

# Coexisting with the Environment to Achieve Sustainable Development

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Most of our products are related to mobility (of people and things), and are manufactured in line with Yamaha Motor's corporate objective of to "Offer new excitement and a more fulfilling life for people all over the world." Yamaha has been conducting its business globally for over 50 years, with the goal of contributing to the happiness and fulfillment of as many people as possible. We consider ourselves extremely fortunate to have received support for our wide range of products from customers in locations all over the world. At the same time, our corporate activities and the development and production of our products consume a large amount of resources. Furthermore, our products also require energy and emit CO<sub>2</sub> when customers use them, and when these products reach the end of their useful lives, they once again require energy for disposal and generate waste. Therefore, we must face the reality that while our products make a positive contribution in creating *Kando*\* and providing a more fulfilling life for customers, they also negatively impact the environment. At Yamaha Motor group, we believe that addressing this issue is our social responsibility. As the need to shift toward sustainable development

increases, we recognize that personal mobility, Yamaha Motor group's core business, will play an extremely important role in achieving this goal. To contribute to this effort, Yamaha must provide innovative products, technologies, and services in such promising areas as electro-hybrid bicycles, electric motorcycles, and engine fuel efficiency improvement, and continue taking steady and concrete steps on all environment-related issues. Our plan is to actively implement measures to reduce CO<sub>2</sub> emissions from our business activities and products, recycle resources (reduce, reuse, and recycle), and preserve the quality of air, water, soil, and the ecosystem, in cooperation and close communication with all group companies within the Yamaha Motor group as well as our stakeholders. In this way, we believe Yamaha will remain a corporation we can be proud of and one which resonates with society.

\* *Kando* is a Japanese word for the simultaneous feeling of deep satisfaction and intense excitement that people experience when they encounter something of exceptional value.

## Environmental Activity Policy and Plans

Yamaha Motor Group Environmental Policy			
<b>Slogan</b>	"In harmony with nature"		
<b>Fundamental Policy</b>	In order to preserve for the future the irreplaceable natural beauty of the earth, the Yamaha Motor group dedicates itself to conserving nature's valuable resources and minimizing the impact on our environment. We are committed to enhancing the quality of life around the world by working in partnership with governments, communities, organizations and private citizens.		
Yamaha Motor Group Environmental Plan 2010			
	Natural environment	Group focus	Goals for 2010
<b>Efforts Toward the Goals</b>	"Product / Service" and "Environmental contribution"	"Development of leading environmental products and technologies" "Promotion of health contribution business"	The group focus are incorporated and promoted into the company's business plan
<b>Issues</b>	"Greenhouse gases" and "Climate change"	"Improvement of Fuel efficiency" "Energy saving" & "Clean energy"	30% reduction of CO <sub>2</sub> in per unit of sales*
	"Environmental hazardous substances" and "Health and safety"	"Reduction of exhaust gas" "Management and reduction of environmentally hazardous substances"	Satisfy self-imposed regulation value Specific Environmentally Hazardous Substances :Zero Emission
<b>Systems</b>	"Waste materials" and "Protection of resources"	Accomplish "3R" by "3E" 3E: Easy to build, Easy to service, Easy to disassemble 3R: Reduce, Reuse, Recycle	Product and Factory: 100% recycling Achievement of "Long life"
	Systems to Ensure Environmental Activities	"Establish group-wide EMS and manage the activities"	Coordination between group-wide activities and local activities
<b>Approaches</b>	Approach to environmental tasks	"Enhanced environmental awareness through continued education"	Every group member proactively conducting environmental activities with a strong motivation
	Harmonious coexistence with local communities	"Improvement of sensory environment" "Communications with communities"	Being Trusted and Loved by the Local Communities as a Corporate Citizen
	Information disclosure	"Proactive environment-oriented public relations"	Well received by the communities as a leading green company

\* Unit requirement: This refers to fuel consumption per unit in the case of a product, whereas in other cases, to the amount of energy used for conducting sales activities.



