

1 Editorial Policy

2 Overview of Honda

3 Message from the President and CEO

4 Special Feature

5 Sustainability Management

6 Performance Report 1 Environment 2 Safety 3 Quality 4 Human Resources 5 Social Activity 6 Supply Chain

7 GRI Content Index

8 Assurance

9 Financial Data

**PERFORMANCE** REPORT **Environment** 

We are aiming to reduce the CO<sub>2</sub> emissions intensity of motorcycles, automobiles and power products by 30% compared with 2000 levels by 2020, and are engaging in three initiatives to achieve this.



1 Environment 2 Safety 3 Quality 4 Human Resources 5 Social Activity 6 Supply Chain

7 GRI Content Index

8 Assurance

9 Financial Data

## **Basic Approach**

# Honda's Environment Statement/Honda Environmental and Safety Vision

Ever since the 1960s, Honda has actively endeavored to solve environmental problems. We developed the low-pollution CVCC engine that successfully reduced carbon monoxide, hydrocarbon and nitrogen oxide (NOx) emissions, while we were the world's first automaker to comply with U.S. The Clean Air Act in the 1970s - a regulation thought at the time to be the most stringent in the world.

In 1992, we released the Honda Environment Statement, which serves as a guideline for all environmental initiatives, in order to articulate the basic stance we had developed until then to reduce environmental impact at every stage in the life cycle of our products, rather than limiting the scope to the design/ development and production stages.

In addition, for Honda to further promote the above-mentioned environmental initiatives and continue to be a company that society wants to exist, we established the Honda Environmental and Safety Vision in 2010. Aimed at the realization of the joy and freedom of mobility and a sustainable society where people can enjoy life as is declared in this vision, each of Honda's global business sites is engaging in the reduction of all kinds of environmental impacts from the aspects of both productionbased and corporate activities, beginning with greenhouse gas emissions, which are considered to be a cause of climate change, and energy and resource use.



As a responsible member of society whose task lies in the preservation of the global environment, the company will make efforts to contribute to human health and the preservation of the global environment in each phase of its corporate activity. Only in this way will we be able to count on a successful future not only for our company, but for the world.

We should pursue our daily business under the following principles:

- 1. We will make efforts to recycle materials and conserve energy at every stage of our products' life cycle from research, design, production and sales, to services and disposal.
- 2. We will make every effort to minimize and find appropriate methods to dispose of waste and contaminants that are produced through the use of our products, and in every stage of the life cycle of these products.
- 3. As both a member of the company and of society, each employee will focus on the importance of making efforts to preserve human health and the global environment, and will do his or her part to ensure that the company as a whole acts responsibly.
- 4. We will consider the influence that our corporate activities have on the regional environment and sociaty, and endeavor to improve the social standing of the company.

Established and announced in June 1992

### Honda Environmental and Safety Vision

Realizing the joy and freedom of mobility and a sustainable society where people can enjoy life





8 Assurance

9 Financial Data

**Global Management** 

# Environmental Management Promotion Structure and Management Cycle

Recognizing that environmental issues such as climate change and energy/resource issues, which require global responses, are material issues that impact Honda's business operations, the Environmental Committee was established in 1991, chaired by the President and CEO and comprised of members of company management. In 1995, the Committee became the World Environmental Committee and assumed responsibility for discussing and formulating plans for environmental protection activities worldwide. Since then, it has continued to meet every year as the World Environment and Safety Strategy Committee.

Medium- and long-term environmental policies and plans at the global level are formulated at this committee meeting on the basis of company-wide direction and medium- and long-term business plans. All Committee members are involved in the meeting's decision-making.

Following the decisions made at the above meeting, the World's Six Region Environmental Committee, made up of the environmental divisions of each regional headquarters, also meets every year. Once the information sharing process at these meetings is over, these divisions formulate concrete action plans, and then implement policy.

In terms of the progress of Honda's environmental initiatives and the themes applicable worldwide, the Corporate Planning Division collects information from Regional Operations and reports it at the Meeting of the World Environment and Safety Strategy Committee. We are striving to continuously enhance environmental management through the reflection of the above information in the medium-term business plan and policy for the following term and the implementation of the plan-do-check-action (PDCA) cycle by each Regional Operation and environmental division.

# Environmental Management System

As of March 2016, Honda's existing global vehicle assembly and product assembly plants had acquired ISO 14001, an international certification for environmental management systems. We are in the process of obtaining certification for newly built plants. At the same time, in compliance with EC761/2001, a regulation of the European Council of Ministers and European Commission, we have acquired the EU's Eco-Management Audit Scheme (EMAS) and ISO 50001 for some business sites in the EU. Therefore, coverage of environmental management systems is virtually 100%.

# Current Status of Compliance with Environmental Regulations

In accordance with the Honda's Environment Statement, we have introduced environmental management systems at all business sites and in each division, and, as well as promoting continuous efforts to improve environmental performance, we strive to comply with our own voluntary environmental standards, which are more stringent from an environmental perspective than any national or local regulations.

In the last four years, Honda has not committed any serious noncompliance with environmental laws and regulations, paid any fines/sanctions, or recorded any major chemical releases.

In addition, no environment-related complaints were received through the official complaint resolution program.

## Environmental Accounting

### **Environmental Accounting in Japan**

To facilitate efficient environmental management, Honda tabulates the cost reduction and profit attributable to our environmental protection activities, thus working to keep abreast of their economic impact.

Going forward, we are committed the continuing improvement of the accuracy of this data, which we see as an indicator of corporate value, and as a tool for making environment-related management decisions.

Economic benefits (Effect on revenue and expenses)

FY2016 (million ven)

		1 12010 (IIIIttion yell)
Income from sale of valua	1,579	
Cost reductions	Installed technologies	142
from saved energy	Behavioral changes, etc.	58
Total		1,779

7 GRI Content Index

8 Assurance

9 Financial Data

### **Global Management**

#### Cost of environmental conservation activities and investments in fiscal 2016

Category		Major activities and investments	Investments (million yen)	Expenditures (million yen)
	Pollution prevention costs	Air, water, and soil pollution prevention	316	197
Business area costs	Global environmental conservation costs	Global warming mitigation, ozone depletion prevention, and other conservation activities	1,397	61
	Recycling costs	Waste processing, treatment, reduction, elimination, and recycling	139	281
Upstream/ downstream costs		Collection, recycling, resale, and proper disposal of products manufactured and sold Industry organization and other membership fees	475	324
Management costs		Installation, operation, and acquisition of certification for environmental management systems Environmental impact monitoring and measurement Management and training of associates and organizations responsible for environmental conservation (expenses for environment-related communications activities)	166	1,689
Research and development costs		Research, development, planning, and design for impact reductions across product life cycles (R&D costs for advanced eco-cars, including EVs and PHVs)	2,263	283,638
Local conservation costs		Environmental improvement measures, including ecosystem protection, cleanups, green space development, and natural landscape conservation Local conservation and communication activities (beach cleanups and watershed conservation activities)	52	392
Environmental damage costs		Remediation of polluted soil	0	11
Total			4,808	286,593

Companies covered: Honda Motor Co., Ltd., Honda R&D Co., Ltd., Honda Engineering Co., Ltd., and Honda Access Corporation - Accounting period: April 1, 2015, to March 31, 2016 - Some figures are estimated values. - Guidelines, guidebooks, and other environmental accounting publications by Japan's Ministry of the Environment were used as references. - Figures were calculated on a cash-flow basis with depreciation and amortization expenses excluded.

#### Material Issues in the Environmental Dimension

## Collection/Analysis/Evaluation of Environmental Issues

On the basis of two indices, "materiality for Honda's business" and "materiality for stakeholders," we have sorted various environmental issues into an environmental materiality matrix and thus identified environmental issues that are material to our company. We also review environmental issues on a regular basis, with the most recent review conducted in 2015.

#### **Environmental Materiality Matrix Creation Processes**

## Gathering of issues

While certain environmental issues can be risks that have the potential to seriously affect our business activities, they can also present opportunities to create and expand new business - as long as we anticipate and appropriately respond to them. In order to grasp current and future risks/business opportunities, Honda collects information related to environmental issues from the perspectives of both materiality in business and materiality for stakeholders.

Collection of information through the six Regional Operations and Business Operations for each of motorcycles, automobiles and power products, Combined with additional information collected by Functional Operations (related to production, management, etc.), meaning we accumulate information with a global coverage.

## Analysis of issues

Discussions among divisions in the company (the executive officers and environmental divisions of Regional Operations and Business Operations) and dialogue with stakeholders enables us to cross-reference the environmental issues we gather with both Honda's Fundamental Beliefs and the Honda Environmental and Safety Vision, thus enabling us to select those environmental issues of high importance.

