 31, 2021, the number of certified products, including prior products, was 454, of which 70 were newly developed products bearing the Yamaha Eco-Label.

In fiscal 2021, sales of Yamaha Eco-Label certified products accounted for approximately 16% of total net sales.

Yamaha Eco-Label

Product Certified in Fiscal 2021

SR-C20 series sound bar

Reason for certification: Energy efficiency (industry-low levels of standby electricity consumption)

Yamaha Eco-Products Program

Sustainable Consumption

Products Supporting the Reduction of Environmental Impacts

Yamaha Group products are not only for general consumers but also for businesses. Some of our products help to reduce the environmental impact of our customers' business activities or can be used to reduce environmental impacts during the use of products manufactured by the customer. The Group works to reduce environmental impacts throughout society by means of the development and promotion of such products.

Application of Environmental Technologies

Sustainable Resource Use

Timber Resource Initiatives

Many of the instruments that the Yamaha Group produces, such as pianos and string, percussion, and wind instruments, are primarily made of wood. Large amounts of timber are also used when making electronic musical instruments, speakers, and soundproof rooms, due to the merits of wood in terms of acoustic performance, function, design, and texture.

Considering the diverse variety of timber used in its business operations, the Group established the Yamaha Group Timber Procurement Policy, which sets forth directives for timber usage in order to better conserve this precious resource and to ensure its availability for continued use in the future. The Group also established the Yamaha Supplier CSR Code of Conduct, which clearly stipulates points related to the harvesting and trading of timber resources that suppliers are requested to observe. This policy and code guide the Group in conducting sustainable procurement that is friendly to the environment and biodiversity and in fully utilizing timber, a highly renewable resource, without waste.

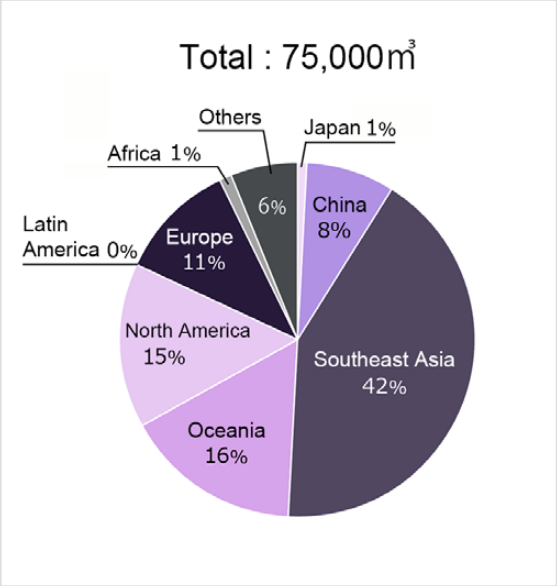
Yamaha Group Timber Procurement Policy

Yamaha Supplier CSR Code of Conduct

Specific volume figures can be found on the Environmental Data page.

Environmental Data

Breakdown of Timber Resources Used by the Yamaha Group by Origin (Fiscal 2021)



Note: Figures exclude products that are not Yamaha brand or original equipment manufacturer (OEM)/original design manufacturer (ODM) products.

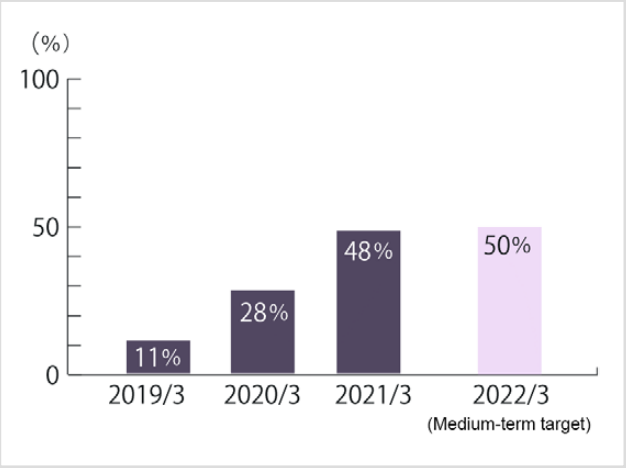
Timber Due Diligence

Sustainable use of timber requires consideration for forest conservation and for timber resource volumes. At the same time, it is crucial to contribute to community development through employment opportunities and infrastructure to sustain the economic viability of the supply chain. The Yamaha Group has established a due diligence system to prevent the procurement of timber from illegal sources, and promotes a strict confirmation process for the legality of timber harvesting

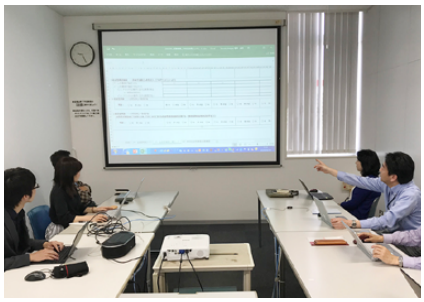
through site visits and surveys of documents for procurement sources. In addition to environmental considerations, the Group is expanding the use of certified timber, which is produced in socially and economically sustainable forests and contributes to the advancement of the community.

The Group conducts surveys targeting all business partners from which timber was purchased to assess the place of origin, the legality of harvesting, and the sustainability of relevant resources. Based on the results, we perform stricter verification of legality for timber deemed to represent a high risk by undertaking further investigations including local site visits and assessments by a committee comprised of members of the Timber Procurement Division and the Sustainability Division. We confirmed that 99.3% (volume ratio) of procured timber was low risk in fiscal 2020 and that 99.4% was low risk in fiscal 2021. The Group conducts such surveys each year with the cooperation of suppliers and is aiming to achieve a 100% rate of low-risk timber procurement. Additionally, we are actively adopting certified timber. Certified timber constituted 48% of timber purchase in fiscal 2021 (by volume, compared with 28% in fiscal 2020). In the medium-term management plan announced in April 2019, the Group set the goal of achieving a 50% ratio of certified timber use over the three years leading up to fiscal 2022. Smooth progress is being made toward accomplishing this target.

Ratio of Certified Timber Use



Note: Figures are as of March of the respective fiscal year



Legality assessment meeting

Site visit

Cultivation of Quality Timber through Coordination with Local Communities (Tone Forest Activities)

The Yamaha Group uses a diverse variety of timber to produce musical instruments and other products. However, concerns regarding the sustainability of these resources have arisen in light of the recent declines in timber resource volume and quality. The Group aims to address these concerns through Tone Forest activities, which are being advanced through coordination with communities for the purpose of developing sustainable forests to ensure that high-quality timber suited to musical instrument production can be secured in a sustainable manner. We partner with government agencies and academic institutions to advance these activities around the world.

Initiatives in Tanzania (African Blackwood)

In fiscal 2016, Yamaha Corporation began investigating African blackwood (Dalbergia melanoxylon), an important material used for woodwind instruments. These investigations are looking at matters such as ecology, resource stocks, and forest management status in Tanzania, where this tree is grown. The goal of these investigations is to help conserve this tree species while securing a stable procurement source. African blackwood is classified as near threatened by the Red List of Threatened Species, which is compiled by the International Union for Conservation of Nature and Natural Resources, and a downward trend in the resource volume has been seen in recent years. As a result of investigating the management status of forests and the ecological status of these trees, including distribution, growth, and natural regeneration, we discovered that this resource can be maintained in a sustainable manner through proper forest management.