## 2008 Plans and Performance

Efforts toward the Goals	2008 Plans	2008 Performance
	Clarifying the "Pillars of the Environment" and contributing positively to the environment through products and services	Reassessed the 2010 goals and reset quantitative targets for 2013 in order to further promote the goal

Environmental Preservation Issues	2008 Plans	2008 Performance	
Greenhouse Gases	1. CO <sub>2</sub> emissions assessment and reduction	Reduce by 1.5%/year per unit of sales	Reduced by 2.4%/year per unit of sales
	2. Improvement of fuel efficiency	Establish a goal for each product in each business division (average fuel efficiency improvement for all products: At least 27% increase over the reference year)	Achieved the goal for each product in each business division
	3. Reduction of CO <sub>2</sub> emissions from manufacturing processes	Reduce the total volume by 25.9% (compared to 1990) in all manufacturing processes of Yamaha Motor	Reduced by 28% from the reference year
	4. Reduction of CO <sub>2</sub> emissions from distribution operations	Reduce by 1.0%/year per unit of transported volume (by 2007 standard)	Reduced by 3.4% per unit of transported volume
Hazardous Substances	1. Reduction of exhaust gas from products	Meet the regulations ahead of schedule	Satisfied all regulations
	2. VOC reduction*1 (3 companies*2)	Reduce by 40% compared to 2000 (per unit of painted area)	Reduced by 39% compared to 2000 (per unit area). Improved by 5% compared to 2007 through the adoption of new colors for powder coating and the operation start of a high-coating efficiency line
	3. Promotion of green procurement	Promote green procurement at all domestic and key overseas sites	Currently taking actions according to individual schedules toward the goal of "Elimination of specified hazardous substances in 2010"
	4. Adherence to laws and self-imposed operating standards	Expand application of system to collect data on environmentally hazardous substances contained in parts (E-sis) to 27 companies and complete implementation	Installed the E-sis system at 27 companies. Data preparation is in progress at 21 companies
Waste Materials	1. Promotion of "3R" in product development	Expand weight-saving models Achieve 95% reusability/recyclability	Adopted a new magnesium rear frame for YZF-R1 (2009 model) Almost achieved a product recycling rate of at least 95%. (Only one model failed to meet the goal because the industry changed its recycling standard)
	2. Promotion of "3R" in manufacturing	Reduce waste materials for direct/indirect landfill disposal to 0 tons Achieve recycling rate of 100% in manufacturing processes	0 tons 100%
	3. Waste materials in manufacturing processes (3 companies*3)	Continue super-zero emission Implement measures and effectiveness assessment	Achieved super-zero emissions again Each company achieved the goal by promoting complete sorting and selling the sorted materials
	4. Establishment of recycling system for products in Japan	Promote motorcycle recycling systems	Properly recycled 2.6 times the number of motorcycles compared to 2007
		Begin initiative to publicize the nationwide recycling system for scrap FRP boats	Included a notice on the company website and distributed information pamphlets during inspection
	5. Reduction of parts packaging materials	Develop a nationwide recycling system for industrial-use unmanned helicopters	Began nationwide implementation. Recycled 71 helicopters through promotion of proper disposal
		Collect information and support the building of a lead-acid battery recycling system by SBRA*4	Participated in the Automobile Battery Recycling Task Force of the Japan Automobile Manufacturers Association
	6. Promotion of recycling in sales channels	Increase the number of outlets in Japan certified as "Eco-Partner" to more than 90% of the YSP dealerships	Made 66.4% of packaging materials returnable Achieved a 99% certification rate for "Eco-Partner" dealerships
	7. Reduction of water consumption	Reduce packaging materials, making 65% of packaging materials returnable	Made 66.4% of packaging materials returnable
		Begin investigation of actual water consumption globally	Implemented some specific measures and created quantitative standards (internal introduction standards). Carried out awareness-increasing activities, such as applying water conservation labels

System to ensure continuation of environmental activities	2008 Plans	2008 Performance
1. Setting up and operating Group EMS (ISO14001/Yamaha self-certification)	In the first year of operation for the self-certification system (YEMCS), implement YEMCS globally. Implementation goal: 32 Japanese and 38 overseas companies In relation to the operation of the global EMS, introduce a self-check system using G-YECOS into 60 companies Create and firmly establish the activities of a new organization based on the YMC integrated environmental management system Increase the number of environmental auditors by 10 to establish a 90-auditor organization	Began operating YEMCS at 6 companies and 1 business site. The EMS was implemented at 27 Japanese and 38 overseas companies, falling just short of the goal Carried out self-check at 42 companies of the 57 where G-YECOS has already been implemented Started operation at 52 units, leading to environmental risk reduction Maintained an 80 environmental auditor organization (hired 8 auditors but lost 7)
2. Environmental risk management	Evaluate compatibility with the corporate-wide risk management system	Fully use of EMS company-wide to address high-risk environmental law violations
3. Enhancement of environmental governance	Develop an integrated environmental management index, decide on the methodology, and determine the external system specifications	Created methodology for an integrated environmental management index. Evaluated the external system specifications
4. Creation and use of environmental management support tools	Use G-YECOS to share information among all 60 group companies subject to consolidated environmental management and support mutual encouragement Construct and introduce a new chemical substance management system	Completed introduction of G-YECOS into 57 companies Shared environmental information and supported mutual encouragement Began operating a chemical substance management system in November