In 2015, in the process of analyzing these issues, we engaged in dialogue with stakeholders in all regions, including customers, business partners, government officials and NGOs.

## Evaluating the issues

We comprehensively evaluate the environmental issues we select based on evaluation criteria that include "causal proximity, urgency, impact and likelihood of occurrence"; "economic impact (financial impact on business)"; "influence on Honda's competitive strength"; "possibility for issues to become business opportunities, and contents thereof"; "level of priority in relation to realizing the Honda Environmental and Safety Vision"; and "degree of social concern." In particular, with regard to the "degree of social concern," we evaluate the issues by also taking into account external ratings/indices, contents of discussions at the Climate Summits for the 21st Conference of Parties to the United Nations Framework Convention on Climate Change (COP21), World Business Council for Sustainable Development (WBCSD) and others.

## Determining the order of priority

Based on the evaluation of the issues, we create an environmental materiality matrix and identify the issues considered material by both Honda and stakeholders as environmental material issues. As we determine the order of priority for responding to the issues, we simultaneously establish concrete targets and indicators.



Editorial Policy

Overview of Honda

Message from the President and CEO

Special Feature

Sustainability Management

Performance Report 1 Environment 2 Safety 3 Quality 4 Human Resources 5 Social Activity 6 Supply Chain

7 GRI Content Index

8 Assurance

9 Financial Data

### **Material Issues in the Environmental Dimension**

## Honda's Material Issues

Through our proprietary technologies and business activities, we will work to deal with the climate change issues, energy issues and the effective utilization of resources, with an aim to realize a zero-environmental impact society in the future.

## Triple ZERO

Honda has introduced the Triple ZERO concept to unify its three "zeroing" efforts addressing "the climate change issues," "the energy issues" and "the effective utilization of resources." We are striving to realize a society with an environmental impact of zero by engaging in our business activities based on this approach.

## Zeroing CO<sub>2</sub> emissions using renewable energy

To address "the climate change issues," we are striving to eliminate CO<sub>2</sub> emissions in products and business activities in the future by utilizing renewable energy.

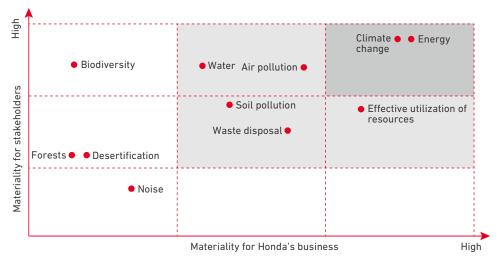
## Zeroing energy risks

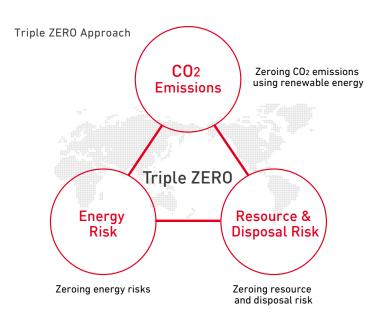
To address "the energy issues," we are striving to eliminate energy risks in the future, such as those caused by a dependence on fossil fuels.

## Zeroing resource and disposal risk

To address the need for "the effective utilization of resources," we are striving to eliminate risks across the entire product life cycle, from the resource procurement stage to the used product recovery and disposal stages.

#### Material Issues in the Environmental Dimension







Assurance

9 Financial Data

## Material Issues in the Environmental Dimension

### Climate Change Issues

Honda is moving forward with our response to climate change through initiatives that link our business strategy with our environmental strategy. With the vision of a zero impact society, we will work toward our aim to cut total company CO2 emissions in half by 2050 compared with 2000 levels. As an interim objective, we are currently working to achieve our 2020 Product CO2 Emissions Reduction Targets to lower CO2 emissions intensity from the use of motorcycles, automobiles and power products worldwide by 30% from the 2000 base year level. To achieve this objective, we will steadily lower CO2 emissions by improving existing technologies, while expanding our use of renewable energy and developing new zero-emission technologies for the future.

In pursuing the reduction of CO<sub>2</sub> emitted from our products, Honda is aware of reputational risk and potential penalties arising from failure to comply with vehicle fuel economy regulations around the world. For example, in the United States, with regard to greenhouse gas (GHG) regulations for model years 2017 to 2025, a new agreement was reached on tougher fuel economy regulations to reduce the average fleet emissions in 2016 from 250 g/mile (35.5 mpg) to 163 g/mile (54.5 mpg), representing an annual reduction of approximately 4%. The EU has decided to require further reduction to 95 g/km or less by 2021. Japan has decided to toughen fuel economy standards to an average fuel economy of 16.8 km/L by 2015 and to introduce tougher CAFE regulations in 2020. Automobiles account for approximately three quarters of Honda's sales revenue, so we believe the potential impact on business is very significant. Accordingly, as an effort to mitigate risks, Honda has built a management system called "SED" in which products are developed jointly by the Sales (S), Engineering (E) and Development (D) functions.

In addition, operations such as Honda R&D Co., Ltd., Automobile Operations and the Certification & Regulation Compliance Division coordinate research on trends in fuel economy regulations around the world, while the Certification & Regulation Compliance

Division publishes the results as regulatory information. Regular meetings are held to provide a forum for sharing the contents and interpretation of new regulations, as well as for discussing the responses to them. Also, we have built an organizational structure for developing technologies that always anticipate future fuel economy regulations through engagement with policy makers.

In recent years, stakeholders have become increasingly conscious of fuel efficiency, CO<sub>2</sub> emissions and other environmental performance indices when choosing mobility products. Honda recognizes these changes in consumer values and market demands as critical matters to focus on, and we are actively expanding the lineup of products that we offer powered by Earth Dreams Technology.\* Through these initiatives, we are meeting customers' needs and generating additional profit.

\*A collective term to refer to a group of innovative technologies that greatly enhances both driving performance and fuel economy, building on advancements in environmental performance to pursue a joy of driving unique to Honda

## **Energy Issues**

We believe that climate change, resource depletion and other issues are compelling society, which is heavily dependent on fossil fuels, to face up to energy risks. Energy issues have a very significant business impact on the mobility business sector, and our concern is that unless we proceed with energy diversification, for example, through the utilization of renewable energy, it will become difficult to sustain our business.

We are addressing energy issues by diversifying the energy sources used in our products and business activities, with the aim of completely eliminating energy risk from heavy dependence on fossil fuels, etc. We have set an interim target for 2020 to establish technologies that diversify home energy sources and reduce CO2 emissions from personal mobility and home living to zero. We are developing the Honda Smart Home System (HSHS) to help us realize this goal. To seize new business opportunities, we are pushing forward with the

development of electric vehicles (EV) and fuel cell vehicles (FCV) and entering into partnerships with other companies for the preparation of a hydrogen infrastructure involving the likes of hydrogen stations.

Although FCVs do not emit CO2 while being driven, CO2 is given off during the production of the hydrogen they use as fuel.

To resolve this issue, Honda is working to develop a system that will produce zero CO2 emissions, from when the hydrogen is produced to when the vehicle is used.

We are focusing on the potential for manufacturing hydrogen without emitting CO<sub>2</sub> by using power from renewable energy to electrolyze water, and are currently demonstrating the Smart Hydrogen Station (SHS) as a hydrogen production, storage and filling system that uses this approach.

We are also promoting energy diversification by actively introducing large-scale solar and wind power generation at our facilities, as we work toward ultimately reducing our energy risk to zero.



Editorial Policy

2 Overview of Honda

3 Message from the President and CEO

4 Special Feature

5 Sustainability Management

Performance Report 1 Environment 2 Safety 3 Quality 4 Human Resources 5 Social Activity 6 Supply Chain

7 GRI Content Index

8 Assurance

9 Financial Data

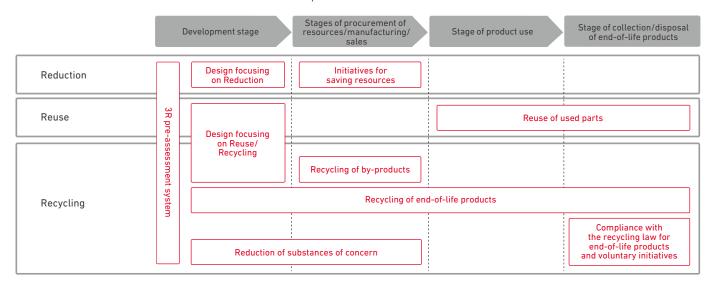
### **Material Issues in the Environmental Dimension**

#### Effective Utilization of Resources

The depletion and resulting difficulty of obtaining rare earth metals and other resources used in our products poses a significant risk to our business continuity in terms of the procurement of components and raw materials necessary for manufacturing. Therefore, Honda considers the effective utilization of resources one of the material issues and is actively promoting 3R (Reduction/Reuse/Recycling) activities.

