

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

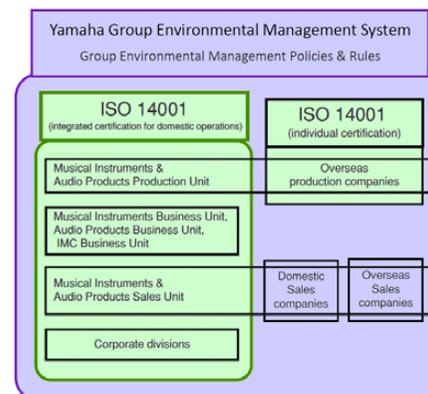
Recognizing environmental issues as important management issues, the Yamaha Group is earnest in its efforts to make ongoing contributions to the realization of a better global environment based on the Yamaha Group Environmental Policy. The Yamaha Group is engaged in initiatives through its business activities, 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 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 2021, the Working Group for Climate Change, the Working Group for Resource Circulation, and the Working Group for Procurement 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 own 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.

[» Sustainability Management System](#)



► 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, 2022, Yamaha Corporation and 22 domestic and overseas Group companies had acquired certification. These companies account for approximately 95% of the Group's greenhouse gas emissions (Scope 1 and 2).^{*1} The 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**► Internal Carbon Pricing**

The Yamaha Group introduced an internal carbon pricing system in April 2022. This system entails converting CO₂ emissions volumes into monetary amounts based on virtual prices and using these amounts when making investment decisions. This approach motivates the Company to invest in facilities with higher levels of energy efficiency and is expected to drive investment in solar power and other renewable energy generation equipment. For the foreseeable future, the Group will use an internal carbon price of ¥14,000 per every ton of CO₂.

► 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, resort facilities, and production bases in Indonesia, China, and Malaysia.

For details regarding environmental accounting, please refer to the [Environmental Data](#) page.

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. For example, 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 1,199 participants have obtained internal environmental auditor qualification, and of these, 318 employees are still currently employed by the Group, which represents approximately 6% of employees at relevant business sites (as of March 31, 2022). 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, the “My Eco Commitment Coloring Page” for families with children, and the promotion of Green Eco Curtains at homes.

In fiscal 2022, an aggregate total of 481 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



Works submitted through “My Eco Commitment Coloring Page”



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 road maps set on an individual business site-basis, and we plan to achieve full compliance with these standards at all sites in fiscal 2024. In this manner, we aim to keep the number of accidents resulting in environmental pollution at zero.

As of March 31, 2022, 17 of 19 sites were in full compliance with the Yamaha Group Environmental Equipment Standards.

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 corrective measures.

In addition, we have systems in place to facilitate quick responses to revisions to laws and regulations. The Yamaha 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.

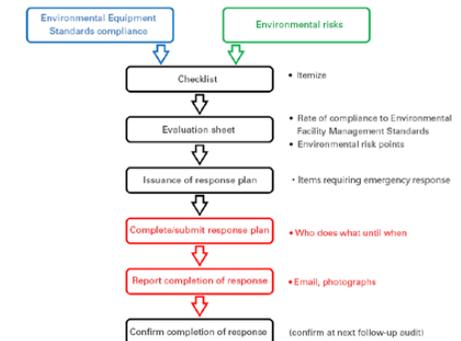


Environmental measurements being performed

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 2022, we conducted environmental audits at six sites.



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 emergency 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.



Groundwater purification equipment at our headquarters

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 five sites: Toyooka, Tenryu, Iwata, Katsuragi, and Kitami Mokuza. At the main factory of Yamaha Music Manufacturing Japan Corporation, the Company upgraded wastewater processing equipment in 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.



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 (the "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 have completed the introduction of VOC treatment equipment, resulting in a reduction of approximately 90% in emissions of such substances. Meanwhile, PT. Yamaha Music Manufacturing Asia in Indonesia is implementing thinning agent recycling initiatives and has been able to achieve a reduction in emissions of these substances of approximately 70%.

*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.



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.



VOC treatment facility at Yamaha Electronics (Suzhou) Co., Ltd.

► Reduction of Chemical Substance Emissions in Coating Processes

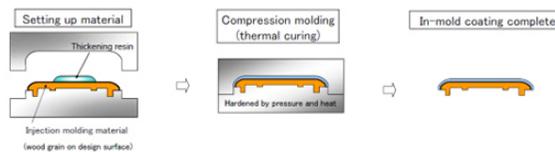
Coating processes are performed to give musical instruments and automotive interior components their beautiful appearance and durability. In these processes, the Yamaha Group continues to research and introduce coating methods that lower environmental impacts by reducing the use of coating agents and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

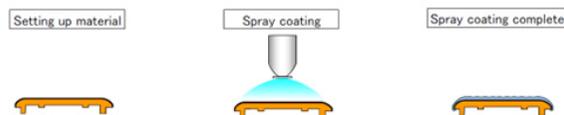
Similarly, Yamaha Fine Technologies Co., Ltd., has developed an in-mold coating method that completes the coating process inside of the mold. This method has been adapted for automobile interior components. By switching from traditional spray coating to in-mold coating, this company has achieved adhesion 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 2022 by 48.8 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 2022, the Yamaha Group did not conduct any serious violations of 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.