Approaches	2008 Plans	2008 Performance	
Approach to Environmental Concerns	1. Expansion of the Eco Life activity menu	Achieve 65% participation rate in eco-commuting. Promote eco-driving in commuting and at home	Achieved 65% participation rate and continued to promote eco-driving
	2. Expansion and support of diverse Eco activities	Investigate and streamline the personnel system, including work rules and support of volunteer activities Implement the Eco Point system at YMC	Assessed the actual situation and evaluation is underway Operation began in January 2008; 490 applicants
	3. Fostering of "Eco Mind"	Introduce "Management layer and general manager class education" into by-segment education of employees, systematizing and enhancing the system Develop eco leaders by discovering and registering promising human resources	Evaluated the possibility of introduction Continuing negotiation with the divisions and departments involved
Harmonious Coexistence with Communities	1. Coexistence with communities	Achieve participation of a cumulative total of 40,000 Yamaha Motor group people in the 40,000 People's V Campaign	A cumulative total of 44,000 people (25,000 in the environmental field and 19,000 in the social contribution field) participated
	2. Corporate social contribution	Give lectures on corporate environmental initiatives at community events and schools Continue holding various types of training programs Continue environmental activities in concert with local municipalities, research and educational institutions, and other corporations	Gave lectures on corporate environmental initiatives at schools in Fukuroi city (Shizuoka prefecture) Held family eco classes in Iwata city (Shizuoka prefecture) Carried out environmental activities in Hamamatsu city and Iwata city (both in Shizuoka prefecture)
	3. Coexistence with nature	Conduct research on ecosystem monitoring and prepare for implementation	Conducted environmental assessment at the planned building site for Kikugawa Test Course. Proposed measures to preserve the rare wildlife living within the planned development area
Information Disclosure	1. Information disclosure and dialogue	Expand number of CSR Report items that satisfy GRI guideline requirements (G3: level B + α) Hold exhibits and events twice/year. Expand targets for the Environment Symposium. Deliver environmental messages from Yamaha Motor President	Identified items that satisfy GRI guideline requirements (level B) Held two events. 1) Delivered environmental message from Yamaha Motor President at the Environment Symposium. 2) Exhibited products at Eco Products 2008
	2. Communicating environmental information in relation to products, technologies, and services	Highlight environment-friendly products and technologies by always including their environmental output in news releases, catalogs, and pamphlets Promote environmental product information dissemination	Communicated environmental output in new ways, for example, using demonstrations of methane-gas-powered golf cars and article advertisements Held 63 exhibits and lectures on "fuel-cell-powered motorcycles"

\*1: Emissions per unit of product area; \*2: Yamaha Motor Co., Ltd., Yamaha Marine, Yamaha Motor Powered Products; \*3: Yamaha Marine, Yamaha Motor Powered Products, Yamaha Motor Electronics; \*4: Stands for Lead Acid Storage Battery Recycle Association.