Aiming at the elimination of risks related to resources and disposal that occur in various stages ranging from resource procurement to collection/disposal of end-of-life products, we are tackling this issue through cooperation/partnership with internal/external stakeholders.

Initiative for the elimination of risks related to resources and disposal





8 Assurance

9 Financial Data

### Material Issues in the Environmental Dimension

#### TOPICS

## Initiatives for Developing Hydrogen **Fueling Infrastructure**

To power FCVs with zero carbon energy, Honda has been experimentally producing hydrogen using renewable energy since 2001. In 2010, we launched a demonstration project using our unique high-pressure water electrolysis system in Los Angeles, California. This technology subsequently evolved into the Smart Hydrogen Station (SHS), the world's first system to combine the functionality for producing, storing and supplying hydrogen in a single package. In 2014, we launched a project with Iwatani Corporation to demonstrate SHS in the cities of Saitama and Kitakyushu.

In 2015, the Japanese government launched a program to install hydrogen fueling stations based on renewable energy in an effort to realize a low-carbon hydrogen mobility system with the use of FCVs. In 2015 and 2016, the SHS platform was selected by Miyagi Prefecture, Saitama Prefecture, the city of Kobe, Tokushima Prefecture, and Kumamoto Prefecture.

Meanwhile, Honda has been marketing FCVs and supporting the development of hydrogen refueling infrastructure in the United States. In November 2014, we extended USD13.8 million in funding to FirstElement Fuel to create a network of 19 public hydrogen fueling stations in California. The company also received a grant of about USD27 million from the California Energy Commission at the beginning of 2014. Thanks to the funding from the state government and financial support from Honda, the company now expects to be able to build at least 31 stations in its network, supporting drivers of Honda CLARITY FUEL CELL vehicles and fuel cell vehicles from other automakers. In this way, Honda is working with government and private-sector partners to develop hydrogen fueling infrastructure to realize a renewable energy fueled mobility future.



SHS



Public hydrogen fueling station in California, U.S.

#### TOPICS

## Initiative for Vehicle Electrification by Promoting **EV Charging Stations**

To accelerate Honda's efforts to achieve a goal of twothirds hybrids, plug-in hybrids, and zero emission vehicles by around 2030, American Honda Motor Co., Inc. installed 60 new EVs charging stations on its Torrance, California campus.

EV Workplace Charging increases the electric driving range of electric vehicles by allowing associates to leave work with a fully charged vehicle battery, which leads to dramatically increased customer satisfaction with plugin electric vehicles and increased environmental benefit through increased use of the vehicles.

To prepare for the anticipated steep rise in EVs on campus, American Honda is prepared to increase the number of charging stations as needed.

To support the local community in conjunction with the project, Honda is also installing a publicly-accessible DC Fast charger on its campus, which will enable Torrance residents to rapidly refuel EVs equipped with DC charging capabilities when it opens.

Funding for the project was provided, in part, by a California Energy Commission grant.



EV Charging Stations at American Honda Motor Co. Inc.

8 Assurance

9 Financial Data

## **Product Initiatives**



## Responses to Climate Change and Energy Issues

Goal to reduce CO2 emissions intensity in products by 2020



- Global average CO2 emissions from Honda products
- Scope of compilation includes Japan, China, North America, Europe, Asia & Oceania and South America and it covers more than 90% of units sold by Honda worldwide for each of motorcycles, automobiles and power products.

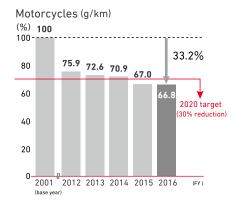
Emissions from "use of products" account for approximately 80% of CO<sub>2</sub> emissions from Honda's entire product life cycle.

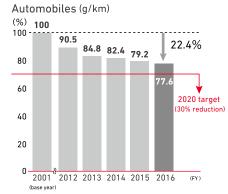
Therefore, to ultimately realize zero CO2 emissions while expanding production/sales globally, Honda has formulated and is promoting initiatives under a goal to reduce CO2 emissions intensity of motorcycles, automobiles and power products by 30% from 2000 levels by 2020.

The scope of the above compilation includes Japan, China, North America, Europe, South America and Asia & Oceania, and it covers more than 90% of units sold by Honda worldwide for each of motorbikes, automobiles and power products.

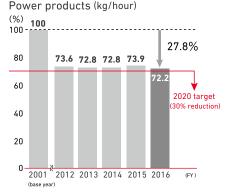
In addition, there were no violations in product and service information or labeling in general.

Current status of achievement vs. 2020 product CO<sub>2</sub> emissions intensity reduction targets









\*CO2 emissions were calculated using average usage time and required output for each engine up until FY2015. In order to ensure greater precision in these calculations. Honda has used usage time and required output in consideration of the users of each product since FY2016, with all previous years retroactively restated with this as the base year.

#### TOPICS

## Honda Adds Hybrid Models to Odyssev and Odyssev Absolute

In February 2016, Honda launched hybrid models of the Odyssey and Odyssey Absolute, its luxury minivan line that is highly regarded for features such as an expansive interior, distinctive styling and a stable, comfortable ride. The models, which are the first of the line to feature our innovative Sport Hybrid i-MMD\*1 system, deliver class-leading\*2 fuel efficiency of 26.0 km/L (JC08 mode)\*3. Aggressive enhancements to the system to maximize its efficiency and a newly developed motor that is about 23% smaller and lighter than previous models thanks to improvements in its winding design and construction combine to yield higher torque and output. Furthermore, engineers were able to maintain the core Odyssey features of a large interior and excellent ease of use while offering exceptional fuel efficiency and a polished, powerful ride by locating the vehicle's compact lithium-ion battery underneath the first-row seats.



#### Odyssey

- \*1 i-MMD: Intelligent Multi-Mode Drive
- \*2 According to a Honda study of 7/8-seat minivans with a 1.8 L or larger engine and total height of at least 1,600 mm (as of February 2016)
- \*3 Fuel efficiency as reviewed by the Ministry of Land, Infrastructure, Transport and Tourism for HYBRID. HYBRID Advanced package and HYBRID EX package models (excluding HYBRID EX package [7-seat] and HYBRID Advanced package [7-seat] models equipped with a rear entertainment system)

**Editorial Policy** 

Overview of Honda

Message from the President and CEO

Special Feature

Sustainability Management

Performance Report

1 Environment 2 Safety 3 Quality 4 Human Resources 5 Social Activity 6 Supply Chain

7 GRI Content Index

8 Assurance

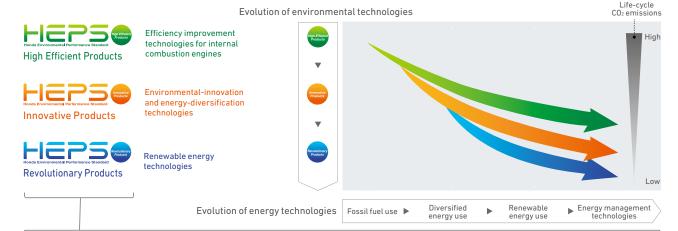
9 Financial Data

## **Product Initiatives**

## Three Initiatives to Achieve Environmental **Performance Targets**

Honda seeks to reduce the CO2 emissions intensity of motorcycles, automobiles and power products by 30% from 2000 levels by 2020 and has engaged in three initiatives to achieve this. Specifically, these are: 1) reducing CO2 emissions through efficiency improvements of internal combustion engines, 2) reducing CO<sub>2</sub> emissions by introducing environmentally innovative technologies and diversifying energy sources, and 3) eliminating CO2 emissions through the use of renewable energy and total energy management. By implementing these in phases, we will steadily reduce and ultimately eliminate CO2 emissions. In 2011, we established the Honda Environmental Performance Standards (HEPS), an independent product classification and certification system designed to identify how Honda products are contributing to achievement of the three initiatives outlined above. By making all Honda products compliant with one of the three standards, we will make steady progress toward realizing zero CO2 emissions.

As a result of certification of products that were launched in FY2016, 42 motorcycle models, 10 automobile models and 9 power product models - a total of 61 models - were HEPScertified. Cumulatively, this brings the number of HEPScompliant products to 136 motorcycle models, 98 automobile models and 47 power product models, or 281 models in total.



#### • High Efficient Products

Products that emit less CO2 emissions because of improved internal combustion engine efficiency. This category includes products that incorporate technologies for improving fuel combustion and transmission efficiency and reducing friction between engine parts. Compliance is determined based on how well a product reduces or helps reduce CO<sub>2</sub> emissions during use compared with preceding models.