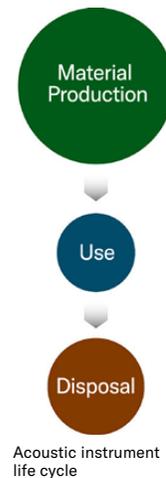
Acoustic Instruments

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



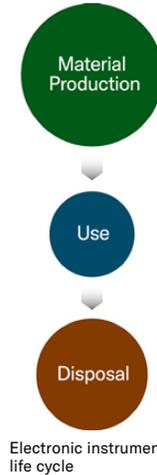
Electronic Instruments

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



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



► 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 has implemented a management system for such chemical substances, 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 Group uses the chemSHERPA® (chemical information SHaring and Exchange under Reporting PArtnership in supply chain) standard endorsed by the Joint Article Management Promotion-consortium (JAMP) for providing information on chemical substances contained in products. 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

In accordance with the Yamaha Group Green Procurement Policy, 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 policy 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 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 the Yamaha Eco-Products Program (As of March 31, 2022)

A total of 14 new product models were certified under the Yamaha Eco-Products Program in fiscal 2022. As of March 31, 2022, the number of certified products, including prior products, was 468, of which five were newly developed products bearing the Yamaha Eco-Label.

In fiscal 2022, sales of Yamaha Eco-Label certified products accounted for approximately 18% of total net sales.

Product Certified in Fiscal 2022



TW-E5B truly wireless Bluetooth earphones

Reason for certification: Resource conservation (elimination of plastic shock absorbers)

» Sustainable Consumption
» Yamaha Eco-Products Program



Yamaha Eco-Label

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

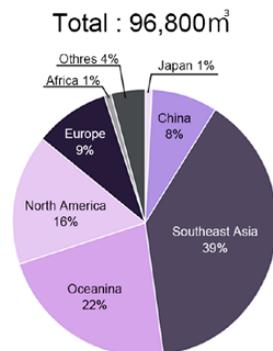
Many of the instruments that the Yamaha Group produces, such as pianos and string, percussion, and wind instruments, are primarily made of wood. Large amounts of timber are also used when making electronic musical instruments, speakers, and soundproof rooms, due to the merits of wood in terms of acoustic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

Breakdown of Timber Resources Used by the Yamaha Group by Origin (Fiscal 2022)

Breakdown of Timber Purchase Volumes by Location



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

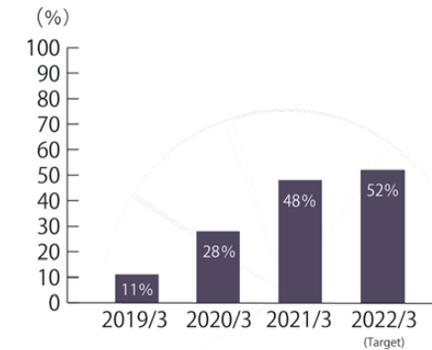
For details regarding specific volume figures, please refer to the [Environmental Data](#) page.

► Timber Due Diligence

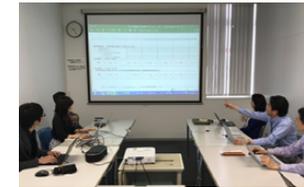
Sustainable use of timber requires consideration for forest conservation and for timber resource volumes. At the same time, it is crucial to contribute to community development through employment opportunities and infrastructure to sustain the economic viability of the supply chain. The Yamaha Group 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 99.4% (volume ratio) of procured timber was low risk in fiscal 2022. 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 52% of timber purchase in fiscal 2022 (by volume, compared with 48% in fiscal 2021). The Group was thereby able to realize the goal of achieving a 50% ratio of certified timber use over the three years leading up to fiscal 2022 set in the medium-term management plan announced in April 2019.

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 have been 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 2016 to 2019, 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, in 2017 we began conducting regular African blackwood tree planting activities with the goal of fostering future forest resources. The scope of these activities is being expanded as we work together with local NGOs and community members to introduce tree planting and propagation techniques, and saplings cultivation, tree planting, and other forest management activities are becoming entrenched within communities as a result. Currently, three communities are taking part in these activities, and, in fiscal 2022, we planted approximately 4,500 seedlings, making for an aggregate total of around 12,000 saplings planted across an area of roughly 6.5 ha over five 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 Mokuzaï Co., Ltd., a Hokkaido-based company that manufactures piano soundboards, signed an agreement with the Okhotsk General Subprefectural Bureau and the town of Engaru, Monbetsu-gun, Hokkaido Prefecture in March 2016 under which these organizations have been working together to foster sustainable forests and expand the demand for Sakhalin spruce (*Picea glehnii*) plantation timber. These activities were expanded on in 2021 with the conclusion of a comprehensive cooperation agreement between Hokkaido Prefecture and Yamaha Corporation, which broadened the scope of these forestry activities to include the entirety of Hokkaido Prefecture. Yamaha has long used Hokkaido-grown Sakhalin spruce in its piano soundboards, but the recent decline in naturally grown timber has resulted in us changing to imported wood for the majority of our piano soundboards. Under the aforementioned agreement with Hokkaido Prefecture, we will take part in collaborative activities ranging from research to community events for promoting appropriate management, tree planting, and other forestry activities targeting Sakhalin spruce plantation timber, including those trees owned by the prefectural government, local governments, and Kitami Mokuzaï. In October 2021, we followed up on our activities in 2020 by once again holding a tree planning event at an Engaru Town Sakhalin spruce plantation. In this second iteration of this event, a group of approximately 80 people comprised of employees of Kitami