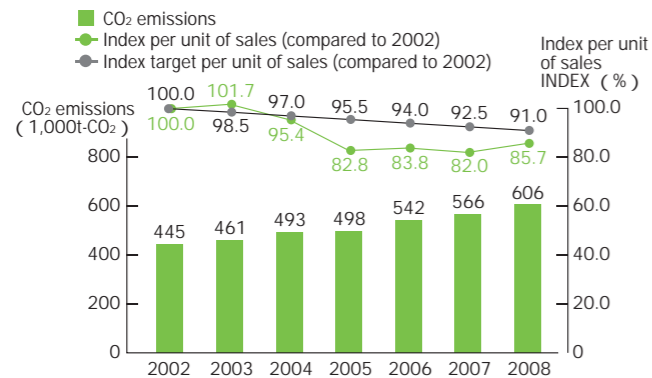


## Approach to Reducing CO<sub>2</sub> Emissions

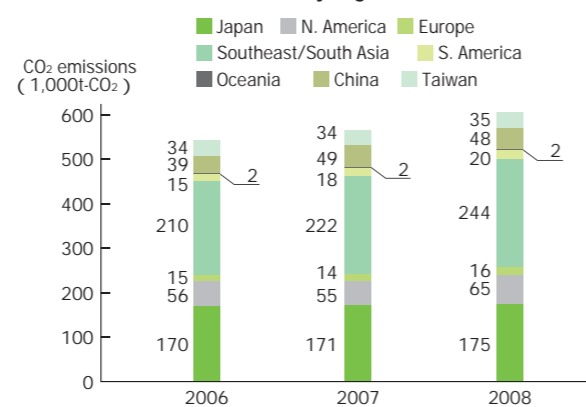
As a manufacturer of motorcycles and other transportation machinery, the Yamaha Motor group is taking various actions to reduce greenhouse gas emissions, which it considers the most critical issue in the environmental field. Yamaha set "30% reduction of CO<sub>2</sub> emissions per unit of sales compared to FY1990" as the group's common 2010 goal, and is working to reduce greenhouse gas emissions from all of its business activities, particularly throughout the entire lifecycle of its products from development to manufacturing, use and finally disposal. Individual Yamaha business sites are taking actions to

achieve the goal of "Reduction of CO<sub>2</sub> emissions per unit of sales by 1.5% year-on-year." In 2008, among the 114 companies subject to evaluation, 62 companies (54%) achieved the common group goal. In terms of CO<sub>2</sub> emissions reduction, the Index per unit of sales was reduced to 85.7% against the goal of 91%, exceeding the goal. We will be working to efficiently reduce greenhouse gas emissions via such means as checking the status of programs targeting reduction of energy consumption by domestic and overseas group companies, and providing assistance to those needing to advance their programs.

### Achievement status of CO<sub>2</sub> emissions reduction program targets for the entire Yamaha Motor group



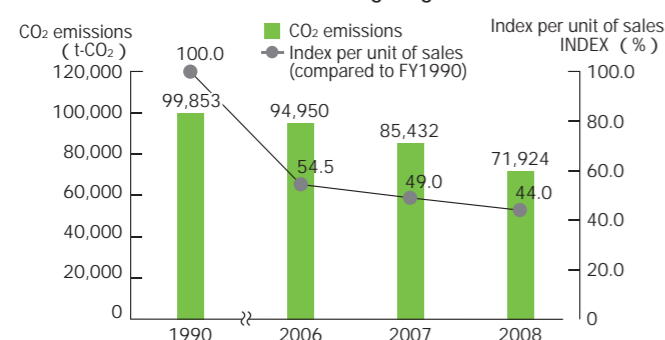
### Trends in CO<sub>2</sub> emissions by region



### Reducing CO<sub>2</sub> emissions at the manufacturing stage

Yamaha Motor has established "26% reduction in CO<sub>2</sub> emissions by 2010 (compared to FY1990)" as the goal for all of its manufacturing facilities. In 2008, actual CO<sub>2</sub> emissions were 71,924 t-CO<sub>2</sub> against the goal of 74,019 t-CO<sub>2</sub>, which translated into a 28% reduction, already exceeding the goal. We are committed to continuing introduction of energy-saving devices and improving our operational management system in order to further reduce CO<sub>2</sub> emissions.

### Trends in CO<sub>2</sub> emissions and CO<sub>2</sub> emissions per unit of sales at the manufacturing stage at Yamaha



### Nakaze Factory Installs Solar and Wind Power Generation Systems

As part of efforts to wean itself from petroleum, the Nakaze Factory (Hamamatsu city, Shizuoka prefecture), which forms and paints exterior parts for motorcycles, began operating solar and wind power generation systems simultaneously, becoming the first such factory within Yamaha. The two systems together are expected to generate 26,000 kWh/year of electricity (which translates into a reduction of approximately 18 tons in CO<sub>2</sub> emissions), which is being used for lighting and air-conditioning in the office buildings at the factory.



