

# 2013 North American Environmental Report



BLUE SKIES FOR  
OUR CHILDREN

---

## Table of Contents

---

This report covers Honda’s activities in the United States, Canada, and Mexico — including company policies, the overall direction of Honda’s environmental initiatives, and a current assessment of the environmental impact of its operations — for the fiscal year that began April 1, 2012, and ended March 31, 2013 (FY13).

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

### To navigate this report

Click on the links at the right of each page to jump to sections within the report, or use the page forward/back arrows.

Click on any item in the table of contents above to go to that page.

Use the left and right arrow keys on your keyboard to move between pages.

In full-screen mode (accessible from the “View” tab on the Adobe toolbar), left-click to move to the next page, right-click to move to the previous page.

### Electronic format

To reduce the environmental impact of Honda’s reporting, this report is published in electronic format only. Please consider the environment before printing.

### We value your opinion

We are interested in your response to this report, which will help us improve future reporting. Please  to complete a brief survey.

### Data worksheet

to download a worksheet containing all of the key data from this report.



BLUE SKIES FOR  
OUR CHILDREN

“Blue Skies for Our Children” is the global environmental slogan adopted by Honda to express its commitment to the realization of its environmental vision through expanded environmental initiatives. Honda engineers, who took on the challenge to meet the stringent new emissions standards of the 1970s U.S. Clean Air Act, used the phrase “blue skies for our children” as a passionate rallying cry to devote themselves to this effort. This slogan continues to represent Honda’s passion toward its environmental commitment, which has not wavered and will remain resolute in the future.

## A Letter from the Chief Operating Officer of Honda North American Regional Operations



As we strive to realize our global environmental vision, Honda is working to strengthen its environmental management efforts in all six regional operations across the globe. In North America, this includes initiatives to better track and measure the environmental impacts of our products and business activities, particularly CO<sub>2</sub> emissions that contribute to global climate change, as a necessary step toward more effective management and reduction of those impacts.

As one example, in this report for the first time we are reporting on CO<sub>2</sub> emissions from the distribution of finished products in North America, where over the past three years we have realized a 17 percent reduction in the CO<sub>2</sub> emissions intensity of transporting products from our factories to dealers. Similarly, we are working to develop more effective means for tracking environmental impacts from the nearly 600 suppliers in North America that supply parts and materials to Honda factories in the region. This is a very complex, multi-year effort that is now in the early trial phase.

Our single largest opportunity to reduce Honda's environmental impact continues to be in the area of vehicle fuel efficiency and CO<sub>2</sub> emissions that occur during customer use. This past year we made significant progress with the introduction of new Earth Dreams Technology powertrains to the ninth generation of our best-selling Accord lineup. This includes a new direct-injected 4-cylinder engine, and a significantly re-engineered V-6 powertrain. Both powertrains deliver top-class fuel efficiency and outstanding driving performance, and both were chosen as among the 10 Best Engines of 2013 by a leading industry trade publication. Further, we made the decision to equip 4-cylinder Accord models for the first time with a continuously variable transmission (CVT) to boost fuel economy, while maintaining sporty performance.

Further, we are enhancing our lineup of hybrid vehicles. A new two-motor hybrid system was introduced in the 2014 Accord Plug-In Hybrid, our first plug-in hybrid vehicle, which we introduced

to markets in California and New York in early 2013 as the most fuel-efficient five-passenger sedan in America. This same two-motor powertrain architecture has been applied to the 2014 Accord Hybrid launching in fall 2013.

Increasingly, these advanced-technology vehicles and their powertrains are being produced locally in North America using locally and globally sourced parts. Over the past three years, we have invested nearly \$750 million in our Ohio engine and transmission factories for this purpose, and we continue to make additional investment to further localize advanced powertrain production. Further, our Marysville, Ohio auto plant will begin producing its first hybrid model, the 2014 Accord Hybrid, in late 2013. The Accord will be the third hybrid model we produce in North America, including the Civic Hybrid and Acura ILX Hybrid, both produced in Greensburg, Indiana.