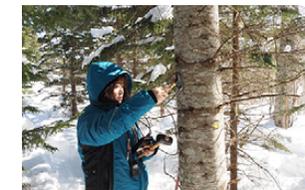
Mokuzaï and members of their families gathered to plant some 200 Sakhalin spruce saplings. Moreover, we used a FAZER R industrial-use unmanned helicopter that employs the forest measurement technologies of Yamaha Motor Co., Ltd., to perform laser measurements of the trees aged 15 to 25 years in Kitami Mokuzaï's Sakhalin spruce plantation. The data of the 35-ha plantation acquired from 80 m in the air was combined with tree and environmental data collected within the plantation to be used in basic research on long-term Sakhalin spruce cultivation. The measurement and related survey activities were featured in Vol. 2 (Nurturing Forests Rich in Sound) of Yamaha Motor's Field-Born short SDG documentaries. We continue to transmit information about our activities through participation in the forestry initiatives of universities and local communities with the goals of ensuring a reliable supply of high-quality Sakhalin spruce for use in piano soundboards while also educating younger generations about the importance of forest resources.



Sakhalin spruce trees aged 25 years (Kitami Mokuzaï plantation)



Governor of Hokkaido Naomichi Suzuki and Yamaha President Takuya Nakata at signing ceremony



Forest survey



Yamaha Motor FAZER R industrial-use unmanned helicopter



Employees of Kitami Mokuzaï and members of their families taking part in second tree planting 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.

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 \(in Japanese only\)](#)

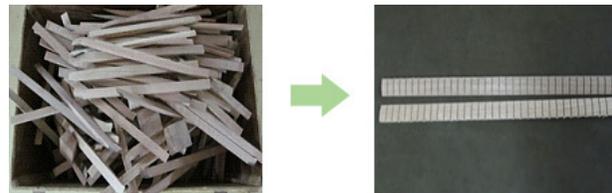
► Utilization of Sustainable and Recyclable Materials

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 of 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 Group had a recycling rate of approximately 99% as of March 31, 2022.

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	The Company has 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%.
	We process waste containing rare metals from the R&D Department as a valuable resource and make effective use of this resource.
	The Company has introduced a liquid waste reduction CD dryer, taking the place of the decompression and concentration equipment, which contributed to an approximately 30% reduction in emissions of specified controlled industrial waste, such as waste acids and waste alkali.
Kakegawa Factory	The Company has installed more wastewater processing equipment and begun 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.
	The Company has augmented its ability to process wastewater containing adhesive agents. These efforts have led to annual waste reductions of approximately 270 tons.
	In 2021, the Company began using sawdust created through timber processing to produce cat litter and other items.
Kitami Mokuzai Co., Ltd.	A liquid waste reduction CD dryer has been installed, resulting in a 50% reduction in emissions of wastewater, sludge, and other waste.
Xiaoshan Yamaha Musical Instruments Co., Ltd.	The company has 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.	The company takes steps to 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 Mokuzaei)

For details regarding waste, please refer to the [Environmental Data](#) page

► Product and Packaging Recycling

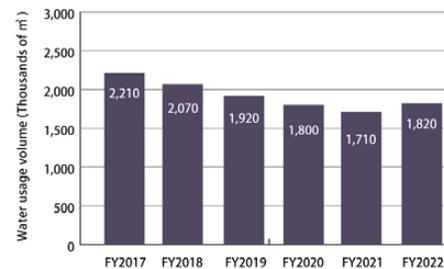
The Yamaha Group complies with laws and ordinances related to recycling products and packaging in relevant countries and regions, including the Waste Electrical and Electronic Equipment (WEEE) Directive of the European Union. In addition, we are promoting efficient use of resources in Japan by establishing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

Meanwhile, the plating and washing processes involved in wind instrument manufacturing use large volumes of water. Recognizing this fact, since the early 1970s the 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

Water Usage*



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

* 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

For details regarding water usage and reuse, please refer to the [Environmental Data](#) page.

► 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, Yamaha Musical Products Indonesia 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

In response to increasingly strict wastewater standards, piano and guitar manufacturer Hangzhou Yamaha Musical Instruments Co., Ltd., has installed a wastewater treatment facility capable of purifying wastewater 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 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 introduced a state-of-the-art wastewater treatment facility designed for the purpose of reusing wastewater in manufacturing processes.



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 the guidance of the Working Group for Climate Change, a working group chaired by a managing executive officer positioned under the Sustainability Committee, which is chaired by the president, the Yamaha Group is working to contribute to the global movement to reduce CO₂ 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. Later, in September 2021, the Company received certification for a new greenhouse gas emission target of achieving a reduction of 55% in Scope 1 and Scope 2 emissions from fiscal 2018 to be achieved by fiscal 2031, substantially higher than the prior target of a 32% reduction. The certification indicates that this new more ambitious target is viable for limiting global warming to 1.5°C above pre-industrial levels. The move was taken in response to the carbon neutrality trends of the international community. Furthermore, the Group declared its endorsement of the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD)^{*2} in June 2019 and commenced initiatives for analyzing the impact of climate change on its finances and disclosing related information. 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.



^{*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.