#### • Innovative Products

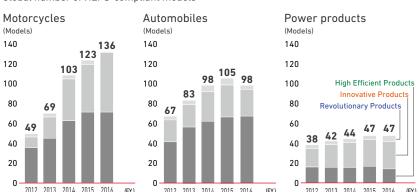
Products that emit less CO2 because they use an environmentally innovative technology or an alternative energy source. This category includes motorcycles that incorporate Honda's patented Idling Stop

System, automobiles that incorporate hybrid technologies or direct injection engine technologies, and power products with electronic fuel injection (FI). Alternative energy technologies include motorcycles and automobiles that can run on ethanol and power products that can run on gaseous fuels. Compliance is determined based on how well a product reduces or helps reduce CO2 emissions during use compared with preceding models.

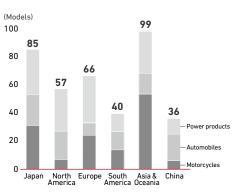
#### • Revolutionary Products

Products that reduce or eliminate CO2 emissions by harnessing renewable energies or facilitating total energy management. This category includes products that incorporate electromotive technologies or technologies for using renewable energy.

#### Global number of HEPS-compliant models



#### Number of HEPS-compliant models by region (FY 2016)





8 Assurance

9 Financial Data

## **Product Initiatives**

## Effective Utilization of Resources

With the aim of eliminating risks related to resources and disposal, Honda is promoting the 3Rs by looking at the entire life cycle from the development of products to their disposal.

#### Initiatives in the Development Stage

## 3R pre-assessment system

Honda introduced the 3R pre-assessment system, which assesses the 3R elements of each model to be newly developed in the stage of product development, for motorcycles in 1992 and for automobiles in 2001. We are striving to improve the level of 3R elements.

## Design focusing on Reduction

We are making efforts in downsizing and weight reduction by considering alternative structures and materials for all components in each product, such as the body framework, engine and bolts.

For example, we used thinner structural bumpers in the N-WGN, which was launched in FY2014, as part of a reduction-



Expanding use in Japan starting with the N-WGN



Rolling out the new design out globally starting with the 16M Civic

oriented design geared toward creating a lighter product. The availability of materials with higher rigidity and fluidity along with advances in manufacturing technologies allowed us to reduce the weight of the previous design by approximately 20%, which had an average thickness of 3.0 mm, by using less resin in bumper production.

In Japan, we are progressively expanding the use of these enhanced structural bumpers in new models launched after the N-WGN. Overseas, we have begun rolling it out globally with the 16M Civic. We expect to further reduce material use by applying the new design worldwide.

## Design focusing on Reuse/Recycling

We are engaging in structural design that takes into account easier recycling and maintenance, use of easily recyclable materials and recycled resins, and display of contents of materials for resin/rubber components, etc. For automobiles, we use easily recyclable materials for a wide array of exterior/ interior components, such as inner weather-stripping and the outer surface of instrument panels, and at the same time have enabled the use of recycled materials for air conditioner ducts. In addition, we label resin and rubber parts with their constituent materials wherever possible to facilitate recycling.

As a result of the activities mentioned above, with regard to the recyclable rate\*1 for all new and redesigned vehicles sold in FY2016, we are maintaining more than 90% for automobiles and more than 95% for motorcycles, as well as a recoverability rate of more than 95% for components/ materials\*2 used in power products.

- \*1 Index based on "Definition of Recyclable Rate for New Vehicles and Guidelines on Calculation Method" issued by Japan Automobile Manufacturers Association, Inc. (JAMA)
- \*2 Recyclable rate that includes the thermal energy recovered; In accordance with calculation methods of recyclable rate for cars in ISO22628, etc.

## Reduction of chemical substances

Honda is moving ahead with the reduction of four types of heavy metals (lead, mercury, hexavalent chromium and cadmium) that are considered to have negative impacts on the environment. With regard to automobiles in Japan, for new and redesigned vehicles sold in FY 2016, components that do not use mercury were chosen for combination meters. We are striving to eliminate the use of mercury on a voluntary basis.



7 GRI Content Index

8 Assurance

9 Financial Data

### **Product Initiatives**

### Initiatives at the Product Use Stage

## Recycling of end-of-life components

We collect and recycle end-of-life components generated from repair, replacement, etc., from dealers nationwide. In FY2016, we collected and recycled approximately 160,000 end-of-life bumpers. Collected bumpers are recycled and used for splash guards and other components of the Freed model.

Honda will continue the recycling of end-of-life components, including the collection/recycling (remanufacturing) of end-oflife torque converters and hybrid vehicle drive batteries.

#### Flow of recycling for end-of-life bumpers

Used for the splash guard of the Freed



Recycled resin pellets

## Initiatives in the Disposal Stage

### Initiative for automobiles

The Act on Recycling, etc., of End-of-Life Vehicles (automobile recycling law) requires automakers to collect and properly treat three items: fluorocarbons that are used as a cooling medium in the air conditioners and destroy the ozone layer and cause climate change when being vented to atmosphere, airbags that are explosive and difficult to dismantle, and shredder dust (Automobile Shredder Residue (ASR)) that remain after the useful substances have been recovered from the end-of-life vehicles.

In FY2016, the number of Honda automobiles collected was approximately 450,000 for fluorocarbons (-2.0% from the previous fiscal year), approximately 410,000 for airbags (+0.4%) and approximately 490,000 for ASR (-2.6%). Recycling rates for gas generators and ASR were 93.2% and 97.2%, respectively, which satisfy the recycling rates specified by ordinance of the relevant ministry. The total cost required for recycling and related activities was 4.83 billion yen, and the total amount of recycling deposit, etc., received was 5.59 billion yen.

## Initiative for motorcycles

Honda joined hands with other motorcycle manufacturers in Japan and participating motorcycle importers and started to implement the voluntary recycling of motorcycles in October 2014. With the cooperation of related dealers, various companies in the motorcycle industry started this scheme for providing a safety net for the treatment of end-of-life motorcycles, the world's first of its kind. End-of-life motorcycles are collected at the dealers and the designated points of collection free of charge and are properly recycled at recycling facilities.

Regarding end-of-life motorcycles collected at designated points of collection, there were 1,040 Honda products in FY2016, which accounted for 61.9% of all units collected. The recycling rate of Honda products\* came to 96.3% on a weight basis, enabling us to achieve the target recycling rate of 95% by FY2016.

\*Calculation based on the actual results of treatment at the recycling facilities



8 Assurance

9 Financial Data

**Corporate Activities Initiatives** 

# Responses to Climate Change and Energy Issues

With the aim of ultimately achieving zero CO<sub>2</sub> emissions and zero energy risk, Honda is focusing on the reduction of energy consumption and CO<sub>2</sub> emissions while expanding production/sales globally. Mid-term plans for operations related environmental initiatives specify the reduction of CO2 emissions intensity per unit of production\*1 by 10% by FY2017 (baseline: FY2009) as the target. In the future, we will aim at sustaining the reduction until the rate of reduction of energy consumption exceeds the rate of increase of energy use for the manufacturing of products.

Toward the realization of the above-mentioned target, when building or renovating our plants we aggressively introduce the energy-saving technologies and know-how that is applied to our newest plants, such as the Saitama Factory's Yorii assembly plant that achieved a 30% reduction in per unit energy use compared to other Honda plants\*2. To support the energysaving initiatives of various business sites operating around the world, we have built a mechanism for promoting information sharing among business sites and regions, and at the same time, we are enhancing technical support from Japan.

In addition, Honda is actively introducing renewable energy. In FY2015, we started operation of a 27 MW wind power facility in South America. In China, we made progress on installing solar power generation systems at Honda facilities, bringing total capacity installed by FY2016 to 38 MW. We are also working to use renewable energy in other regions as appropriate in light of local conditions.

## Effective Utilization of Resources

Honda is also focusing on the elimination of risks related to resources and disposal, and we are making efforts to reduce the volume of water resources used and waste generated. For example, to minimize water use, various business sites are implementing initiatives based on regional circumstances, such as the utilization of recycled water and water conservation.

We are also working to recycle and reuse water in manufacturing processes, which utilize about 4.8 million cubic meters of water each year, or about 20% of all water use by Honda. This ongoing effort includes installing full recycling systems that allow reuse of almost 100% of all water at Honda Engineering Co., Ltd. (Japan), the No. 2 Plant at Honda Automobile (Thailand) Co., Ltd. (Thailand) and the No. 2 Plant at Guanggi Honda Automobile Co., Ltd. (China).

Since Honda seeks out communities where harmonious coexistence with nearby water sources is viable as potential plant locations, and builds plants in compliance with host countries' environmental assessment laws and regulations, no water sources are significantly impacted by our water use. In addition, no water sources are affected by wastewater from Honda facilities since we treat wastewater and discharge treated water in accordance with applicable laws and regulations.

Regarding the reduction of waste, we are stepping up 3R efforts that include resource use-reduction initiatives, such as the reduction of by-products through an increase in throughput vields.