In FY13, we also initiated two groundbreaking programs in the U.S. First the start of construction of the Honda Smart Home US on the campus of the University of California, Davis, that will demonstrate a vision for zero-carbon living and personal mobility. Second a partnership between Honda and SolarCity to accelerate the opportunity for Honda and Acura customers and dealers to adopt solar power. You can read more about both of these initiatives in a new section of this report called Environmental Business Innovation, which highlights the efforts by our recently established Environmental Business Development Office to explore new and sustainable business models for environmental products and technologies.

This report details these and the many other initiatives being undertaken by Honda associates throughout North America to minimize our environmental footprint and to make an important contribution to the achievement of Honda's global environmental vision.

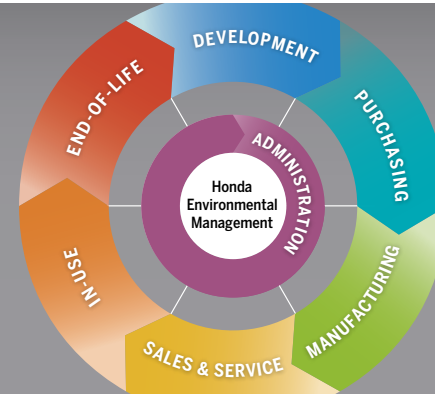
**Tetsuo Iwamura**

Chief Operating Officer, Honda North America, Inc.  
Chairman, North American Environmental Committee



## 2013 Executive Summary

Honda recognizes Life Cycle Assessment (LCA) as a critical tool for understanding the impact of its products and operations on the environment, and is working to minimize that impact in virtually every aspect of its business. This summary follows the LCA structure in reporting on the environmental impact of Honda products and business operations in North America.



**Product Development** — Improving the fuel efficiency of Honda products is the single most important part of our environmental effort. Honda’s “design for the environment” initiatives also extend to the creation of products that use fewer scarce, non-recyclable, or potentially harmful materials and that offer greater ease of dismantling for improved recyclability.

CATEGORY	PRODUCT	FY13 RESULTS
Recyclability	Autos	• Maintained a 90% level of design recyclability.
	Powersports and Power Equipment	• Maintained a 95% level of design recyclability.
Substances of Concerns (SOCs)	Autos	• Continued efforts to eliminate PVC from automobile interiors. • Continued phasing in the use of mercury-free display monitors.
Fuel-efficient Technology	Autos	• Introduced new, ninth-generation Accord as the first vehicle in North America to apply engines and transmissions from Honda’s new Earth Dreams Technology powertrain series, including more fuel-efficient 4- and 6-cylinder engines, a new sporty and efficient continuously variable transmission (CVT), and a new two-motor hybrid system.



**Purchasing** — Honda is working with more than 600 companies that supply parts and materials to Honda plants in North America to develop improved methods of tracking and reporting on emissions and other environmental impacts within its North American parts supply chain (“Green Purchasing”), as well as implementing measures to reduce the impact of shipping parts from suppliers to Honda factories in the region (“Green Logistics”).

CATEGORY	PRODUCT	FY13 RESULTS
“Green Purchasing”	All Products	• Honda worked to advance its Supplier Greenhouse Gas Initiative, launched in FY11, and in FY13 hosted numerous supplier roundtables and webinars to share best practices.
“Green Logistics”	All Products	• Continued efforts to reduce CO <sub>2</sub> emissions and other environmental impacts from the shipment of parts and materials: more than 6,789 metric tons CO <sub>2</sub> emissions were avoided in FY13.



## 2013 Executive Summary



**Manufacturing** — Honda operates 14 plants in North America, including seven that together produce more than 90% of the Honda and Acura automobiles sold in the region. Honda’s ongoing effort to reduce the environmental impact of its manufacturing operations is strongly focused on reducing CO<sub>2</sub> emissions through improved energy efficiency and reducing waste through expanded recycling activity. Other efforts include minimizing water use and emissions of potentially volatile compounds.