» Sustainable Consumption
» Yamaha Eco-Products Program

Targets, Measures, and Results

» Greenhouse Gas Emission Reduction Targets (SBT-Certified)

- Reduce total Scope 1^{*3} and Scope 2^{*4} greenhouse gas emissions by 55% from fiscal 2018 levels by fiscal 2031 (achieve effective carbon neutrality by fiscal 2051)
- 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
- Facilitate investment in high-efficiency and renewable energy equipment through internal carbon pricing system
- 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 CO₂ emissions per unit of production by 1% or more each year. For example, we have been introducing renewable energy at our business sites, and were thereby able to transition to renewable energy for 100% of the power used at the Company headquarters in April 2021. We then later switched to Shizuoka Green Electricity, a service that supplies electricity produced through hydroelectric power generation in Shizuoka Prefecture offered by Chubu Electric Power Miraiz Co., Inc., in September 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

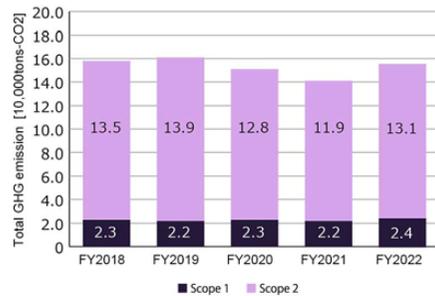


Logo for Shizuoka Green Electricity service providing carbon-free electricity produced in Shizuoka Prefecture



100% Renewable Energy Fujippi mark that can be displayed by business operators in Shizuoka Prefecture using 100% renewable energy

Scope 1 and Scope 2 Emissions (Yamaha Corporation and all production sites)*7 *8 *9 *10



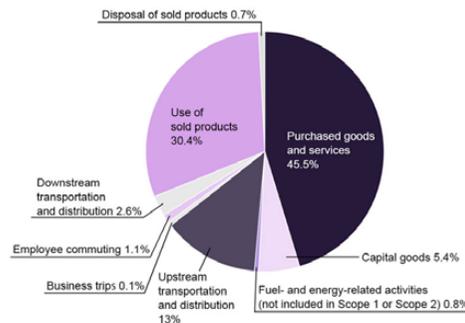
*7 The scope of data collection is comprised of Yamaha Corporation headquarters and major production sites and resort facilities worldwide (estimated to account for more than 95% of all Yamaha Group sites**).

*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 CO₂ through in-house power generation and heat usage, and greenhouse gas emissions from manufacturing processes.

Scope 3 Emissions (Fiscal 2022)



CO₂ Absorption through Tree Planting Activities in Indonesia

After conducting Yamaha Forest tree planting activities in Indonesia over the period from 2005 to 2016, the Company confirmed the growth status of the forest via satellite imagery and estimated the volume of CO₂ absorbed by the trees in 2017. The Company estimates that approximately 42,000 t-CO₂ had been absorbed leading up to 2017, and that 6,000 t-CO₂ have been absorbed on a consistent basis each year thereafter.

» Protection of Biodiversity
» Yamaha Group Environmental Data

Greenhouse Gas Emission Reduction Initiatives

Internal Carbon Pricing

The Yamaha Group has introduced an internal carbon pricing system based on the recognition that investing in renewable energy and highly energy-efficient equipment was imperative to addressing climate change risks. This system entails the assignment of internal carbon prices, which are then used to make investment decisions alongside criteria like the reductions to CO₂ emissions that would be produced by a given investment. As of April 1, 2022, the Group was using an internal carbon price of ¥14,000 per every ton of CO₂.

Factory Initiatives

Energy Conservation Activities at String and Percussion Instrument Factory

Yamaha Music Manufacturing Japan Corporation (the Iida Factory) has established the Energy-saving Promotion Committee and has been engaged in initiatives to reduce CO₂ 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 (the Kakegawa Factory) 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 CO₂ emissions by 500 t-CO₂ and cutting electricity usage by 840 MWh on an aggregate basis over the eight-year period from fiscal 2015 to fiscal 2022. Furthermore, cogeneration systems have been utilized to cut CO₂ emissions by 2,900 t-CO₂ a year (equivalent to 420 kL of crude oil a year).



Cogeneration system at Kakegawa Factory

Reduction of Peak Summer Power Consumption

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 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 CO₂ emission reduction initiatives at the resort facilities it operates.

Reduction of CO₂ Emissions and Fuel Consumption in Golf Course Operations (Katsuragi Golf Club):

- Annual reductions in CO₂ emissions of more than eight 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)
- Two high-efficiency boilers installed to replace existing boilers and introduction of four EV charging stations (fiscal 2022)

Reduction of CO₂ Emissions in Hotel Operations (Katsuragi Kitanomaru):

- Two high-efficiency boilers installed to replace existing boilers in both fiscal 2019 and fiscal 2020
- Upgrade to high-efficiency air-conditioning units using new refrigerants in seven customer rooms and installation of high-efficiency air-conditioning unit in hotel lobby (fiscal 2022)

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
- Annual electricity savings of 28 MWh through replacement of mercury lamps with LED lighting in clubhouse lobby and Kitanomaru garden

► 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 1,400 fluorescent lights and mercury lamps have been replaced with LED lighting over the nine-year period spanning from fiscal 2014 to fiscal 2022. 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 70 MWh in annual electricity consumption has been achieved by replacing approximately 5,100 fluorescent lights inside of the factory with LED lighting over the six-year period from fiscal 2017 to fiscal 2022. 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 CO₂ Emission Reduction in Logistics

The Yamaha Group is working to increase energy efficiency and reduce CO₂ emissions in logistics operations together with efforts to improve transportation efficiency and shorten transportation lead times. To this end, we are incorporating CO₂ 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.