Following these results, we undertook the development of a business model for realizing the sustainable use of this species as a material for musical instruments as a preparatory survey on a base of pyramid (BOP) business with the Japan International Cooperation Agency (JICA). Taking place over the period spanning from fiscal 2017 to fiscal 2020, this process included the construction of a value chain for generating a cycle of forest preservation, instrument production, and community development, as we tackled the issues that arose in the pursuit of the quick development of said business

model. Furthermore, we began working together with local NGOs and community members in fiscal 2018 to conduct regular African blackwood tree planting activities with the goal of securing future resource volumes. The scope of these activities is being expanded as we work together with local NGOs to introduce tree planting and propagation techniques into local communities, and these saplings cultivation and tree planting activities are becoming a sustainable part of local community forestry activities. In fiscal 2021, we planted approximately 1,900 seedlings, making for an aggregate total of around 7,400 saplings planted over four years of these activities. The growth status of the planted saplings has been monitored on a regular basis to collect fundamental data for fostering quality trees. In addition, Yamaha Corporation is conducting initiatives aimed at the effective use of existing resources, including procuring timber from forests that have been certified as being sustainably managed and developing elemental technologies for improving the usage efficiency of wood materials.


Forest survey


Saplings being raised in a farming village (photograph provided by Mpingo Conservation Development Initiative)


Environmental education initiative for local elementary school students (photograph provided by Mpingo Conservation Development Initiative)

Initiatives in Hokkaido (Sakhalin Spruce)

Kitami Mokuzai Co., Ltd., a Hokkaido-based company that manufactures piano soundboards, signed an agreement to establish “Piano Forests” in cooperation with the Okhotsk General Subprefectural Bureau and the town of Engaru, Monbetsu-gun, Hokkaido Prefecture in March 2016. Under this agreement, these organizations have been working together to foster sustainable forests and expand the demand for Sakhalin spruce (Picea glehnii) plantation timber.

In recent years, it has become necessary to rely on imports for the majority of wood for use in piano soundboards due to a decrease in natural Sakhalin spruce timber. Under this agreement, we are cooperating in the development of appropriate forest management, planting, and other forestry activities for the Sakhalin spruce plantations owned by the Okhotsk General Subprefectural Bureau and the town of Engaru. The aim of this initiative going forward is to once again secure a stable supply of high-quality Sakhalin spruce timber for use in piano soundboards as well as to manage forests and to ensure that the Okhotsk tree culture is passed on to future generations.

In 2020, a group of approximately 80 people comprised of employees of Kitami Mokuzai and members of their families gathered at an Engaru Town Sakhalin spruce plantation for the first tree planting event held after the signing of the agreement, where they planted 400 Sakhalin spruce saplings while receiving expert guidance. This event served as a prime opportunity for reaffirming how the production of pianos will be supported by the forests, which will be shaped by years of time and substantial effort, and the timber produced therein.

Our activities were restricted by the COVID-19 pandemic throughout fiscal 2021. Nevertheless, we were able to display exhibit panels introducing these activities at the Mokuiku Plaza in the Chi-Ka-Ho event that took place in the Chi-Ka-Ho underground plaza in front of Sapporo Station in January 2021. We continued our efforts to promote these activities through initiatives such as traveling exhibits held throughout the town of Engaru in February 2021 and the preparation of a video introducing the Mori-no-Okhotsk roadside rest area in Engaru in March of the same year.


Sakhalin spruce plantation


Timber used for piano parts

Employees of Kitami Mokuzai and members of their families taking part the in tree planting event

Exhibit panels at the Mokuiku Plaza in the Chi-Ka-Ho event

Environmental Considerations for Timber Resources in Product Creation

The Yamaha Group is proactively utilizing wood cultivated specifically for industrial purposes on planned plantations as well as certified wood, which is properly managed so that the lumbering process does not harm the forest or ecosystems. The goal of measures is to use the high-quality renewable resource of trees on a sustainable basis.

In addition, the Group focuses on developing alternative materials that accurately reproduce the superior sound quality of scarce wood materials best suited for instruments.

Examples are introduced on the Application of Environmental Technologies page.

» Application of Environmental Technologies

Conservation and Sustainable Use of Raw Materials

Resource Conservation in Products and Packaging

The Yamaha Group strives to use less resources in its products from a variety of standpoints, such as lowering product size and weight, integrating several products into one, and reducing sizes, and when possible completely eliminate product packaging and cushioning. Furthermore, the Group is also engaged in efforts that will ultimately lead to less use of resources, such as extending the lifespans of its products and developing its piano renewal business.

» Environmentally Friendly Products and Services

» Initiatives to Extend Product Lifespans

» Piano Renewal Business (in Japanese only)

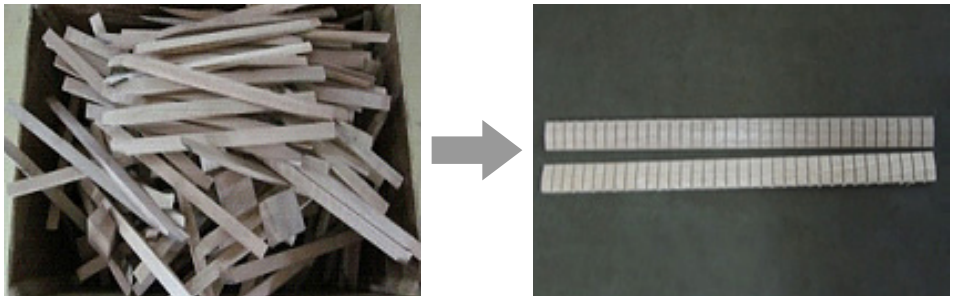
Utilization of Sustainable and Recyclable Materials

The Yamaha Group is developing alternative materials that can be substituted for scarce timber and adopting sustainable materials, such as biomass-derived resins, for use in its products. In addition, we use recycled polystyrene in portions of speaker boxes while incorporating recycled plastics into other products.

» Environmentally Friendly Products and Services

Effective Use of Timber Resources

The Yamaha Group is working to reduce losses by improving the yield ratio in timber processing while also reusing and recycling wood chips from production processes. The Company is using offcuts in other components and either using, selling, or disposing such offcuts as raw materials, fertilizer, or fuel. In recent years, the Company has also been conducting unique initiatives, such as using sawdust produced in the wood manufacturing process at Japanese factories that manufacture pianos as bedding for cows.



Timber offcuts previously disposed of as waste being repurposed as corner block (structural reinforcement materials inside guitar bodies)

Waste Reduction and Resource Recycling

The Yamaha Group has established systems for recovering and separating waste in order to reduce waste produced at factories and offices and promote recycling. Targets have been established with this regard as part of the Group's environmental management system.

In Japan, the Yamaha Group has a recycling rate of approximately 99%.

Furthermore, regular on-site inspections of waste processing subcontractors are carried out to verify that waste is being processed appropriately as part of our efforts to fulfill our waste processing responsibilities.