Honda does not import or export waste deemed hazardous under the terms of Basel Convention Annex I, II, III, or VII. In addition, we are striving to eliminate all use of ozonedepleting substances (ODSs) at business sites in accordance with the Montreal Protocol and local laws and regulations in the countries in which we operate, and there are no major emissions from any of our operations.

## **Biodiversity Conservation**

Recognizing that our business activities can have an impact on biodiversity, Honda has long been putting a great deal of effort into activities that have led to the conservation of biodiversity. We carried out tree-planting and water-recycling initiatives at our plants in the 1960s and launched the Community Forest program in 1976.

In 2011, we established the Honda Biodiversity Guidelines. As the basic statement, it stipulates as follows: "We recognize, under the Honda's Environment Statement, that biodiversity conservation initiatives are an essential part of our commitment to the preservation of the global environment. We will continue to work toward harmony between this commitment and our activities."

We believe that minimizing the environmental impact resulting from the products we manufacture and our business activities represents the greatest contribution we can make to biodiversity conservation. The guidelines specify the priorities, including the development of environmental technology, initiatives based on corporate activities and initiatives for living in harmony with local communities, and we are actively promoting them.

Honda recognizes the emissions of GHGs and various other pollutants as two of the greatest impacts of business activities that threaten biodiversity. Consequently, we have set priorities under the Guidelines and are working systematically to minimize both impacts. Each of Honda's key business sites in Japan also conducts a survey on the actual conditions of biodiversity and is promoting various activities that are appropriate for the applicable species, such as thinning, pruning and eradication of non-native species. Moreover, we cooperate with "Monitoring Sites 1000" (a project for promoting the monitoring of survey sites of important ecosystems) implemented by the Japanese government as a member of the International Union for Conservation of Nature and Natural Resources (IUCN), which creates an annual Red List. For the above project, we continue to carry out fixed-point observation and reporting on ecosystems.



<sup>\*1</sup> Intensity that is a weighted average calculated on the basis of CO2 intensity and the units produced for each of motorcycles, automobiles and power products

<sup>\*2</sup> Comparison with Saitama Factory's Sayama assembly plant

GRI Content Index

8 Assurance

9 Financial Data

## **Corporate Activities Initiatives**

#### TOPICS

## The Introduction of a Zero-Liquid-Discharge System at a Motorcycle Plant in India

Honda Motorcycles and Scooter India Pvt. Ltd. (HMSI) has introduced a zero-liquid-discharge (ZLD) system that completely eliminates wastewater by reusing all water at its Manesar Plant.

ZLD systems eliminate wastewater discharged by incorporating advanced technologies, such as electrochemical pre-processing and reverse osmosis into wastewater treatment. The installation has made it possible to reuse all of the facility's wastewater, which was previously discharged into public sewers after suitable treatment. With thanks to the ZLD system installed in 2015, the Manesar Plant is now capable of saving 210,000 tons of water per year.

The Pollution Control Board in Harvana State, where the Manesar Plant is located, has issued a certificate to the facility in recognition of the technology used in the new ZLD system. To strengthen its environmental initiatives, HMSI installed the ZLD system in the energysaving building that conserves electricity relying on natural lighting and nighttime LED lighting as well as using natural ventilation systems.



Zero-liquid-discharge system



Natural lighting

#### TOPICS

## Working to Install Solar Power Systems at All **Business Sites in China**

Since we began automobile production in China in 1999, Honda has worked to reduce the environmental impact of these operations. As part of that effort, we are installing solar power systems at business sites across the country.

The effort began in 2010 with the installation of a 0.1 MW system at the No. 2 Plant operated by Dongfeng Honda Automobile Co., Ltd. in Wuhan and has since expanded nationwide.

To date, systems have been installed at 10 sites, and during FY 2016 a 17.0 MW system was installed at the ZengCheng Plant operated by Guanggi Honda Automobile Co., Ltd. To date, we have installed a total of 38.15 MW of generating capacity under this program.

Honda Auto Parts Manufacturing Co., Ltd., where a 10.7 MW solar power system was installed during the previous fiscal year, helped slash emissions by 10,400 t-CO<sub>2</sub> by generating 11,015 MWh of electricity that was sold back to the grid to offset power purchases.



ZengCheng Plant (Guanggi Honda Automobile Co., Ltd.)



Honda Auto Parts Manufacturing



8 Assurance

9 Financial Data

## **Mid-Term Plans for Environmental Initiatives**



	of Initiatives towar		a remin	lans for Environmental Initiatives (FY2015–FY2017)		FY2016 Initiatives	
energy	Product life-cycle standpoint Achieve global targets for reducing global CO2 emissions	Products	Achieve best-in-industry fuel efficiency and accelerate popularization and expansion  Motorcycles  -Expand use of programmed fuel-injection system (PGM-FI) and low-friction engine especially in commuter vehicles		Achieve best- Motorcycles	in-industry fuel efficiency and accelerate popularization and expansion  Expanded the application of eSP <sup>1</sup> , a next-generation global engine that delivers high environmental performance and is equipped with PGM-FI and low-frict technologies, especially to commuter vehicles	
						-In the Japanese market, introduced Giorno scooter with a liquid-cooled, 4-stroke, OHC, single cylinder 50 cc engine "eSP", which realizes outstanding fuel efficie and environmental performance through the use of low friction technology, PGM-FI and an idling stop system	
	intensity with a focus on early stabilization		Automobiles	-Continue deployment of Earth Dreams Technology started in the previous three-year mid-term period  -Phase in the global application of 2.0L, 1.5L and 1.0L downsized/turbocharged direct-injection engines that realized class-leading power output and environmental performance	Automobiles	Continuously developed Earth Dreams Technology	
	of total CO2 emissions and future reduction from the standpoint of the product life cycle					-In the Japanese market, launched Step Wagon and Step Wagon Spada with newly developed direct-injection 1.5L VTEC TURBO in April, which realizes class-lead fuel efficiency of 17.0km/L <sup>-3</sup>	
						-In the North American market, launched Civic Sedan with the region's first 1.5L in-line 4-cylinder DOHC direct-injection turbo engine and 2.0L in-line 4-cylinder DOHC i-VTEC engine, with both engines realizing powerful performance and exceptional fuel efficiency	
			Power products	-Expand application of small engines and make engines compatible with diverse types of fuels	Power products	Expanded application of small engines and made engines compatible with diverse types of fuel	
						-Launched WX10T and WX15T engine-driven water pumps designed for applications such as sprinkler systems, irrigation and discharging water in July, we contribute to improvement <sup>14</sup> in pump head and discharge capacity and better fuel efficiency compared with conventional models by approximately 10% employing a high-efficiency impeller and a new pump shape	
						-Launched 4-stroke outboard engine BF100 (100 horsepower) and the BF80 (80 horsepower) in December, with both models realizing exceptional environment performance and class-leading '5 fuel efficiency by employing lean burn control and programmed fuel injection (PGM-FI)'6	
						-Newly employed load following power generation control mechanism in the gas engine co-generation unit for the home MCHP1.0K3 and the MCHP1.0R1 unit self-sustaining functionality, thereby reducing surplus power and increasing in-house power generation time through the variable control of power gener between 0.7-1.0kW in line with the power consumed in the home	
			Establish and o	deploy next-generation electric powered technologies	Establish and	deploy for next-generation electric powered technologies	
			Motorcycles	-Market electric motorcycles that meet local needs in developed (Japan: leased) and emerging countries (China)	Motorcycles	-Launched EV-Cub Concept, a motor-equipped Super Cub, which has been described as the origin of Honda, at the 44th Tokyo Motor Show 2015, with the aim to lau the EV-Cub in Japan two years in the future	
			Automobiles	-Expand lineup of models equipped with i-MMD, i-DCD hybrid systems	Automobiles	-Expand lineup of models equipped with i-MMD, i-DCD hybrid systems:	
				<ul> <li>Introduce in Acura models the Sport Hybrid SH-AWD, a three-motor hybrid system with seven-speed DCT with a built-in motor for the front wheels and independent motors for the left and right rear wheels</li> <li>Release a production FCV model in Japan in 2015, and the U.S. and Europe thereafter, to advance the popularization of FCVs</li> </ul>		-In the Japanese market, newly added a hybrid model equipped with a Sports Hybrid i-MMD <sup>17</sup> to the Odyssey series that achieves 26.0km/L (JC08 mode) 8, whi class-leading fuel efficiency 9	
						-Popularization of FCVs:	
						-In the Japanese market, launched FCV CLARITY FUEL CELL, which is the world's first*10 5-seater among sedan type FCVs and boasts an industry-leading*10 cru range of approximately 750km*11	
			Power products	<ul> <li>-Advance an electric robotic lawnmower for household use (Miimo) and expand lineup of electric products</li> </ul>	Power products	Developed initiatives to reduce CO <sub>2</sub>	
						-Started sales of a portable external power output device, the Power Exporter 9000. In combination with the Power Exporter 9000, the new FCV CLARITY FUEL can function as a "power source on wheels" that is capable of supplying approximately seven-days" overth "2 of electricity for an average household. In additing FCVs (Clarity), the Power Exporter 9000 can be used for EVs and PHEVs that comply with the V2L standard.	
	Strengthen initiatives from a product lifecycle perspective	activities		Corporate activities	-(Global): Reduce CO2 emissions per unit of production*13 by 10% by FY2017 (baseline: FY2009)	Corporate activities	-(Global): Reduce CO2 emissions per unit of production by 16% by FY2016 (baseline: FY2009)
			Purchasing area	-Promote measurement and reduction of supply chain GHG emissions in each region based on the Green Purchasing Guidelines	Purchasing area	-Worked with suppliers to visualize energy consumption and reduce CO2 emissions	
						-Presented awards for environmental initiatives in each region and enhanced interest in reducing environmental load among many more suppliers worldwide	
			Production area	-Disseminate advanced environmental technologies developed at the Yorii assembly plant in Japan, which began operations in 2013, to other production sites worldwide	Production area	-Disseminated advanced environmental technologies on a global basis, ensured efficient management of energy during non-operating times, upgraded equipr such as by shifting to motors controlled by inverters, reused exhaust energy and installed renewable energy equipment in line with location requirements in	
				-Set benchmarks for energy use and achieve the benchmark level for energy efficiency		region, etc.	
				-Introduce and expand the scope of renewable energy systems			
				-South America: Wind power generation system			
				-China: Megawatt-scale solar photovoltaic system			
				-Japan: Megawatt-scale solar photovoltaic system at new test course in Sakura, Tochigi			