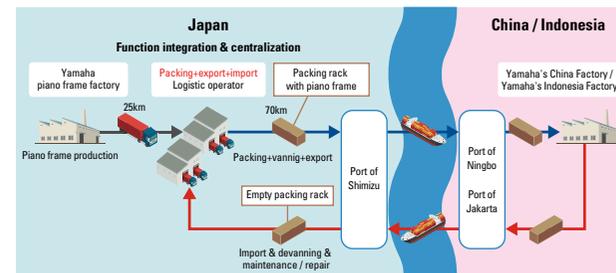
The Group's total domestic transport volume (including transportation by domestic sales companies, etc.) in fiscal 2022 decreased 3.1 million ton-kilometers year on year, to 1.6 million ton-kilometers. CO₂ emissions were down 566 t-CO₂ year on year, to 2,527 t-CO₂.

Reducing CO₂ 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 CO₂ 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 CO₂ 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 CO₂ Emissions

The Yamaha Group is pursuing enhanced efficiency in transportation by increasing the number of products shipped per container through the use of more compact packaging that better matches the sizes of the containers used during shipping. For example, a 17.0% reduction in the size of the packaging used for Yamaha P series digital pianos resulted in a 12.5% increase in container packing rates. This change led to an annual reduction in the number of 40-foot high-cube containers used of 269 together with a 26-ton decrease in annual CO₂ emission volumes.



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

Endorsement of TCFD Recommendations

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

In fiscal 2019, the Yamaha Group declared its endorsement of the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and commenced initiatives for analyzing the risks and opportunities for its business created by climate change. This information is reflected in management strategies, and information on the financial impacts of these risks and opportunities is disclosed.



► Yamaha's Initiatives

Governance

Climate change and other important sustainability issues are discussed at meetings of the Sustainability Committee, which is an advisory body to, and chaired by, the president that was established in January 2021, after which these matters are discussed and examined by the Board of Directors to make for a system of appropriate supervision by the Board of Directors. The Sustainability Committee met 10 times in fiscal 2022.

Measures for responding to climate change-related risks and opportunities are discussed by the Working Group for Climate Change, a working group chaired by a managing executive officer positioned under the Sustainability Committee, and the results of these discussions are reported to the Sustainability Committee.

In fiscal 2022, Yamaha revised its sustainability priorities (materiality), the management issues with the potential to impact corporate value over the medium to long term, to include climate change among these issues. The new medium-term management plan "Make Waves 2.0" launched in April 2022 defines "set sustainability as a source of value" as one of its key policies, thereby positioning response to climate change as a central theme of the plan

Strategy

Scenario analyses have been performed to confirm the potential impacts of climate change on the Yamaha Group. The specific scenarios utilized were the Sustainable Development Scenario (global warming of less than 2°C above pre-industrial levels) and the NZE Scenario (net zero emissions by 2050 and global warming of 1.5°C above pre-industrial levels) based on the 2021 World Energy Outlook of the International Energy Agency (IEA) for transition risks and the Representative Concentration Pathway (RCP) 8.5 (global warming of 4°C above pre-industrial levels) scenario from the Fifth Assessment Report of the Intergovernmental Panel on Climate Change for physical risks. Applied to all businesses, these assessments were used to identify short-term, medium-term, and long-term risks and opportunities.*1

*1 Risks and opportunities are classified as "short-term" if their impacts will be most strongly felt over the next several years, "medium-term" if their impacts will be felt leading up to 2030, and "long-term" if the impacts will appear in 2050.

Risk Management

The Risk Management Committee has been established as an advisory body to the president. This committee meets to discuss risk management-related themes from a Companywide perspective, and the findings of these discussions are reported to the president.

The committee also assesses and categorizes a variety of climate change and other risks based on the potential damages and frequency. In addition, risk control levels are evaluated to identify serious risks requiring priority attention, to designate the divisions responsible for managing these risks, and to thereby improve the overall level of risk management.

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 and implement other business continuity management initiatives to address the physical risks associated with natural disasters.

Relevant executive officers report on these activities to the Board of Directors, which carries out confirmation and oversight of the effectiveness and progress of risk management frameworks.

Metrics and Targets

Reductions to CO₂ emissions are managed in a comprehensive manner encompassing the entire Yamaha Group and its supply chains. To facilitate these efforts, the Greenhouse Gas Protocol is used as the standard for calculating total greenhouse gas emissions (Scope 1, Scope 2, and Scope 3 emissions), and third-party verification is received for these calculations.

Yamaha has set the medium-term targets of reducing total Scope 1 and Scope 2 greenhouse gas emissions by 55% (a target certified by Science Based Targets as sufficient for helping limit average global warming to below 1.5°C) and total Scope 3 greenhouse gas emissions by 30% from fiscal 2018 levels by fiscal 2031. In addition, we have set a long-term target for Scope 1 and Scope 2 emissions of achieving carbon neutrality by fiscal 2051.

» Scope 1, Scope 2, and Scope 3 emissions

In addition, we have set the goal of achieving a ratio of certified timber use of 50% by fiscal 2022 in order to help preserve forest resources and protect biodiversity. This goal was successfully accomplished in fiscal 2022 with a ratio of 52%. Going forward, we plan to establish internal standards to guide wider-ranging management of timber sustainability. At the moment, we are targeting a ratio of sustainable timber use, as defined based on our internal standards, of 75% in fiscal 2025. Ongoing initiatives will be advanced toward this goal.