Vertical wind power generation system, which is quieter than the propeller type

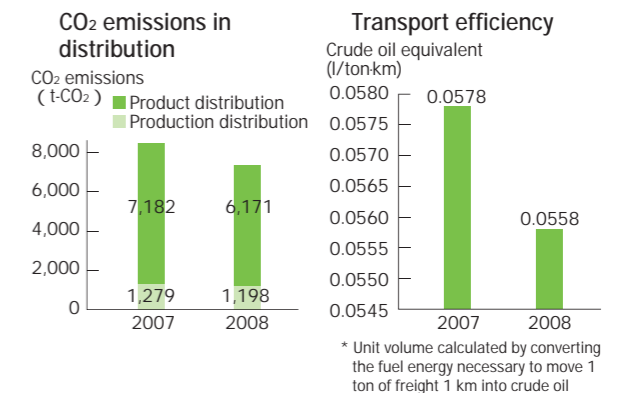


Solar generation system introduced through a joint research project with NEDO

### Reducing CO<sub>2</sub> emissions at the distribution stage

Yamaha Motor has established the goal of "Improving transportation efficiency by 1% a year (compared to 2007)" for all divisions. Yamaha's basic approach is to implement measures beginning with those that will have the greatest CO<sub>2</sub>-limiting impact, while balancing the energy conservation benefit with cost benefit. Yamaha has also established a working group that centrally promotes CO<sub>2</sub> emissions reduction in distribution. In 2008, Yamaha improved its transportation efficiency by 3.4% (compared to 2007) and reduced CO<sub>2</sub> emissions by 12.9% through implementing measures such as transportation route reassessment, loading rate improvement, and promotion of ecologically sound driving practices. We are committed to continuing our efforts to promote further reductions of CO<sub>2</sub> emissions in our distribution activities.

For example, we plan to increase the size of vehicles used and adopt flexible pallets that match parts shapes, promote mixed product loading, and focus on modal shifts for long-distance shipments.



### Reducing CO<sub>2</sub> emissions from products

We comprehensively assess the environmental impact of our products throughout their entire lifecycle, including their development, production, usage, and disposal phases. Since the products Yamaha manufactures emit the largest volume of CO<sub>2</sub> during the usage phase, we are actively taking steps to reduce the amount of CO<sub>2</sub> emitted during use.

### Improving the fuel efficiency of internal combustion engines

To reduce the CO<sub>2</sub> emitted during the usage phase of products employing internal combustion engines, the Yamaha Motor group has set the goal of 30% reduction for all such products by 2010. Although the 2008 goal had been a reduction of 27%, the recreational vehicle division, which makes snowmobiles, etc., was not able to achieve this goal because rapid market changes in Europe and North America led to a change in the mix of product models sold. Products from all other business divisions, however, essentially met the goal.

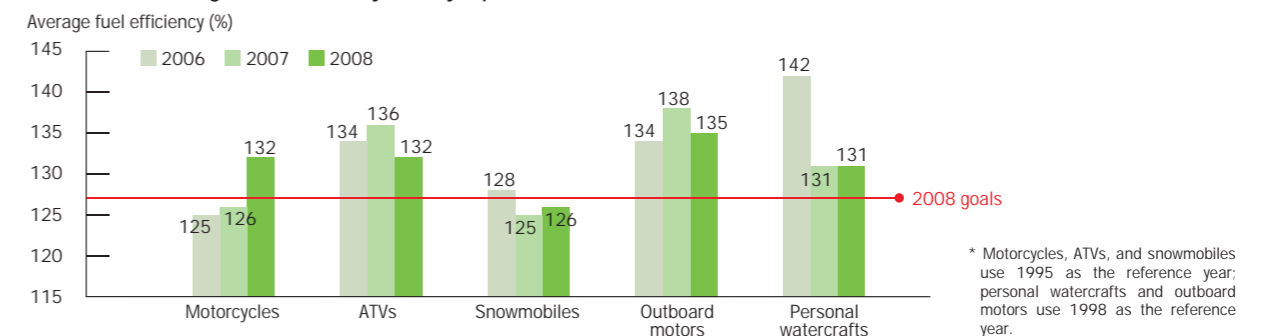
### Developing vehicles powered by "Smart Power"

Yamaha Motor is continuing its activities toward helping achieve a sustainable society, for example, by conducting research and development on electric motorcycles that will not generate any CO<sub>2</sub> during operation, a compressed hydrogen type fuel-cell motorcycle that will not emit any CO<sub>2</sub>, and a direct methanol type fuel-cell motorcycle that will reduce CO<sub>2</sub> emissions by approximately 50%.