area

product

administration,

development areas

Prefecture

efficiently

improving truck fuel efficiency, etc.

-Spread packaging specifications without exterior containers worldwide -Promote energy conservation by encouraging eco-etiquette and using facilities more

-Increase transportation efficiency in each region by implementing modal shifts, Transportation -Reduced C02 emissions by making a modal shift, changing from gasoline to natural gas trucks and ensuring efficient container transport, and reduced waste in

packaging materials by innovating packaging and packing

efficiency

Sales and service, -Shifted to LED lighting, used natural sunlight, saved energy by improving operations, for example, for air conditioning equipment and improved data center cooling

area

administration, product

development areas

<sup>1:</sup> Generic name for an engine for scooters that employs advanced technology such as low fuel consumption technology and an ACG starter and boasts enhanced

environmental performance and engine performance. \*2: Survey by Honda: As of April 2015

<sup>\*3:</sup> Value taken from a Ministry of Land, Infrastructure, Transport and Tourism review

<sup>\*4:</sup> Compared with previous Honda models

<sup>\*5:</sup> For 100 horsepower and 80 horsepower engines; Survey by Honda (As of November 30, 2015)

<sup>\*6:</sup> PGM-FI is a registered trademark of Honda

<sup>\*7:</sup> Abbreviation of Intelligent Multi-Mode Drive

<sup>\*8:</sup> Value taken from a Ministry of Land, Infrastructure, Transport and Tourism review

<sup>\*9:</sup> Survey by Honda; As of February 2016

<sup>\*10:</sup> Survey by Honda: As of February 2016 \*11: Measured internally by Honda while driving in JC08 mode

<sup>112:</sup> Calculated using the average power consumption for a day in an average household in Japan (based on a survey by The Federation of Electric Power Companies in Japan)

<sup>13:</sup> CO2 emissions per unit of production: Intensity was calculated by weighting the average reduction percentages for motorcycles, automobiles and power products with the CO2 emissions associated with their respective life cycles.

Effectively

resources

Reduce

exhaust

emissions

Biodiversity

management

1 Editorial Policy

2 Overview of Honda

3 Message from the President and CEO

4 Special Feature

5 Sustainability Management

Performance Report 1 Environment 2 Safety 3 Quality 4 Human Resources 5 Social Activity 6 Supply Chain

Minimize water use

Reduce exhaust

management of

used in products

Reduce VOC\*14

emissions from

Engage in

conservation initiatives rooted in

Guidelines

Environmental Improve global/

chemical substances

production processes

local communities in

accordance with the

Honda Biodiversity

regional structures

for promotion of

environmental

management and enhance environmental information disclosure

emissions

Enhance the

-Steadfast compliance with laws/regulations for the recycling of end-of-life products in

-Japan: Maintain an automobile shredder residue (ASR) recycling rate of more than 70%

-Reduce water use according to conditions in each region, for example, by using recycled

-Make steady progress in reducing exhaust emissions to comply with tighter emission

-Continue to promote management of chemical substances used in products and employ

Continue to operate global management systems for chemical substances used in products

-Advance VOC emissions reduction technologies for paint processes and expand

-Spread "Honda Smart Ecological Paint" introduced at the Yorii assembly plant in Japan

-Strengthen autonomy and self-reliance of structures for promotion of environmental

-Advance sustainability reporting that compiles information in each dimension of the

to comply with applicable regulations on chemical substances in various countries

application to overseas production sites and motorcycle paint processes

and improve the motorcycle recycling rate to more than 95% by 2015

-Collaborate with suppliers to increase use of metal scrap

water and conserving water in production processes

alternatives to substances of very high concern

to other new production sites worldwide

environment, society and legal compliance

-Maintain zero landfill waste performance (Japan and Europe)

7 GRI Content Index

8 Assurance

9 Financial Data

### **Mid-Term Plans for Environmental Initiatives**

Corporate activities

Corporate

Products

Corporate

activities

Corporate

Corporate

Production area

Corporate

Collaboration

communities

with local

#### Direction of Initiatives toward 2020 Mid-Term Plans for Environmental Initiatives (FY2015–FY2017) Results of FY2016 Initiatives Climate Market new products Products -Using demonstration test houses in Japan, verify the daily operation and practicality -Honda started installing the package-type Smart Hydrogen Station (SHS) that generates and stores hydrogen and is capable of producing and supplying highchange and of technologies developed to realize zero-carbon mobility and daily living by 2020 in pressure hydrogen gas with no CO2 emissions from power such as renewable energy without the use of a compressor by employing Honda's original high-pressure to eliminate CO2 energy water electrolysis system Power Creator. Launched the FCV CLARITY FUEL CELL in which hydrogen is combined with oxygen in the fuel cell to induce a chemical

	emissions from mobility and daily living		-Work with local governments in Japan to carry out demonstration testing of the MC- $\beta$ micro EV with the aim of developing next-generation vehicles that minimize environmental impact while spreading the joy and freedom of mobility, and to offer each community development solutions that are suitable for each location (Japan)
y	Increase 3R efforts	Products	-3R pre-assessment system
			Design for 2D (Deduce Design)

various countries

-Reduction of chemical substances -Recycling of end-of-life components

increasing throughput yields

regulations in various countries

reaction and generate electricity to turn the motor. No CO2 is emitted during this process with only water discharged, making it an extremely clean energy source. This product is being sold together with the V2L compatible portable external power output device Power Exporter 9000, which converts electricity from vehicles equipped with an external power supply function to electric power for the home for use as an emergency power source in a disaster and in various places at ordinary times such as outdoor events

-Continued to utilize the 3R pre-assessment system

-Continued to design for 3R and reduction of chemical substances

-Collected and recycled end-of-life products including bumpers

-Steadily complied with laws/regulations for the recycling of end-of-life products in various countries

-Japan: Automobile shredder residue (ASR) recycling rate of 97.2% and motorcycle recycling rate of 96.3%

-Enhance initiatives to reduce resource use, including the reduction of by-products by Production area -Implemented measures to improve yield such as the tailored blank production method and laser blanking

-Collaborated with suppliers to increase use of metal scrap

-Maintained zero landfill waste performance (Japan and Europe)

Production area -Reduced water consumption in line with the circumstances of each region, which included using water efficiently in production processes and using recycled water -Used smart shower testers, encouraged use of rainwater and installed zero water discharge systems

-Made progress in reducing exhaust emissions to comply with tighter emission regulations in various countries

-Continued to manage chemical substances used in products and employ alternatives to substances of very high concern

-Continued to operate global management systems for chemical substances used in products to comply with applicable regulations on chemical substances in various countries and reduce risks

-Complied with regulations in each region concerning harmful substances and water use that impact the ecosystem

-Spread "Honda Smart Ecological Paint" introduced at the Yorii assembly plant in Japan to other new production sites worldwide

-Address the issues of hazardous substances and water use that lead to the destruction Corporate -Raise the awareness of parties involved, including the supply chain -Promote HondaWoods\*15 activities

-Promoted HondaWoods activities

-Breakdown of HondaWoods communities

Japan: Deployed at 14 sites

-Strengthened autonomy and self-reliance of structure for promotion of environmental management in each region and strengthened global collaboration

Held a regional working level meeting

-Disseminated environmental information concerning each region on the internet and Issued environmental report, etc

14: VOC (Volatile Organic Compounds): Chemical substances that derive from organic solvents mostly contained in paints and thinners and which generate photochemical oxidants

15: HondaWoods: A new initiative that started in 2014 for the forests on Honda's business sites in Japan in order for these forests to coexist and co-prosper with local communities and become sustainable and resilient to changes

management in each region, and strengthen global collaboration



7 GRI Content Index

8 Assurance

9 Financial Data

### **Environmental Data**

#### Honda GHG Emissions in FY2016

As a responsible company operating in the mobility industry, Honda believes in the importance of calculating and disclosing GHG emissions in order to drive progress in initiatives to reduce alobal emissions.