Major Climate Change-Related Risks and Opportunities

Transition Risks	Major Short-Term Risks Major short-term risks include the risks of companies withdrawing from the timber business due to decarbonization trends, resulting in difficulties procuring timber. The Yamaha Group has proceeded to raise the rate at which it uses certified timber, which can be procured reliably, from the perspective of the sustainability of forest resources, and our	ratio of certified timber use was 52% on March 31, 2022. In addition, with our dedicated timber-related technology and procurement divisions, we have accumulated the expertise necessary to quickly switch to an alternative source should it become difficult to procure timber from a specific location
	Major Medium-Term Risks Major medium-term risks include the potential for the institution of various measures aimed at the realization of a decarbonized society to lead to higher energy prices and additional costs resulting from carbon pricing systems. To combat these risks, we altered our prior greenhouse gas emissions reduction target, which had been certified by Science Based Targets as a target for limiting global warming to 2°C above pre-industrial levels, and received certification for the new target in September 2021, indicating it as being viable for limiting global warming to 1.5°C above pre-industrial levels.	Initiatives in pursuit of this target include advancing Companywide energy conservation activities, utilizing renewable energy, developing energy-efficient products, streamlining logistics processes, and bolstering engagement with suppliers. In addition, we have introduced an internal carbon pricing scheme for the purpose of facilitating investment in low-emissions equipment and installed emissions-reducing provisions into new Company buildings. By accelerating initiatives to achieve this more ambitious target, we aim to mitigate various transition risks.
Physical Risks	Major Long-Term Risks Global warming threatens to change the environments in which the timber we procure is produced, which in turn would impede our ability to produce certain musical instruments. The Yamaha Group undertook an investigation that looked at scarce and difficult-to-substitute tree species from which it procures timber and was based on an academic thesis. This investigation indicated a possibility that the environments in which several of these tree species are cultivated might shrink as a result of global warming. Should it become difficult to procure timber from these tree species, resulting in increases in raw material prices, it would constitute a business risk. For this reason, we will carefully monitor circumstances related to the production of these tree species in the future and make preparations so that, should it be deemed that our operations might be impacted by these circumstances, we will be able to quickly shift to alternative tree species. Furthermore, the Group exercises due diligence in verifying the legality of tree harvesting methods to ensure that it does not purchase illegally harvested timber and thereby safeguard its ability to continue procuring timber in a sustainable manner. We are also pursuing ongoing improvements to our business resilience through multifaceted initiatives. One such initiative is the Tone Forest activities we engaged	in with timber-producing communities to foster high-quality resources used for manufacturing musical instruments with regard to scarce timber that may become more difficult to secure due to climate change. With regard to floods and other risks, we completed establishment of business continuity plans 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. In addition, we have implemented measures such as revising the locations and structure of Company business sites and even external warehouses. Furthermore, based on scenarios assuming global warming of 4°C above pre-industrial levels and once-in-a-century flooding in 2050, flooding risks and the effectiveness of flooding countermeasures were assessed for Yamaha Group bases, major distribution bases, and suppliers located in river-adjacent and coastal areas susceptible to floods around the world. These assessments found that no sites were at particularly high risk of flooding
Opportunities	Major Medium-Term Opportunities Major medium-term opportunities for Yamaha include the potential for increased demand for its products as people limit movement to help combat climate change. Specifically, it is possible that demand will grow for communications equipment. In addition, the trend toward decarbonization could drive the popularization of EVs,	creating the potential for the Yamaha Group to engage in new businesses through which it produces comprehensive sound atmospheres within vehicles as well as the opportunity to win additional support for customers for its audio technologies, which deliver high sound quality from lightweight equipment.
	Major Long-Term Opportunities Major long-term opportunities include the possibility that demand for our products will increase as factors like global warming place limitations on outdoor activities. These factors are anticipated to drive growth in demand for a variety of musical instruments as well as for communications equipment. Moreover, by developing	alternative materials with characteristics that are even more beneficial than those of the materials currently used, we aim to prepare for the potential depletion of the habits in which the timber suited to musical instrument production is grown. These provisions will allow us to provide value and take advantage of an even wider range of business opportunities.