Waste Reduction Initiatives

Office	Details
Toyooka Factory	In November 2010, the Company introduced vacuum concentration equipment for liquid waste and reduced the amount of waste acids and waste alkali generated in the wind instrument manufacturing process by approximately 80%.
	In fiscal 2012, we began processing waste containing rare metals from the R&D Department as a valuable resource and making effective use of this resource.
	The Company introduced a new liquid waste reduction CD dryer, taking the place of the decompression and concentration equipment. This dryer was put into full operation in February 2019, which contributed to an approximately 30% reduction in emissions of specified controlled industrial waste, such as waste acids and waste alkali.
Kakegawa Factory	In September 2009, the Company installed more wastewater processing equipment and began the in-house processing of wastewater containing adhesive agents generated in the piano manufacturing process. These efforts have led to annual waste reductions of approximately 90 tons.
	In September 2012, the Company increased its ability to process wastewater containing adhesive agents. These efforts have led to annual waste reductions of approximately 270 tons.
Kitami Mokuzai Co., Ltd.	A liquid waste reduction CD dryer was installed in February 2019. This dryer has resulted in a 50% reduction in emissions of wastewater, sludge, and other waste.
Xiaoshan Yamaha Musical Instruments Co., Ltd.	In fiscal 2014, the Company reduced paint process-related waste by keeping the circulating water used in the musical instrument painting booths clean to enable longer usage, which resulted in annual waste reductions of approximately 120 tons.
Yamaha Fine Technologies Co., Ltd.	In fiscal 2012, the Company cut down on car part rejects by reducing equipment defects and quality defects. The result was a 16% reduction in overall factory waste production coupled with energy and resource savings achieved through improved productivity.

CD dryer (Toyooka Factory)

CD dryer (Kitami Mokuzai Co., Ltd.)

For data related to waste, please refer to the Environmental Data page.

Environmental Data

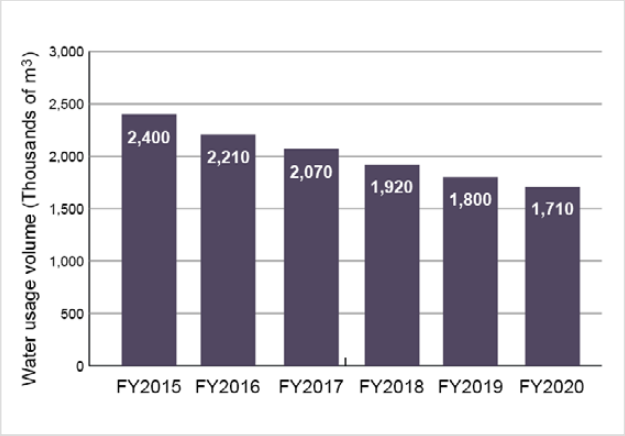
Product and Packaging Recycling

The Yamaha Group complies with laws and ordinances related to recycling products and packaging in relevant countries and regions, including the Waste Electrical and Electronic Equipment (WEEE) Directive of the European Union. In addition, we are promoting efficient use of resources in Japan by establishing locations for collecting used Electone products across the country to recover and recycle.

Preservation of Water Resources

The Yamaha Group uses water to wash products and cool facilities. The Group evaluates water-related risks through comprehensive risk assessments conducted on a Groupwide basis as well as through surveys and water-related risk evaluation tools at all business sites. These measures are used to evaluate physical water stress, water quality, regulatory risks related to water resources, and reputational risks. In fiscal 2020, we began acquiring third-party verification for Groupwide water intake volumes to further improve management practices. The Group does not have large-scale production activities in areas where water resources are lacking, and we have therefore judged that our operations do not have a large impact on the environment through water intake. Furthermore, the Group requires high-transaction-value suppliers that use large amounts of water to provide reports describing water intake volume, the water-related risks they recognize, examples of damage, and other matters to maintain an understanding of water-related risks across the value chain.

Water Usage*



* Water usage represents the total amount of ground water intake and tap and industrial water purchases.

Meanwhile, the plating and washing processes involved in wind instrument manufacturing use large volumes of water. Recognizing this fact, since the early 1970s the Yamaha Group has been reusing cooling water, recycling wastewater from production processes using reverse osmosis membrane equipment, and implementing measures to prevent leakage in water-using facilities.

The scope of calculation for greenhouse gas emission and water usage volumes encompasses the Yamaha Corporation headquarters and major production sites and resort facilities worldwide and accounts for more than 95% of all Yamaha Group sites.

» Protection of Biodiversity (Water Quality Preservation)
» Prevention of Pollution (Monitoring of and Compliance with Laws and Regulations)
» Third-Party Verification (in Japanese only)

For data related to water usage and reuse, please refer to the Environmental Data page.

» Environmental Data

Resource Conservation and Recycling Initiatives

Xiaoshan Yamaha Musical Instruments

Xiaoshan Yamaha Musical Instruments Co., Ltd., which manufactures wind instruments and percussion instruments in China, has been reusing approximately 80% of wastewater for manufacturing processes since it installed a wastewater treatment facility that purifies wastewater to the level of pure water. (This facility has brought this company in compliance with legal provisions for the inspection and improvement of corporate pollution resulting from electroplating of Zhejiang Province.*)

In addition, Xiaoshan Yamaha Musical Instruments has adopted a cooling method that uses a circulating water supply to cool the annealing furnaces used for heat treating the copper tube components of wind instruments, resulting in annual reductions in water use of approximately 5,700 tons.

* Legislation passed in Zhejiang Province promotes environmental preservation in electroplating factories by requiring companies engaged in electroplating processes to conform to 56 items related to environmental preservation systems and equipment. Standards for metals such as copper and nickel are stricter than those for general factory wastewater.


Wastewater treatment facility


Cooling unit using circulated water

Yamaha Musical Products Indonesia

Wind instrument manufacturer PT. Yamaha Musical Products Indonesia has introduced a wastewater treatment facility that enables the reuse of more than 60% of wastewater. Furthermore, wastewater treatment processes have been rationalized to reduce the use of chemicals.

In addition, YMPI has installed equipment to allow cyclical reuse of the wash water used in recorder production processes. This equipment has reduced water use by approximately 12,000 tons per year. In 2019, such equipment was deployed for other processes, cutting water use by about an additional 1,300 tons.

Wastewater treatment facility

Hangzhou Yamaha Musical Instruments

Piano and guitar manufacturer Hangzhou Yamaha Musical Instruments Co., Ltd., installed a new wastewater treatment facility in May 2016 in response to increasingly strict wastewater standards. This facility allows for wastewater to be purified to the point that it can be reused. The wastewater treated in this facility is used for cooling water and other applications, resulting in annual reductions in water use of roughly 10,000 tons.

Wastewater treatment facility

Reuse of wastewater for cooling water

Yamaha Music India

Yamaha Music India Pvt. Ltd., which completed construction in January 2019, has introduced a completely closed wastewater treatment facility. Wastewater generated from the manufacturing process is 100% reused and is not emitted outside the factory.

Wastewater treatment facility

Reuse of 100% of manufacturing process wastewater

Yamaha Music Manufacturing Asia

PT. Yamaha Music Manufacturing Asia, a manufacturer of electronic instruments, installed reverse osmosis membrane equipment in 2019 to treat wastewater for reuse in the manufacturing process. In addition, it is conserving approximately 120,000 kWh of power a year by spraying mist on chillers to augment their cooling capabilities.

Reverse osmosis membrane equipment

Yamaha Musical Products Asia

At PT. Yamaha Musical Products Asia, which commenced production in fiscal 2021, we have completed construction of a state-of-the-art wastewater treatment facility designed for the purpose of reusing wastewater in manufacturing processes. Operation of this facility has already begun.

Wastewater treatment facility

Climate Change Mitigation and Adaptation

Climate Change Response Measures

Rapid climate change poses a major threat to humanity and to all life-forms on earth. We recognize that helping combat this threat and contribute to the decarbonization of society are corporate responsibilities and important management issues.