As the first milestone in this endeavor, in August 2012 Honda became the world's first mobility company to disclose estimates of all GHG emissions from its entire value chain in conformity with the Greenhouse Gas Protocol (GHG Protocol)\*, currently the world's most widely used GHG emissions accounting standard. We released estimates of emissions for FY2012 not only from our own business activities (Scopes 1 and 2) but also from all upstream and downstream activities (Scope 3), extending from the procurement of raw materials to the transportation and customer use of Honda products and ending with the treatment of end-of-life products.

Honda continues to calculate and report its emissions and is making improvements to get a more accurate reading of emissions from our entire value chain. We are doing this in Scope 3 (other indirect emissions), for example, by widening the boundaries of data collection for categories that account for the largest proportion of estimated emissions, and by improving the accuracy of calculation methods.

The calculations for FY2016 show that GHG emissions from Honda business activities were 5.14 million t-CO2e, and total emissions from the value chain, including other indirect emissions, were 285.10 million t-CO2e. We will continue to monitor and manage data and utilize them in the actual implementation of emissions reduction measures.

\*Development of the GHG Protocol was led by the World Business Council for Sustainable Development (WBCSD) and the World Resources Institute (WRI).

## Reducing GHG Emissions from Use of Sold Products

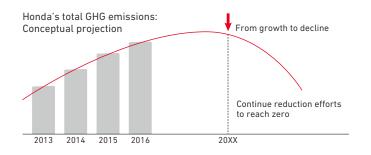
Scope 3, category 11 emissions (emissions from use of products sold to our customers) account for more than 81% of GHG emissions from Honda's entire value chain. This means finding ways to reduce emissions related to customer use of Honda products is of primary importance in reducing emissions from our value chain. To this end, we have established the target of reducing global average product CO2 emissions intensity by 30% from 2000 levels by 2020, and are working to improve the fuel efficiency of our products.

For the foreseeable future, however, our production volume is likely to outpace expected improvements in fuel efficiency of our products, so even if we achieve this target, we still project an increase in Scope 3, category 11 emissions.

Nevertheless, we need to find ways to reverse this ascending curve at some point. What Honda is shooting for is to reduce total emissions from our products, even as production expands.

## Reducing Total GHG Emissions

Honda's ultimate aim is to reach the point of having zero GHG emissions from its products and business activities. We have adopted a vision of the future that sees us shrinking environmental impact down to zero, and we will aim to cut Honda's total GHG emissions in half by 2050.



#### Promoting Life-Cycle Assessment (LCA)

We have been developing our own methods to reduce the environmental impacts of our business activities and across product life cycles, from production through disposal.

In March 2002, we built the Honda Life-Cycle Assessment (LCA) Data System, a system for quantitatively measuring CO2 emissions from all business activities, and since then we have been making focused efforts to meet reduction targets set for each business area including production, purchasing, sales and service, administration and transportation.

We are also calculating and assessing CO2 emissions across product life cycles, from raw material procurement to product disposal for the entire vehicle, and making use of this information in our efforts to reduce CO2 emissions for each model. This approach is also important when considering applications for the next-generation technologies that will become more diverse further in the future, and so we will utilize the above information further to develop low-carbon solutions at the development stage, for instance.



1 Editorial Policy

2 Overview of Honda

3 Message from the President and CEO

4 Special Feature

5 Sustainability Management

Performance Report 1 Environment 2 Safety 3 Quality 4 Human Resources 5 Social Activity 6 Supply Chain

7 GRI Content Index

8 Assurance

9 Financial Data

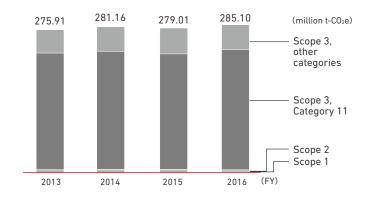
#### **Environmental Data**

ital GHG emissions					(million t-CO2e)
		FY2013	FY2014	FY2015	FY2016
ons from the entire Honda value chain	(Scopes 1, 2, and 3)	275.91	281.16	279.01	285.10
Direct emissions from business activities	(Scope 1)	1.41	1.41	1.38	1.33
ndirect emissions from energy use	(Scope 2)	3.54	3.80	3.86	3.81
Emissions from Honda business activities	(total of Scopes 1 and 2)	4.95	5.21	5.24	5.14
Emissions from customer use of sold products	(Scope 3, category 11)	225.95	228.14	223.54	231.77
Other emissions	(Scope 3, other categories)	45.01	47.81	50.23	48.19
Other indirect emissions	(total of Scope 3)	270.96	275.95	273.77	279.96
r = 0	ns from the entire Honda value chain irect emissions from business activities direct emissions from energy use missions from Honda business activities missions from customer use of sold products ther emissions	ns from the entire Honda value chain (Scopes 1, 2, and 3) irect emissions from business activities (Scope 1) indirect emissions from energy use (Scope 2) imissions from Honda business activities (total of Scopes 1 and 2) imissions from customer use of sold products (Scope 3, category 11) ther emissions (Scope 3, other categories)	FY2013  Ins from the entire Honda value chain (Scopes 1, 2, and 3) 275.91  Irrect emissions from business activities (Scope 1) 1.41  Indirect emissions from energy use (Scope 2) 3.54  Immissions from Honda business activities (total of Scopes 1 and 2) 4.95  Immissions from customer use of sold products (Scope 3, category 11) 225.95  Ither emissions (Scope 3, other categories) 45.01	FY2013   FY2014	FY2013         FY2014         FY2015           Instruct emissions from business activities         (Scopes 1, 2, and 3)         275.91         281.16         279.01           irrect emissions from business activities         (Scope 1)         1.41         1.41         1.38           indirect emissions from energy use         (Scope 2)         3.54         3.80         3.86           imissions from Honda business activities         (total of Scopes 1 and 2)         4.95         5.21         5.24           missions from customer use of sold products         (Scope 3, category 11)         225.95         228.14         223.54           ther emissions         (Scope 3, other categories)         45.01         47.81         50.23

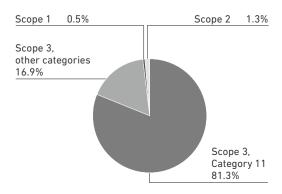
- Scope 1: Direct GHG emissions from business activities, as defined by the GHG Protocol (examples: combustion of fuel oil at a manufacturing plant, emissions from work vehicles and company cars). The Scope 1 figures presented in this report include all GHGs emitted directly by Honda Motor Co., Ltd. and its consolidated subsidiaries and affiliated companies worldwide. Honda uses the latest emission factors in each region, using the emission factor for GHG Emissions Accounting, Reporting and Disclosure System based on the Act on Promotion of Climate Change Countermeasures (after H22.3 revision) in Japan and using emission factors from the 2006 IPCC Guidelines for National Greenhouse Gas Inventories in each region except Japan. Figures for climate change potential coefficient are derived from the IPCC's Fourth Assessment Report (2007).
- Scope 2: Indirect GHG emissions from a company's use of energy, as defined by the GHG Protocol (examples: electrical energy used by a manufacturing plant or office). The Scope 2 figures presented in this report include all GHGs emitted directly by Honda Motor Co., Ltd. and its consolidated subsidiaries and affiliated companies worldwide. Honda uses the latest emission factors in each region. adjusted emission factors from respective electrical power suppliers in Japan and emission factors from the IEA's Emissions from Fuel Combustion in each region except Japan. This corresponds to the GHG Protocol's standard market-based method.
- Scope 3: Other indirect GHG emissions not included in Scope 1 and Scope 2, as defined by the GHG Protocol. Scope 3 is systematically broken down into 15 categories (examples: category 11 includes emissions arising from the use of sold products; category 12 includes emissions arising from the end-of-life treatment of sold products).
- The "Scope 3, category 11" figures presented in this report represent the cumulative amount of GHGs that will have been emitted by products sold by Honda in the applicable fiscal year (automobiles, motorcycles, power products) as a result of their use by customers from the time they received those products until they dispose of them in the future. Calculations cover the emission of approximately 90% of all motorcycles, automobiles and power products sold worldwide under the Honda brand name. These emissions are calculated using the following formula for each model and adding the results: CO2 emissions intensity x Annual distance traveled (for power products: annual usage in hours) x Product lifetime in years x Annual unit sales.
  - CO2 emission factor: Referring to the greenhouse gas calculation guidelines that public authorities issued. If there are no appropriate guidelines, reference from the ones of Japanese.
  - Annual mileage / Lifetime years of use: Referring to IEA estimation model "SMP Model" etc.
- The "Scope 3, other categories" figures presented in this report are the sum of emissions from categories 1, 2, 3, 4, 5, 6, 7, 9, 10, 12 and 15. As per the GHG Protocol, Honda excludes categories 8, 13 and 14 from its calculations, as these categories are either not part of Honda business activities or emissions from these categories are accounted for in other categories.