Results of Scenario Analyses

Category	Impact Level	Risks and Opportunities		Reason, Impact, and Response	Impact on Business (Potential)
Transition risks (Global warming of 1.5°C)	Procurement	Short-term risks	Risk of difficulties in procuring timber because of companies withdrawing from the timber business due to decarbonization trends	<ul style="list-style-type: none"> The number of companies targeting net zero emissions is increasing, a trend that is expected to stimulate a rise demand for forest-associated carbon credits, which is in turn prompting forest owners to withdraw from timber businesses. The impacts of such withdrawals have been felt in certain timber-producing regions, but we are taking steps to mitigate the associated risks by utilizing alternative timber produced in different regions. Should a supplier of timber to Yamaha withdraw from the timber business, there is a risk that the Company may face difficulty securing the timber it needs to manufacture its products. However, with our dedicated timber-related technology and procurement divisions, we are able to quickly switch to an alternative source or develop alternative materials. The Company is progressively transitioning to certified timber from forests managed in a sustainable manner in its procurement of timber resources. 	--
	Direct operations	Medium-term risks	Risk of additional costs due to institution or increase of carbon prices	<ul style="list-style-type: none"> The IEA's NZE Scenario (net zero emissions by 2050) projects carbon prices of U.S.\$130 per t-CO₂ (approx. ¥15,000 per t-CO₂) in Japan, U.S.\$90 per t-CO₂ (approx. ¥10,000 per t-CO₂) in China, and U.S.\$15 per t-CO₂ (approx. ¥1,700 per t-CO₂) in Indonesia. These carbon prices will result in a rise in costs of approximately ¥1.6 billion in 2030. However, by accomplishing the greenhouse gas emissions reduction targets Yamaha put forth based on scenarios projecting global warming of 1.5°C, it should be possible to limit this rise in costs to ¥0.6 billion (yen amounts translated at a rate of ¥115 to U.S.\$1). An internal carbon price of ¥14,000 per t-CO₂ has been set for the purpose of accomplishing this target, which is being pursued by promoting investment in low-emissions equipment, increasing the energy efficiency of production divisions, and utilizing renewable energy. 	--
			Risk of additional costs due to increased procurement of renewable energy	<ul style="list-style-type: none"> The procurement of renewable energy is imperative to achieving significant reductions in emissions. A large portion of Yamaha's Scope 1 and Scope 2 emissions are associated with electricity, meaning that increased use of renewable energy will be crucial to reducing emissions (electricity purchased in fiscal 2022 amounted to approximately ¥3.0 billion). Reductions to CO₂ emissions will be pursued by conserving energy, generating renewable energy in-house, and purchasing renewable energy. 	-
	Product demand	Medium-term opportunities	Opportunities created by increased product demand as people limit movement to combat climate change	<ul style="list-style-type: none"> There has been a trend toward people limiting their movement (via airplanes, etc.) to combat climate change, and it is possible that this trend may continue or expand going forward. This transition from outdoor to indoor activity may create opportunities by increasing demand for Yamaha's communication equipment (speakerphones, routers, etc.). The trend toward decarbonization is expected to drive the popularization of electrified vehicles. The IEA's NZE Scenario (net zero emissions by 2050) projects that sales of EVs will represent 64% of total automobile sales in 2030 and 100% in 2050. This accelerated spread of EVs has the potential to help win stronger customer support for Yamaha and its technologies for creating lightweight equipment that produces high-quality audio. We also see potential for engaging in new businesses through which we branch out from audio equipment to produce comprehensive sound atmospheres within vehicles. Reductions to waste and more effective use of resources is being promoted as a means of combating climate change. Against this backdrop, Yamaha has the potential to become a brand that guides the direction of the entire industry. Efforts to secure this position should include the development technologies and business model reforms for providing products as services aimed at reducing raw material use, utilizing recycled and renewable materials, encouraging customers to use products for longer by upgrading or purchasing more durable items, and eliminating the use of plastics in packaging. 	++

Physical risks (Global warming of 4°C)	Procurement	Long-term risks	Risk of difficulties in procuring timber due to changes in production region environments	<ul style="list-style-type: none"> Global warming may change the environments in the regions from which Yamaha procures timber. The Company undertook an investigation that looked at scarce and difficult-to-substitute tree species from which it procures timber and was based on an academic thesis. This investigation indicated a possibility that the environments in which several of these tree species are cultivated might shrink. It has therefore been determined that we face the risk of it becoming difficult to procure timber from these tree species, resulting in increases in raw material prices. Through the advancement of Tone Forest for developing forests capable of sustainably producing timber suited to musical instrument production together with the community, we aim to secure stable supplies of high-quality timber over the long term. 	--
	Direct operations		Risk of halts to operations and lost profits due to heavy rains, floods, or other natural disasters impacting operating bases (factories)	<ul style="list-style-type: none"> Global warming is projected to cause increases in the damages from heavy rains, floods, and other natural disasters. It is therefore possible that profits may be lost should operations be halted at an operating base (factory) as a result of flooding. However, even when using analyses based on a scenario projecting global warming of 4°C above pre-industrial levels in 2050, the Company's investigations have found no risks flooding of more than one meter above floor level at the approximately 100 major Yamaha Group bases, distribution bases, and suppliers investigated. 	-
	Product demand	Long-term opportunities	Opportunities created by increased product demand as people refrain from leaving homes during summer as a result of rising temperatures	<ul style="list-style-type: none"> There has been a trend toward people refraining from leaving their homes during the summer as a result of rising temperatures (risks of heatstroke, etc.), and it is possible that this trend may continue or expand going forward. This transition from outdoor to indoor activity may create opportunities in the form of increased demand for Yamaha's communication equipment (revenue of ¥14.5 billion from ICT equipment in fiscal 2022) and for guitars and other types of musical instruments (revenue of ¥276.2 billion from musical instruments in fiscal 2022). To prepare for the potential depletion of the habitats in which timber suited for musical instrument production is grown, we are developing alternative materials with characteristics that are even more beneficial than those of the materials currently used. We thereby aim to contribute to the development of music culture and to capitalize on a wider range of business activities. 	++

Note: Certain risks and opportunities have been omitted in reflection of their likelihood of occurrence or potential impact on business.