### Promoting wider use of the electro-hybrid bicycle "PAS"

Electro-hybrid bicycles have been getting more and more popular as people's environmental awareness and health consciousness have become better established. Yamaha Motor has been launching new electro-hybrid models following a revision in the enforcement regulations of the Road Traffic Act in December 2008. Furthermore, in 2008, we launched the "PAS Brace," a completely new, sporty model, and are continuing to take steps to improve it in response to customer expectations.

### Trends in average fuel efficiency of major products



\* Motorcycles, ATVs, and snowmobiles use 1995 as the reference year; personal watercrafts and outboard motors use 1998 as the reference year.



## Efforts to Reduce Environmentally Hazardous Substances

### Reducing PRTR substances

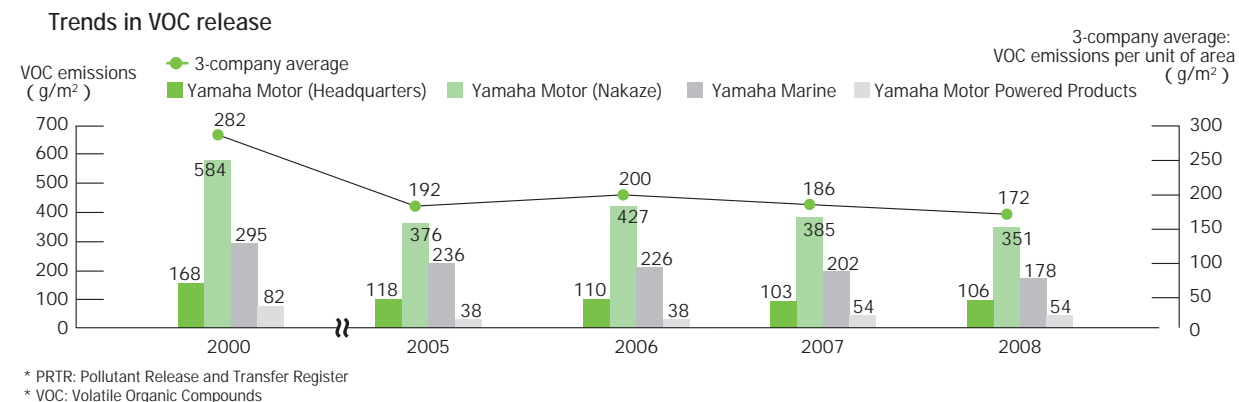
In accordance with various countries' regulations, the Yamaha Motor group tracks and reports the content of chemical substances in the waste materials it generates or discharges that are harmful to human health or the environment.

More than 99% of the PRTR substances released by Yamaha Motor are volatile organic compounds (VOCs), most of which are generated in painting processes. Yamaha is striving to reduce the VOC volume per unit of area by 50% (compared to 2000) by 2010. In 2008, by implementing various measures, including improving paint-mixing accuracy, adopting new colors in powder coating, and expanding the use of high-solid paints, we reduced VOCs released to 172 g/m<sup>2</sup> (group average), achieving a 39% reduction. We plan to continue reducing their volume by promoting expanded use of low-VOC paints, coating

efficiency improvements, and paint volume reductions. The number of Yamaha Motor sites required to report PRTR substances was 11 in 2008, one more than in 2007.

### Complying with the REACH Regulation

In response to the enactment of Europe's Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) regulation in June 2007, the Yamaha Motor group began strengthening its chemical substance management and completed pre-registration of target substances by the December 1, 2008 deadline. From this point on, we will begin introducing a management system into our group companies in preparation for formal registration in 2011, share pertinent information throughout our entire supply chain, and strive to further enhance the management of chemical substance information.



## Initiatives to Preserve Biodiversity

At its planned test course construction site (486,000 m<sup>2</sup>) and the surrounding area in Kikugawa city, Shizuoka prefecture, Yamaha Motor conducted an environmental assessment and investigated the presence and habitat conditions of plants, mammals, birds, amphibians, reptiles, insects, fish, and shellfish over a one-year period. Six kinds of plants, one type of mammal, four types of birds, and one type of fish from among those listed in the Shizuoka prefecture Red Data Book (Classification: Vulnerable, and Near Threatened) were confirmed to be inhabiting the area. Therefore, the company plans to take measures to preserve their habitat by leaving the natural forest intact according to Shizuoka prefecture's protection policy and create new habitat through transplanting and afforestation following the construction work. We will continue to assess the results of these measures in the future.