Data indicated with  $\square$  received the independent practitioner's assurance.





#### Breakdown of total FY2016 GHG emissions





1 Editorial Policy

2 Overview of Honda

3 Message from the President and CEO

4 Special Feature

5 Sustainability Management

Performance Report 1 Environment 2 Safety 3 Quality 4 Human Resources 5 Social Activity 6 Supply Chain

7 GRI Content Index

8 Assurance

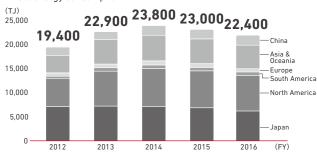
9 Financial Data

### **Environmental Data**



#### **Energy consumption**

#### Direct energy consumption 🗹



Companies covered: All consolidated subsidiaries and affiliated companies of the Honda Group (excluding

Telatively small-scale companies).

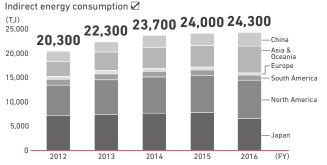
Calculation method: Consumption amount = Σ (Fuel consumption x unit calorific value)

Unit calorific value:

Japan: Unit calorific value from Reporting and Disclosure System based on the Act on Promotion of Global

Warming Countermeasures
Regions outside of Japan: Derived from 2006 IPCC Guidelines for National Greenhouse Gas Inventories

"Calculations are mainly based on energy consumed by stationary sources.
"A terajoule (TJ) is a unit of energy, "tera" meaning 10 "5.
"Expressed in three significant digits



Companies covered: All consolidated subsidiaries and affiliated companies of the Honda Group (excluding relatively small-scale companies). Calculation method: Consumption amount =  $\Sigma$  (Purchased electricity consumption etc\*1 x unit calorific value)

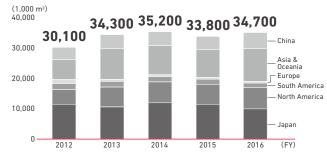
Purchased electricity has been converted to joules using the international standard 3.6 GJ/MWh.

1: unter Japan: Unit calorific value from Reporting and Disclosure System based on the Act on Promotion of Global Warming Countermeasures. Regions outside of Japan: 2006 IPCC Guidelines for National Greenhouse Gas Inventories

\*Expressed in three significant digits

#### Water use/wastewater volume

#### Water use volume (Amount of water intake)

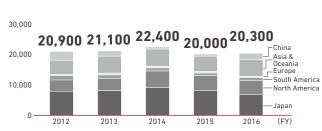


Companies covered: All consolidated subsidiaries and affiliated companies of the Honda Group (excluding relatively small-scale companies).
Calculation method: Volume amount = Σ. (Purchased from the water facilities + Groundwater intake + Rainwater

utilization amount + Surface such as rivers water intake) \*Expressed in three significant digits

#### Wastewater volume 🗹





Companies covered: All consolidated subsidiaries and affiliated companies of the Honda Group (excluding relatively small-scale companies). Calculation method: Volume amount =  $\Sigma$  (Wastewater processed by other companies + Discharge directly into

\*Expressed in three significant digits

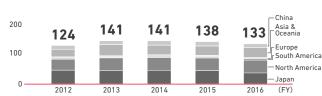
#### public waters) \*Figures include some estimated values.

#### **GHG** emissions

#### Direct emissions

(10,000 t-CO2e) 400

300



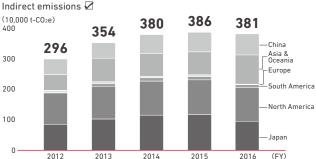
Companies covered: All consolidated subsidiaries and affiliated companies of the Honda Group (excluding relatively small-scale companies).
Calculation method: Emissions amount = ∑(Volume of fuel usage x COz emission factor) + COz emissions from non-energy sources + ∑(Volume of non-Co

Japan: Emission factors from Reporting and Disclosure System based on the Act on Promotion of Global Warming Countermeasures (after H22.3 revision)

Lounier measures latter HZL3 revision)
Regions outside of Japan: Emission factors from 2006 IPCC Guidelines for National Greenhouse Gas Inventories.
Figures for global warming potential coefficient: The IPCC's Fourth Assessment Report (2007)
Figures of GH6 emissions from non-energy source include some estimated values.

\*\*Calculations are mainly based on emissions from stationary sources.

\*\*Expressed in three significant digits.\*\*



Companies covered: All consolidated subsidiaries and affiliated companies of the Honda Group (excluding relatively

companies Levi-A. A. Companies).

Calculation method: Emissions amount =  $\Sigma$  (Purchased electricity consumption etc\*) x emission factor)

Calculation method: Emissions amount  $= \Sigma$  (Purchased electricity consumption etc') x emis Emission factor: The latest emission factors in each region. Japan: Adjusted emission factors from respective electrical power suppliers Regions outside of Japan: Emission factors from the IEA's Emissions from Fuel Combustion.

1. Other includes the steam and hot water, the emission factors is quoted from Reporting and Disclosure System based on

the Act on Promotion of Global Warming Countermeasures.

This corresponds to the GHG Protocol's standard market-based method. Expressed in three significant digits

Data indicated with  $\square$  received the independent practitioner's assurance.

1 Editorial Policy

2 Overview of Honda

3 Message from the President and CEO

4 Special Feature

5 Sustainability Management

Performance Report 1 Environment 2 Safety 3 Quality 4 Human Resources 5 Social Activity 6 Supply Chain

7 GRI Content Index

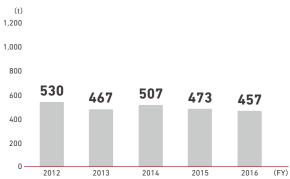
8 Assurance

9 Financial Data

#### **Environmental Data**

#### Atmospheric pollutants

#### S0x emissions ✓



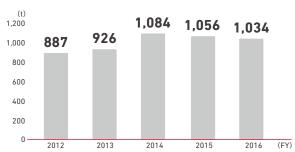
Companies covered: All consolidated subsidiaries and affiliated companies of the Honda Group (excluding relatively small-scale companies). Calculation method: Emissions amount =  $\sum$  (Fuel consumption x Density x Sulfur content x 64/32)

\*Calculations are based on fuel consumption.

Density: Derived from the translation coefficient list in Statistics Information by Petroleum Association of Japan
Sulfur content: Derived from Act on the Quality Control of Gasoline and Other Fuels or the standard of LP gas

Amount of SOx emissions is recalculated by revising the calculation method in the past five years.

#### N0x emissions ✓



Companies covered: All consolidated subsidiaries and affiliated companies of the Honda Group (excluding relatively small-scale companies).

small-scale companies).

Calculation method: Emissions amount = ∑ (Fuel consumption x Emission factor for each fuel)

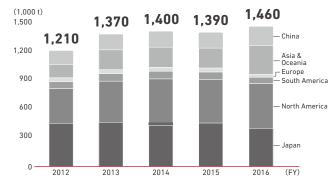
"Calculations are based on fuel consumption.

Emission factor for each fuel: Derived from NOx emissions calculation table (combustion facilities that do not measure the amount of exhaust gas, etc.) on Emirronmental

Amount of NOx emissions is recalculated by expanding the fuel coverage in the past five years.

#### Waste Generated

#### Waste Generated 🗸



Companies covered: All consolidated subsidiaries and affiliated companies of the Honda Group (excluding relatively small-scale companies). Calculation method: Emissions amount =  $\Sigma$  (Industrial waste + general administrative waste +valuable

However, regions outside of Japan are beyond the scope of data for general administrative waste except harmful waste (depending on regulations in respective countries). "Expressed in three significant digits"

Data indicated with  $\square$  received the independent practitioner's assurance.