Potential Changes in Timber Procurement Region Environments from Base Year

Potential Changes in Timber Procurement Region Environments from Base Year

None (100% or more) Minor (95–100%) Moderate (80–95%) Large (80% or less)

Tree Species	Region	Rise in Average Global Temperature from Pre-Industrial Levels (°C) and Potential Change in Procurement Region Environments (%)								
		0.6°C*	1.0°C	1.5°C	2.0°C	2.5°C	3.0°C	3.5°C	4.0°C	4.5°C or more
Conifer species A	North America	100	100	99	98	96	94	92	90	Less than 90
Conifer species B	Europe	100	101	84	74	62	47	31	11	Less than 11
Broadleaf tree species A	Asia	100	101	105	107	109	111	113	115	More than 115
Broadleaf tree species B	Asia	100	101	103	104	104	104	103	101	Less than 101
Broadleaf tree species C	Europe	100	102	96	86	72	55	37	14	Less than 14
	Europe	100	100	100	99	98	96	94	92	Less than 92
					2°C scenario			4°C scenario		
RCP 8.5 (4°C scenario)		Today		2040s			2060s		2080s 2090s	
RCP 2.6 (2°C scenario)		Today		2040–2090s						

* "Today" represents the average between 1986 and 2005.

Source: Yamaha Corporation

External Recognition

▶ A List, Highest Honor in CDP Climate Change Surveys

In 2021, Yamaha Corporation was selected, for the first time, for inclusion in the climate change A List by CDP, an international NPO tackling climate change and other environmental issues. Positions on this list are reserved for companies exhibiting excellence on a global scale in addressing climate change and disclosing information related to those efforts.

Approximately 13,000 major companies from around the world were assessed in the fiscal 2022 CDP climate survey. These companies were assigned ranks ranging from D- to A, and 200 companies, 55 of which were Japanese companies, were included in the A List, the highest honor in this survey.



▶ CDP Supplier Engagement Leaderboard

Yamaha Corporation has been included on the Supplier Engagement Leaderboard, the highest honor in the Supplier Engagement Rating of CDP, for two consecutive years. Launched in 2017, the Supplier Engagement Rating is a program through which CDP assesses the climate change and greenhouse gas emission reduction initiatives that companies are conducting across their supply chains. In 2021, approximately 23,000 companies from around the world were surveyed and assessed with 518 companies, including 105 Japanese companies, being selected for the Supplier Engagement Leaderboard. Yamaha's selection for this honor is thought to be a reflection of the Company's ongoing efforts to reduce greenhouse gas emissions from across the life cycles of its products, spanning from raw material procurement to production, distribution, use, and ultimately disposal or recycling.



» External Recognition

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

Responsibility as a Company Using Timber

▶ 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 2005 to 2016, Yamaha Corporation and six local Indonesian subsidiaries carried out Phase 1 and Phase 2 Yamaha Forest activities in the form of planting saplings in Indonesia, thus contributing to the regional society. In these activities, we planted tree types selected based on academic studies in order to restore natural forests and rehabilitate ecosystems in accordance with regional characteristics.

In fiscal 2018, the Company confirmed the status of forest growth using satellite imagery and estimated the CO₂ 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 t-CO₂ 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, West Java, Indonesia	Mt. Ciremai National Park, Kuningan, West Java, Indonesia
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 (<i>Tectona grandis</i>), <i>Paraserianthes falcataria</i> , eucalyptus, melina, and meranti	Total of 46 indigenous species selected based on vegetation surveys (<i>bayur</i> (<i>Pterospermum acerifolium</i>), <i>Peutag</i> , <i>Salam</i> , <i>Acacia Mimosa</i> , <i>Teurap</i> , etc.)
Details of activities	<ul style="list-style-type: none"> • 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) 	<ul style="list-style-type: none"> • 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 <p>Note: In fiscal 2017, this project was relocated to Mt. Ciremai National Park, where it is continued under the management of local government agencies and other related entities.</p>
Volume of CO₂ 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 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 October 2021, trees were planted by environmental staff as the tree planting event was not open to the public.

Record of Tree Planting Activities

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

8th (2015)	480	Ubame oak (<i>Quercus phillyraeoides</i>), Japanese spindletree (<i>Euonymus japonicus</i>), yeddo hawthorn (<i>Rhaphiolepis indica</i> var. <i>umbellata</i>), Japanese pittosporum (<i>Pittosporum tobira</i>), and black pine (<i>Pinus thunbergii</i>)
9th (2016)	245	Ubame oak (<i>Quercus phillyraeoides</i>), Japanese spindletree (<i>Euonymus japonicus</i>), and black pine (<i>Pinus thunbergii</i>)
10th(2017)	330	Resistant black pine (<i>Pinus thunbergii</i>)
11th(2018)	300	Resistant black pine (<i>Pinus thunbergii</i>)
12th(2019)	300	Resistant black pine (<i>Pinus thunbergii</i>)
Tree planting activities were canceled in 2020 due to the COVID-19 pandemic (the growth of trees planted thus far was observed instead).		
13h (2021)	150	Resistant black pine (<i>Pinus thunbergii</i>)
Total	3,065	

「しずおか未来の森サポーター 第13回遠州灘海岸林植樹」
令和3年10月25日（月曜日） 環境スタッフ、浜松市公園管理事務職員、正木樹芸研究所の皆さんで
時折の雨模様の中、予定していた150本の抵抗性クロマツの植樹を行いました。



13th tree planting event



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

Application of Environmental Technologies

Products Supporting Environmental Impact Reduction

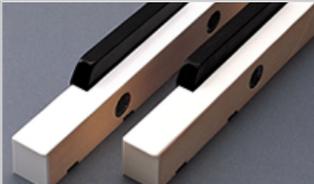
Product / Service	Environmental Characteristics / Benefits	Photograph
Micro prober flexible printed circuit conduction and insulation inspection devices (Yamaha Fine Technologies Co., Ltd.)	Waste reduction and resource conservation benefits from improved yield rates for product subject to tests	
Helium 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