In addition to the impact on the surrounding ecosystem, the

company also plans to forecast the air pollution, noise, vibration, water quality degradation, and soil pollution that the surrounding area might suffer during site preparation, and will try to minimize their impact during construction.

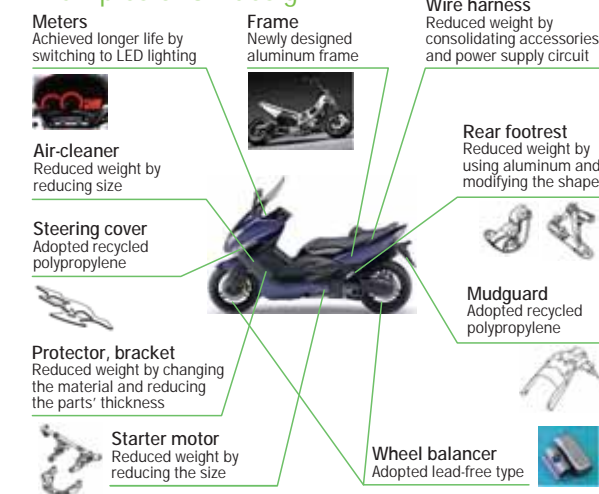


Cymbidium lancifolium Hook (white bamboo-leaf orchid) discovered during the environmental evaluation: Species listed in the Shizuoka prefecture Red Data Book (Classification: Vulnerable)

## Approach to Recycling and Reusing Resources and Reducing Usage

As the global economy advances and more nations become industrialized, the "3R" concept (Reduce, Reuse, Recycle) is becoming ever more important in each of the lifecycle phases of products: development, production, use, and disposal, in order to create a recycling-oriented society. The Yamaha Motor group has set "Product and factory: 100% recycling" and "Long life" as goals for 2010 and is undertaking various initiatives to meet them. In addition to reducing the size, which is considered the most effective method for reducing product weight, we are taking various other steps. These include reducing the number of parts required through parts integration and expanded use of magnesium, aluminum, and resin parts, and reducing the wall thickness of parts by pursuing optimum shapes. Furthermore, we plan to increase the use of a system that collects parts recyclability data in order to improve the applicability of the 3R concept to our products.

### Examples of 3R design



### 3R Initiative in Parts Distribution

The Yamaha Motor group is taking various steps to reuse and recycle resources and reduce resource usage during parts distribution. For example, we are implementing snugly interfitted packing inside cargo containers (thus reducing packing material usage by increasing the loading efficiency), increasing the number of regions that use returnable pallets with the operation start of the Latin America distribution center (thus reusing more packing materials), and manufacturing returnable pallets from the resins discharged from our sites (thus recycling the waste materials within sites).

### Promoting Product Recycling

The Yamaha Motor group is actively working on improving the recyclability of its products. In 2008, we implemented a campaign called the "Motorcycle Recycling System Promotion Campaign, 1 by 1" to ensure the proper recycling of end-of-life motorcycles by dealers and certified collection centers, with each location required to recycle at least one motorcycle. That year, 2.6 times more motorcycles were recycled than in 2007. We also began nationwide operation in Japan of our system for recycling industrial-use unmanned helicopters in February and recycled 71 helicopters appropriately.

## Promoting Communication about the Environment

To achieve coexistence with the global environment while providing our products and services, the Yamaha Motor group believes that it is important to promote environmental protection activities and to strengthen cooperation with all of our stakeholders through obtaining their understanding and participation. We also believe that clearly communicating our approach to environmental protection to the world is one of our corporate social responsibilities. With this understanding in mind, we set important goals in the "Yamaha Motor Group Environmental Plan 2010," such as "Being trusted and



Yamaha Motor exhibited products jointly with Yamaha Corporation at Eco Products 2008 in December 2008

loved by local communities as a corporate citizen." We are strengthening our communication with our stakeholders by holding environmental symposiums, participating in external environmental events, and disseminating information through means such as the media and CSR reports.

### Introducing the Eco Point System

One of the goals in the "Yamaha Motor Group Environmental Plan 2010" is to have "Every group member strongly motivated to proactively conduct environmental activities." To help group members achieve this goal, Yamaha Motor introduced its Eco Point System in January 2008. This system sets up an index that assigns points for environmental activities and allows members to select "eco prizes" according to the number of activities conducted and the number of points earned in one year.