Under its global environmental preservation activities system that is overseen by the managing executive officer responsible for environmental issues, the Yamaha Group is working to contribute to the global movement to reduce CO_2 emissions. At the same time, we are preparing for the potential impact of climate change by identifying risks, formulating mitigation measures, and incorporating these into business strategies. Endorsing the goals of Science Based Targets (SBT),*1 an international initiative encouraging companies to formulate greenhouse gas emission reduction targets in accordance with scenarios based on scientific evidence, the Group received certification from this initiative for its medium- to long-term reduction targets in June 2019. Also at this time, the Group declared its endorsement of the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD)*2 and commenced initiatives for analyzing the impact of climate change on its finances and disclosing related information.

Going forward, the Group will continue to pursue reductions in greenhouse gas emissions and work to address the impact of climate change. At the same time, we will seek to create products, services, and business models that help mitigate climate change and promote the decarbonization of society through energy-efficient products and other means.

SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

*1 SBT is an international initiative that encourages companies to formulate greenhouse gas emission reduction targets in accordance with scenarios based on scientific evidence to contribute to the accomplishment of the goals of the Paris Agreement.
*2 TCFD is a task force created by the Financial Stability Board that has released recommendations aimed at facilitating appropriate investment decisions through disclosure of the potential financial impacts of climate change.

» Yamaha Eco-Products Program
» Sustainable Consumption

Targets, Measures, and Results

Greenhouse Gas Emissions Reduction Targets (SBT-Certified)

- Reduce total Scope 1*3 and Scope 2*4 greenhouse gas emissions by 32% from fiscal 2018 levels by fiscal 2031
- Reduce total Scope 3*5 greenhouse gas emissions by 30% from fiscal 2018 levels by fiscal 2031

*3 Scope 1 emissions are direct greenhouse gas emissions from a business operator through sources such as fuel use on company premises.
*4 Scope 2 emissions are indirect greenhouse gas emissions from use of electricity, heat, and steam supplied by third parties.
*5 Scope 3 emissions are indirect greenhouse gas emissions from areas of the supply chain not accounted for under Scope 1 and Scope 2.

Major Greenhouse Gas Emission Reduction Initiatives

- Energy-saving initiatives including optimization of production methods and equipment placement, installation of high-energy-efficiency equipment and LED lighting, and exhaustive management of facility operation times, air-conditioning temperatures, and other energy consumption factors
- Introduction of cogeneration systems and solar power generation systems
- Transition to fuel sources with low greenhouse gas emissions
- Switch to purchasing renewable energy
- Improvement of transportation efficiency and shift to low-carbon transportation methods (ships and trains) in distribution
- Development of energy-efficient products (reduction of emissions from large-volume Scope 3 emissions category (product use))

Initiatives and Achievements to Date

Yamaha Corporation and domestic production sites are advancing energy conservation and other initiatives in manufacturing processes and at offices to achieve the long-pursued target of reducing CO_2 emissions per unit of production by 1% or more each year. In fiscal 2021, after the establishment of SBT-certified targets, we began introducing renewable energy on a full-fledged scale and thereby shifted to renewable energy for two-thirds of the power purchased at the Company headquarters, and we transitioned to renewable energy for 100% of power in April 2021. At overseas production sites, quantitative reduction targets are set on an individual-site basis, and proactive initiatives are being implemented toward the accomplishment of these targets.

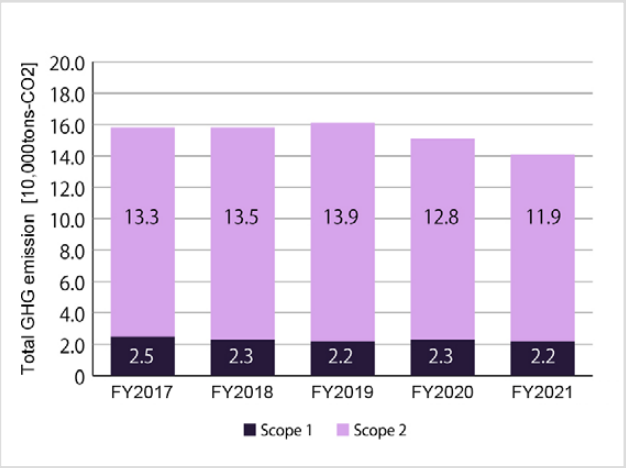
In advancing emission reduction initiatives, we manage greenhouse gas emission volumes in accordance with the Greenhouse Gas Protocol.*6 In addition, third-party verification has been received for Scope 1 and Scope 2 emissions and certain Scope 3 emissions since fiscal 2017.

*6 The Greenhouse Gas Protocol is a set of standards for calculating and reporting greenhouse gas emission volumes.

Third-Party Verification

Scope 1 and Scope 2 Emissions

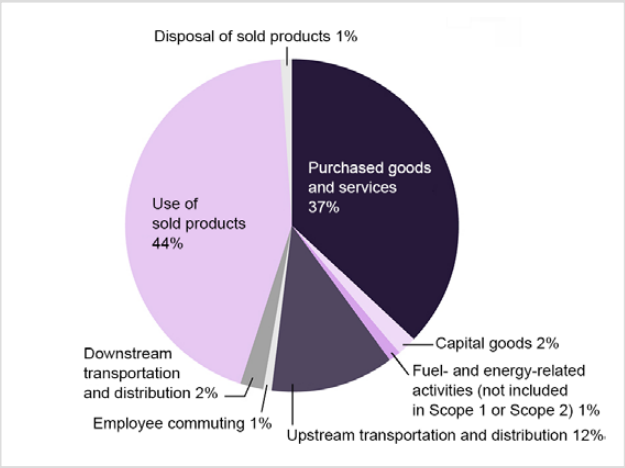
(Yamaha Corporation and all production sites)*7 *8 *9 *10



Scope 3 Emissions

(Fiscal 2021)

(Yamaha Corporation and all production sites)



*7 The scope of data collection is comprised of Yamaha Corporation headquarters and major factories and resort facilities around the world (estimated to account for over 95% of all Yamaha Group sites*8).

*8 Two new production sites (Yamaha Music India Pvt. Ltd. and PT. Yamaha Musical Products Asia) are not included among Yamaha Group business sites at this point in time.

*9 Figures differ from those previously released as figures were recalculated to further subdivide regional and power company coefficients by base and by fiscal year.

*10 Figures use the combined value of indirect emissions through purchased electricity and steam, direct emissions of CO_2 through in-house power generation and heat usage, and greenhouse gas emissions from manufacturing processes.

CO_2 Absorption through Tree Planting Activities in Indonesia

After conducting Yamaha Forest tree planting activities in Indonesia over the period from fiscal 2006 to fiscal 2017, the Company confirmed the growth status of the forest via satellite imagery and estimated the volume of CO_2 absorbed by the trees in fiscal 2018. The Company estimates that approximately 42,000 tons of CO_2 have been absorbed to date.

Protection of Biodiversity

Yamaha Group Environmental Data

Greenhouse Gas Emission Reduction Initiatives

Manufacturing Process Initiatives

Energy Conservation Activities at String and Percussion Instrument Factory

Yamaha Music Manufacturing Japan Corporation, which manufactures string and percussion instruments, has established the Energy-saving Promotion Committee and has been engaged in initiatives to reduce CO_2 emissions. Measures taken have included ensuring the appropriate pressure for compressors, partitioning work booths, introducing power usage monitors, and installing door and window screens for ventilation in offices. This company is also implementing measures to improve energy efficiency and to save space by consolidating equipment inside factories and rationalizing equipment layouts. Furthermore, this company has applied a thermal-barrier coating to the roof of the factory, improving air-conditioning efficiency as a result.

Energy Conservation Measures at Piano Factory

Yamaha Music Manufacturing Japan is conducting a range of ongoing efforts to conserve energy. Specific activities include removing unnecessary lighting, changing from fluorescent lighting to LED lighting, replacing prior compressors with inverter compressors, upgrading distribution transformers and air-conditioning equipment, and improving air-conditioning control. Energy conservation efforts in fiscal 2021 included integrated compressor control to allow for efficient operation during low-load periods. Through these activities, this company has succeeded in reducing CO_2 emissions by 452 t-CO_2 and cutting electricity usage by 708 MWh on an aggregate basis over the seven-year period from fiscal 2015 to fiscal 2021. Furthermore, cogeneration systems have been utilized to cut CO_2 emissions by 2,900 t-CO_2 a year (equivalent to 420 kL of crude oil a year).

Cogeneration system at Kakegawa Factory

Reduction of Peak Power Consumption at Factory

At Yamaha Fine Technologies Co., Ltd., steps are taken to cut peak power consumption during the summer by efficiently managing air conditioning and sprinkling water on the factory roof. In addition, a summer-time system was introduced in fiscal 2015. Over the three-month period from July to September, the work start time is moved two hours ahead to 6:00 a.m. for certain automobile interior parts painting processes that require high levels of air conditioning. Through these measures, the peak power consumption point was shifted from 2:00 p.m. to 11:00 a.m. As a result, peak power consumption was reduced by approximately 310 kW in the hotter part of the afternoon, and power consumption was lowered by 200,000 kWh during the three-month period from July to September. Moreover, this company is making efforts to conserve electricity, such as improving labor efficiency by shortening facility operating hours, reviewing workplace layouts to reduce air-conditioning requirements, and revising how steam is used during the winter.

Energy Conservation Activities at a Factory in China

Hangzhou Yamaha Musical Instruments Co., Ltd., has introduced various energy conservation activities that include making technological improvements and enhancing management of daily work activities to curb the increase in energy consumption stemming from rising production levels. Recognizing these energy conservation activities and other environmental initiatives, Hangzhou City officials presented this company with a Cleaner Production Certification in accordance with China's Cleaner Production Promotion Law at the end of 2011. Since then, this company has continued to implement the following measures to reduce energy usage.

- Appropriate operation management of dust collectors
- Shortening of water supply operation times, strategic positioning of lighting, and reduction of lighting usage times
- Installation of automatic control system for dust collectors and digital electricity meters in switchboards to enhance management of electricity consumption and reduce losses from idle power consumption by machinery at night
- Sequential shift from fluorescent lighting to LED lighting

Bulletin board providing notice of energy conservation and other environmental activities


Environmental education for employees

Environmental Initiatives at Resort Facilities

Yamaha Resort Inc. is implementing the following CO_2 emission reduction initiatives at the resort facilities it operates.

Reduction of CO_2 Emissions and Fuel Consumption in Golf Course Operations (Katsuragi Golf Club):

- Annual reductions in CO_2 emissions of more than 8 tons achieved by switching from gasoline golf carts to electric carts (fiscal 2014)
- Annual electricity savings of 25 MWh through "green fan" initiatives (greens maintenance) and adjustment of facility air conditioning (fiscal 2019–2020)
- Approx. 30% reduction in boiler fuel consumption (heavy oil) and one-hour reduction in boiler operation time through replacement of all large-scale, air-conditioning systems that use hot water for heating with energy-efficient air-cooling systems (completed in fiscal 2020)

Reduction of CO_2 Emissions in Hotel Operations (Katsuragi Kitanomaru):

- Two high-efficiency boilers installed to replace existing boilers in both fiscal 2019 and fiscal 2020

Transition to LED Lighting (Katsuragi Golf Club and Katsuragi Kitanomaru):

- Annual electricity savings of 49 MWh through switch to LED lighting and installation of motion sensors in restrooms (fiscal 2018–2020)
- Annual electricity savings of 28 MWh through replacement of mercury lamps with LED lighting in clubhouse lobby and Kitanomaru garden (fiscal 2021)

Initiatives at Offices

Priority Electricity Conservation Measures

Electricity conservation measures at offices include reducing the amount of lighting (after verifying lighting levels), introducing LED lighting, turning off lit advertisements, halting elevator operation, and notifying employees of electricity consumption amounts to raise awareness.

Transition to LED Lighting

The Yamaha Corporation headquarters is promoting the transition to LED lighting in office spaces, and approximately 1,200 fluorescent lights and mercury lamps have been replaced with LED lighting over the eight-year period spanning from fiscal 2014 to fiscal 2021. As a result, annual electricity consumption has been reduced by 52 MWh. Meanwhile, the transition to LED lighting outside of the Toyooka Factory has produced annual savings of 44 MWh while an additional reduction of 50 MWh in annual electricity consumption has been achieved by replacing approximately 3,700 fluorescent lights inside of the factory with LED lighting over the five-year period from fiscal 2017 to fiscal 2021. Going forward, we will continue to systematically transition to LED lighting in factories and offices.

"Cool Biz" and "Warm Biz" Initiatives

During summer (May to October), we encourage employees to wear cooler attire, such as by not using a necktie, and set the air-conditioning temperature to over 28°C. In winter (November to March), employees are asked to wear warmer clothes so as not to rely too heavily on heating, and the temperature of heaters is set to under 20°C.

In-house educational posters promoting the "Cool Biz" and "Warm Biz" programs

Initiatives in Logistics

Energy Conservation and CO_2 Emission Reduction in Logistics

The Yamaha Group is working to increase energy efficiency and reduce CO_2 emissions in logistics operations together with efforts to improve transportation efficiency and shorten transportation lead times. To this end, we are incorporating CO_2 emission reduction initiatives into various activities. For example, we are working to raise truck and container loading ratios, review warehouse locations and transport routes to shorten transportation distances, examine the possibility of incorporating low-carbon modes of transportation (ships and trains), revise transportation packing specifications, conduct joint transportation with other companies, and dispose of waste in the area it is produced.

The Group's total domestic transport volume (including transportation by domestic sales companies, etc.) in fiscal 2018 remained about the same as fiscal 2017 at 18.6 million ton-kilometers. CO_2 emissions were also relatively unchanged year on year at 2,820 t-CO_2.

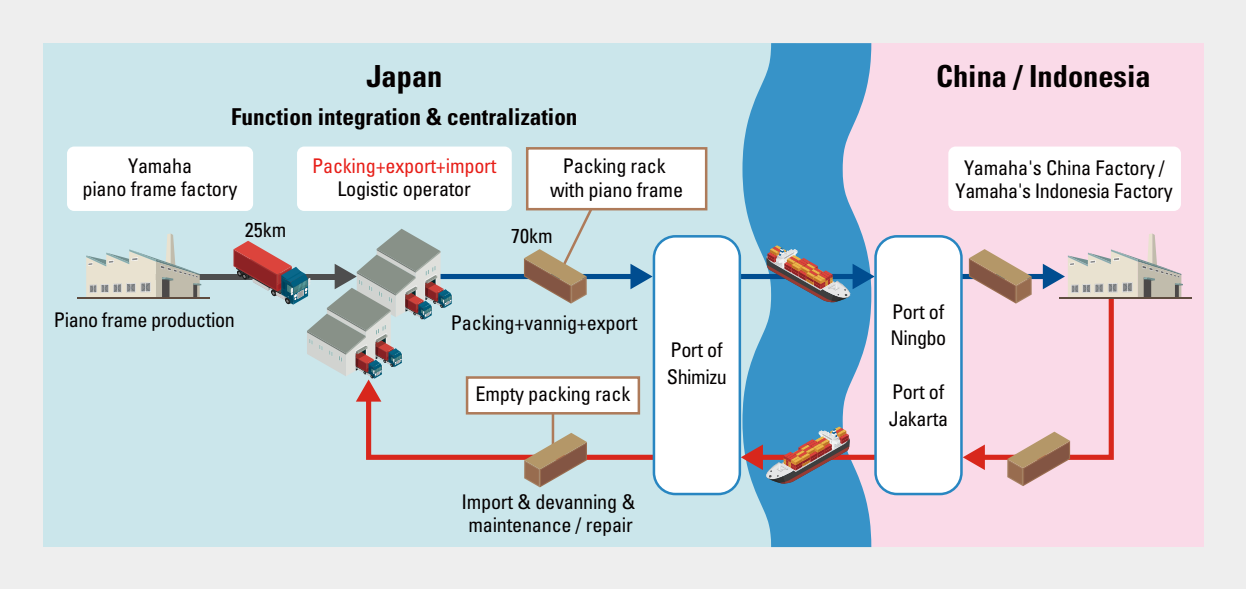
Reducing CO_2 emissions from logistics requires the cooperation of transportation companies. As such, we are working with them to develop the necessary systems by requesting that the transportation companies we work with cooperate in environmental efforts and incorporating environmental matters into questionnaires.

Yamaha Group Environmental Data

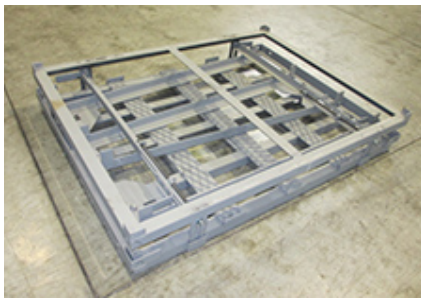
Resource Conservation and CO_2 Emission Reduction in Piano Frame Transportation

Previously, the Yamaha Group has used disposable iron packing racks when transporting piano frames from Japan to overseas factories. However, we are gradually introducing returnable packing racks for piano frames that can be used multiple times in order to conserve resources. In addition, by shortening transportation routes and improving load efficiency, the Company has achieved a 100-ton reduction in CO_2 emissions associated with the disposal of iron packing and a 1,600-ton reduction in iron resource consumption. Going forward, we will examine the possibility of shortening transport distances and reducing disposable packing material use, including for parts aside from piano frames.

Distribution flow using returnable packing racks



Returnable packing rack for grand piano frames



Folded returnable packing rack (when being returned)

Standardization of Packaging for Shipping Components and Materials to Conserve Resources and Reduce CO_2 Emissions

The Yamaha Group designs and standardizes packing boxes according to the sizes of the containers used in transportation, thereby improving container loading ratios. We have thereby been able to reduce the number of containers used and eliminate three tons of associated CO_2 emissions a year. The Group has also cut down on paper resource usage by designing packaging that uses as little cushioning and other packaging materials as possible. Going forward, it can be projected that the supply of materials and components from overseas locations to Japan will increase. Our first step to respond to this trend will be to design standard packing boxes for piano components that can be used for transportation between China and Japan, and we are engaged in verification testing with the aim of putting these packing boxes into practical use.

Loading container with pre-standardization packing boxes (left) and loading container with standardized packing boxes (right)

Endorsement of TCFD Recommendations

In June 2019, the Yamaha Group announced its endorsement of the recommendations of the TCFD. Based on these recommendations, we are analyzing the risks and opportunities for our business that could result from climate change. The results of these analyses are incorporated into management strategies, and information on the potential financial impacts is disclosed.

TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

Category	Initiatives
Governance	Addressing climate change has been positioned as an important management strategy and a portion of our sustainability governance and management systems. Climate change and other important sustainability issues are discussed at least four times a year at meetings of the Climate Change Working Group, a working group chaired by a managing executive officer positioned under the Sustainability Committee, which is chaired by the president, established in January 2021, and the results of these discussions are reported to the Board of Directors to make for a system of appropriate supervision by the Board of Directors. Measures for responding to climate change-related risks and opportunities are discussed by the Climate Change Working Group on a monthly basis, and the results of these discussions are reported to the Sustainability Committee.
Strategy	The risks and opportunities that may result from rapid climate change or the accompanying phenomena are incorporated into the important elements of business strategies. For example, the current medium-term management plan includes among its core measures efforts to reduce greenhouse gas emissions, develop environmentally friendly products, and realize sustainable timber use. We recognize that the impacts of rapid climate change will likely be felt over the medium to long term Accordingly, we have defined the associated risks and opportunities from a medium- to long-term perspective looking to 2030 and beyond rather than based on the short-term timeframe of the three-year medium-term management plan. The identified risks will be periodically examined and revised based on internal and external trends going forward. **Risks and Opportunities** The Group employed various scenarios described by the International Energy Agency to determine the risks and opportunities that could occur as a result of the transformation of the operating environment in response to rapid climate change and the accompanying phenomena. The specific scenarios utilized were RCP*10 2.6 (2°C scenario) and RCP 8.5 (4°C scenario). Based on these scenarios, we are evaluating the degree of materiality of risks and opportunities based on their potential financial impact and likelihood of materialization. *10 Representative Concentration Pathway (RCP) scenarios are named based on the hypothetical radiative forcing level (the portion of energy transmitted to the earth that is trapped within its atmosphere) of the earth at the end of the century. For example, RCP 2.6 refers to a scenario in which this radiative forcing level is 2.6 w/m^2. **Major Climate Change-Related Risks and Opportunities** The Company has currently identified the following climate change-related risks and opportunities. Physical risks are being addressed by the Working Group for BCP and Disaster Prevention Management. Other risks are not expected to have a serious impact on the Company's business within the next several years. Long-term business impact projections and strategies associated with these risks are slated to be formulated by the Climate Change Working Group. **Transition Risks and Opportunities** ・Regulatory risks: Increased operating and equipment costs due to expanded carbon pricing (carbon taxes, etc.) and regulation ・Technological risks: Reduced sales and diminished corporate reputation due to delays in adopting to next-generation product or manufacturing technologies ・Market opportunities: Increased sales of energy-efficient products (instruments, audio equipment, etc.), voice communication equipment (for remote meetings), thermoelectric devices, and other products that contribute to the realization of a low-carbon or carbon-free society **Physical Risks** ・Abnormal weather risks: Increased damages to the Company or its supply chain from typhoons, floods, droughts, etc.
Risk Management	The Risk Management Committee has been established as an advisory body to the president, and regular evaluations and analyses are performed on the potential damages, frequency, and control levels of risks. This process is used to facilitate ongoing improvements in risk control levels by identifying risks and designating the divisions responsible for managing these risks. In addition, the Working Group for BCP and Disaster Prevention Management has been set up under the Risk Management Committee to establish business continuity plans (BCPs) and implement other business continuity management initiatives to address the physical risks associated with natural disasters. In fiscal 2020, we completed establishment of BCPs for all Yamaha business sites around the world. We have also taken precautionary measures such as installing drainage equipment to safeguard against damages from typhoons, floods, and other natural disasters projected on an individual business site-basis. We have also implemented measures such as revising the locations and structure of Company business sites and even external warehouses. Countermeasures have been put in place for all material risks that have been identified at this point in time, and we are committed to enhancing risk management initiatives going forward to ensure that there are no significant impacts to our business over the medium to long term.

Metrics and Targets	The Company has set the medium-term targets of reducing total Scope 1 and Scope 2 greenhouse gas emissions by 32% and total Scope 3 greenhouse gas emissions by 30% from fiscal 2018 levels by fiscal 2031. These targets were certified by international environmental organization SBT in June 2019. In addition, we have set a long-term target of cutting total Scope 1 and Scope 2 greenhouse gas emissions by 83% from fiscal 2018 levels by fiscal 2051. On a short-term basis, we have established the target of reducing CO_2 emissions per unit of production by 1% or more each year at major domestic business sites. We manage greenhouse gas emission volumes in accordance with the Greenhouse Gas Protocol, and third-party verification has been received for Scope 1 and Scope 2 and certain Scope 3 emissions since fiscal 2017. Energy consumption amounts pertaining to Scope 1 and Scope 2 emissions are calculated on a by-source basis, which is translated into greenhouse gas emission data using emission coefficients. Third-party verification is received for this data. One example of CO_2 emission reduction activities was the fiscal 2020 switch to renewable energy for a portion of the electricity purchased at the Yamaha Corporation headquarters. In fiscal 2022, we intend to transition completely to renewable energy at our headquarters, and we are planning a phased increase in the portion of electricity purchased from renewable sources at other bases going forward.

Protection of Biodiversity

Responsibility as a Company Using Timber

The Yamaha Group conducts business activities that utilize natural resources, such as the timber used as a raw material to make a variety of products including acoustic musical instruments, and the ecosystems that produce these resources. The Group promotes appropriate business activities and appropriate timber use as well as environmental preservation activities based on its commitments for the preservation of forests and the protection of biodiversity, as stated in the Yamaha Group Sustainability Policy and the Yamaha Group Environmental Policy.

» Yamaha Group Sustainability Policy
» Yamaha Group Environmental Policy
» Sustainable Resource Use

Environmental Preservation and Biodiversity Protection Initiatives

Chemical Substance-Related Initiatives

To limit the impact of chemical substances on the environment and ecosystems, the Yamaha Group is working to enhance management and reduce usage of chemical substances while implementing measures to prevent leakage.

» Prevention of Pollution

Water Quality Preservation

The Yamaha Group is building treatment facilities and conducting monitoring and audits to prevent wastewater from factories from contaminating public water systems, soil, and groundwater.

» Prevention of Pollution

Evaluation of the Impact of Factory Wastewater on Ecosystems (Toyooka Factory)

Yamaha Music Manufacturing Japan Corporation, which is located within the Yamaha Corporation Toyooka Factory, conducts the production of wind instruments. Wastewater containing chemical substances from the wind instrument production process at this company is detoxified before being released into waterways. The impact of such factory wastewater is evaluated using the bioresponsive Whole Effluent Toxicity method,* and these evaluations have confirmed that the impact on ecosystems is minimal.

* The Whole Effluent Toxicity method is a wastewater management method that evaluates whether wastewater from factories and business sites is harmful to ecosystems by measuring the impact on the existence, growth, and reproduction of aquatic organisms, such as algae, water fleas, and fish in diluted wastewater.

Preservation of Forests and Natural Environments

Yamaha Forest Activities in Indonesia

Over the period spanning from fiscal 2006 to fiscal 2017, Yamaha Corporation and six local Indonesian subsidiaries carried out Yamaha Forest activities in the form of planting saplings in Indonesia, thus contributing to the regional society.

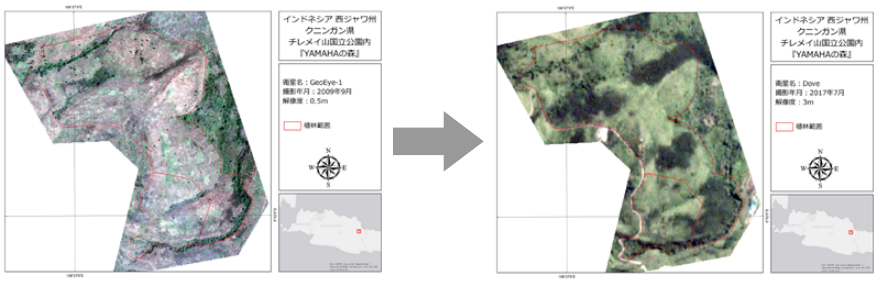
Indonesia is a treasure trove of diverse species. In recent years, however, the forests that produce the bounty of biodiversity have been in rapid decline. Phase 1 activities of the Yamaha Forest project began in fiscal 2006 and involved planting approximately 110,000 saplings over roughly 127 hectares of public land in Sukabumi, West Java in a joint effort to restore the functionality of forests by Yamaha Motor Co., Ltd., and its subsidiaries. This area has been designated by the provincial government as HUNTAN KOTA (city forest preserve) and is managed appropriately. Phase 2 of the Yamaha Forest project, which commenced in fiscal 2011, involved planting approximately 50,000 saplings over about 50 hectares of arid land in Mt. Ciremai National Park in Kuningan, West Java to regenerate natural forests and restore ecosystems. In a joint effort with the Japan International Cooperation Agency (JICA), the Ministry of Forestry of Indonesia, and the Forestry Department of the University of Kuningan, we planted tree types selected based on academic studies in order to restore natural forests and rehabilitate ecosystems in accordance with regional characteristics. Furthermore, annual tree planting events saw participation by local associates. These events consisted of commemorative tree planting and environmental education programs for children from local communities. Yamaha Corporation transferred control of this area to Mt. Ciremai National Park in fiscal 2017, and the area is being preserved for future generations through the management of the local government and other people involved.

In fiscal 2018, the Company confirmed the status of forest growth using satellite imagery and estimated the CO_2 emissions absorbed by the trees in the Yamaha Forest areas from both Phases 1 and 2 of the project. The Company estimates that approximately 42,000 tons of CO_2 have been absorbed to date.

Record of Yamaha Forest Activities in Indonesia

	Phase 1 (Fiscal 2006–2010)	Phase 2 (Fiscal 2011–2015)
Sponsor	Yamaha Corporation and six local Indonesian subsidiaries Yamaha Motor Co., Ltd., and two local Indonesian subsidiaries	Yamaha Corporation and six local Indonesian subsidiaries
Cooperation	The Organization for Industrial, Spiritual and Cultural Advancement International	JICA, Local National Park Management Office, National Kuningan University Forest Department
Location	Sukabumi Regency, West Java, Indonesia	Mt. Ciremai National Park, Kuningan, West Java, Indonesia
Period	Period From December 2005 to March 2010	From December 2010 to March 2015 (planting activities) April 2015 to March 2017 (Maintenance)
Main cause of forest loss	Destructive deforestation	Forest fires
Purpose	Recovery of biodiversity, water source protection, prevention of soil erosion, and CO_2 absorption and fixation	Recovery of biodiversity, water source protection, prevention of soil erosion, and CO_2 absorption and fixation
Area	Approx. 126.7 ha	Approx. 50 ha
Number of trees planted	115,110	52,870
Type of tree	Total of 21 including mahogany, teak (Tectona grandis), Paraserianthes falcataria, eucalyptus, melina, and meranti	Total of 46 indigenous species selected based on vegetation surveys (bayur (Pterospermum acerifolium), Peutag, Salam, Acacia Mimosa, Teurap, etc.)
Details of activities	• Tree planting and management • Tree planting ceremony (total of 9,180 participants) • Environmental education activities (planting activities at farmers' groups and schools, etc.) • Education support (donations of desks, chairs, etc.) • Regional support (construction of community water areas)	• Tree planting and management (participation in JICA's Rehabilitating Degraded Lands Project for Protection of Biodiversity) • Tree planting ceremony (total of 1,300 participants) • Environmental education activities for elementary school students
Volume of CO_2 absorbed (Fiscal 2018 estimate)	30,929 tons (12-year total)	11,542 tons (7-year total)

Planting area at start of tree planting activities in 2011 (left) and after steady growth in 2017 (right)



Satellite imagery of planting area (left: 2009, right: 2017; based on survey performed by Kokusai Kogyo Co., Ltd.)

Enshunada Coastal Forest Recovery Support

In March 2007, Yamaha Corporation signed a supporter of future forests in Shizuoka agreement with Shizuoka Prefecture and Hamamatsu City. Based on this agreement, Yamaha Corporation works to support the reforestation of the Enshunada Coastal Forest owned by Hamamatsu City. These activities include continuously planting saplings in a coastal forest that was seriously damaged by pine weevils. Planted on an annual basis, the trees have been growing steadily.

In November 2020, environmental staff observed the growth of the trees planted thus far, confirming that they have been developing properly.

Record of Tree Planting Activities

Iteration	Number of trees planted	Types of trees
1st (2007)	115	Ubame oak (Quercus phillyraeoides), Japanese camellia (Camellia japonica), and wax myrtle (Myrica rubra)
2nd (2008)	180	Ubame oak (Quercus phillyraeoides), Japanese camellia (Camellia japonica), wax myrtle (Myrica rubra), and elegance female holly (Ilex integra)
3rd (2009)	150	Japanese camellia (Camellia japonica), ubame oak (Quercus phillyraeoides), elegance female holly (Ilex integra), camphor tree (Cinnamomum camphora), yeddo hawthorn (Rhaphiolepis indica var. umbellata), Japanese hackberry (Celtis sinensis var. japonica), and Japanese pittosporum (Pittosporum tobira)
4th (2010)	155	Japanese hackberry (Celtis sinensis var. japonica), camphor tree (Cinnamomum camphora), elegance female holly (Ilex integra), ubame oak (Quercus phillyraeoides), Dendropanax trifidus, and yeddo hawthorn (Rhaphiolepis indica var. umbellata)
5th (2011)	160	Wax myrtle (Myrica rubra), kurogane holly (Ilex rotunda), Japanese pittosporum (Pittosporum tobira), Dendropanax trifidus, and border privet (Ligustrum obtusifolium)
6th (2012)	200	Japanese cinnamon (Cinnamomum japonicum), kurogane holly (Ilex rotunda), Daphniphyllum teijsmannii, Japanese spindletree (Euonymus japonicus), and border privet (Ligustrum obtusifolium)
(Activities halted in 2013 for the purpose of constructing tide embankments.)		
7th (2014)	300	Wax myrtle (Myrica rubra), Japanese hackberry (Celtis sinensis var. japonica), Neolitsea sericea, and black pine (Pinus thunbergii)
8th (2015)	480	Ubame oak (Quercus phillyraeoides), Japanese spindletree (Euonymus japonicus), yeddo hawthorn (Rhaphiolepis indica var. umbellata), Japanese pittosporum (Pittosporum tobira), and black pine (Pinus thunbergii)
9th (2016)	245	Ubame oak (Quercus phillyraeoides), Japanese spindletree (Euonymus japonicus), and black pine (Pinus thunbergii)
10th (2017)	330	Resistant black pine (Pinus thunbergii)
11th (2018)	300	Resistant black pine (Pinus thunbergii)
12th (2019)	300	Resistant black pine (Pinus thunbergii)
Total	2,915	

Note: Tree planting activities were canceled in 2020 due to the COVID-19 pandemic (the growth of trees planted thus far was observed instead).


Tree planting activities

Participants in tree planting activities



Observation of planted tree growth

These activities were given the certification label (smile label) by the office overseeing supporters of future forests in Shizuoka in the Forest Resources Division of the Environmental Protection Bureau of Shizuoka Prefecture's Community and Environmental Affairs Department. This label certifies that these activities serve as a physical contribution (smile 1), a financial contribution (smile 2), and a partnership with the region (smile 3).

Smile 1: Physical contribution

Smile 2: Financial contribution

Smile 3: Partnership with the region

Scarce Species Protection Activities

In September 2019, the Baby Sea Turtle Observation and Sustainable Beach Strategy event planned by Yamaha Motor Co., Ltd., was held at Enshunada Beach in Hamamatsu City, Shizuoka Prefecture. Approximately 60 employees from the Yamaha Group participated. Since 1991, Yamaha Motor has continued to conduct these coastal ecosystem preservation activities to help save loggerhead sea turtles (Caretta caretta), which have been categorized as an endangered species.

On the day of the event, members learned about the habitat and coastal environment of the turtles, released baby turtles into the ocean, and removed waste from the beach. Vegetation not indigenous to the area was also removed from the beach to protect tiger beetles (Chaetodera laetescripta), scarce organisms that live on the sandy beach.


Baby loggerhead sea turtles released into the ocean


Non-indigenous vegetation removal activities

Application of Environmental Technologies

Products Supporting Environmental Impact Reduction

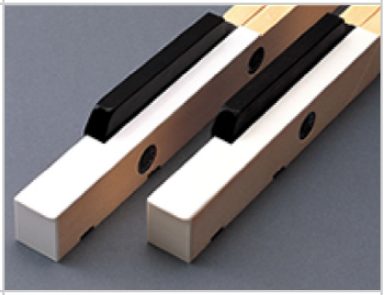
Product / Service	Environmental Characteristics / Benefits	Photograph
Micro prober flexible printed circuit conduction and insulation inspection devices (Yamaha Fine Technologies Co., Ltd.)	Waste reduction and resource conservation benefits from improved yield rates for product subject to tests	
Helium leak tester (Yamaha Fine Technologies Co., Ltd. product)	Support for compliance with automobile environmental regulations and reductions in environment impacts from driving	
Hydrogen leak detectors (Yamaha Fine Technologies Co., Ltd. product)	Promotion of hydrogen as next-generation energy	

Products Designed with Consideration for Timber Resources

Products Designed to Conserve Natural Timber Resources

Product / Service	Overview	Photograph
RGX-A2 electric guitar (Japanese Only)	Uses afforested timber in place of natural timber	

Products Using Alternatives for Scarce Timber

Product / Service	Overview	Photograph
Acoustalon™ glass-strengthened plastic resin	Use of substitutes for scarce timber in marimba sound board parts	
Ebony-style natural wood	Substitute for black piano key parts made from scarce ebony that uses alternative material	
Carbon bows	Use of substitutes for brazilwood and other scarce timber	

Products that Limit Chemical Substance Use (Enhancement of Timber Using A.R.E.*)

Product / Service	Overview	Photograph
YVN500S acoustic violins, L Series acoustic guitars, etc.	Use of A.R.E.* treatment on body materials to improve sound characteristics without using chemical substances	
Yamaha Hall in the Yamaha Ginza Building (Japanese Only)	Use of A.R.E.* treatment on stage floor to improve the sound characteristics without using chemical substances	

* Acoustic Resonance Enhancement (A.R.E.) is Yamaha's proprietary technology for artificially stimulating the same changes in wood that occur during natural aging in a short time to improve acoustic characteristics. Through precise control of temperature, humidity, and atmospheric pressure using a specialized device, the acoustic properties of the new wood can be manipulated to realize a more ideal condition that is similar to the acoustic characteristics of wood materials in instruments that have been played for years. Prior timber enhancement technologies often utilize chemical agent-based enhancement methods; A.R.E., however, does not use any chemical agents in the processing stage. Therefore, this technology has a lower environmental impact.

≫ Yamaha Eco-Products Program