CATEGORY	PRODUCT	FY13 RESULTS
CO <sub>2</sub> Emissions	All Products	<ul style="list-style-type: none"> <li>CO<sub>2</sub> emissions intensity of production activity was reduced 16.2% for autos and 25% for powersports products, due in part to improved capacity utilization, while emissions per unit of power equipment production rose 1.1% versus the previous fiscal year.</li> </ul>
Waste	Autos	<ul style="list-style-type: none"> <li>Solid waste per automobile fell 17.2% from year-ago results to 153 kg/auto.</li> <li>Waste to landfill per automobile rose 75% from the previous year (FY12) due in large part to the short-term reclassification of certain waste materials; however, waste per auto was down 94.7% from the baseline year (FY01), to just 2.4 kg/auto, as the company maintained its commitment to send less than 1% of waste from manufacturing operations in North America to landfills.</li> </ul>
Water		<ul style="list-style-type: none"> <li>Water use per automobile produced fell 12.9% from the previous year to a five-year low of 740 gallons/auto.</li> <li>Industrial waste water discharged from N.A. plants for each unit of automobile production was reduced 7.4% from the previous year to 500 gallons/auto.</li> </ul>
VOC Emissions		<ul style="list-style-type: none"> <li>VOC emissions from auto body painting rose 0.7% from the previous fiscal year (FY12) to 14.5 g/m<sup>2</sup> but were down 50% from the baseline year (FY01) and remained well below the company’s targeted maximum of 20 g/m<sup>2</sup>.</li> </ul>



**Sales and Service** — Honda is working to reduce the environmental footprint of transporting both finished products and service parts from Honda factories and suppliers to Honda and Acura retail dealers, and to further promote environmentally responsible business practices within its dealer body.

CATEGORY	PRODUCT	FY13 RESULTS
CO <sub>2</sub> Emissions	All Products	<ul style="list-style-type: none"> <li>The CO<sub>2</sub> emissions intensity of transporting service parts to dealerships in the U.S. was reduced 13.5% from the previous fiscal year and is down 34% since FY09, when Honda began tracking this data, to 37.31 metric tons (MT) for every \$1 million of parts sales.</li> <li>Honda continued to pursue shifts to more efficient modes of transport, such as from trucks to trains, and to more fuel-efficient trucks. These efforts in FY13 helped avoid more than 5,445 metric tons of CO<sub>2</sub> associated with the shipment of service parts.</li> </ul>
Waste	Autos	<ul style="list-style-type: none"> <li>A pilot program, initiated in FY12, to eliminate landfill waste from the company’s nine parts warehousing and distribution centers in the U.S. was further expanded to include two California facilities, in Chino and Torrance, that are now operating with zero waste to landfill.</li> <li>Ongoing efforts to reduce, reuse, and recycle waste material resulted in 12,362 pounds of waste being diverted from landfills in FY13, comprising 95% of all waste material from parts warehouse operations.</li> </ul>
“Green Dealers”		<ul style="list-style-type: none"> <li>American Honda launched its first-ever “green dealer” award program with Honda and Acura automobile dealers in the U.S. in FY12 and has provided Environmental Leadership Awards to 19 dealers through the end of FY13.</li> </ul>



## 2013 Executive Summary



**In-Use** — Generally, the largest environmental impacts of Honda products come from the customer’s use of the products, primarily greenhouse gas and smog-forming exhaust emissions resulting from the combustion of fossil fuels. In the case of automobiles, roughly 86% of life-cycle CO<sub>2</sub> emissions occur during customer use.

CATEGORY	PRODUCT	FY13 RESULTS
CO <sub>2</sub> Emissions	Autos	<ul style="list-style-type: none"> <li>The CO<sub>2</sub>-adjusted fuel economy of the company’s MY12 U.S. vehicle fleet, at 26.4 mpg, was improved 9.5% versus MY11 results, and was 10.9% higher (better) than the U.S. auto industry average for MY12.</li> <li>The adjusted composite CO<sub>2</sub> emissions of the company’s MY12 U.S. automobile fleet, at 337 grams/mile, was reduced 8.6% versus MY11 results, and was 10.8% lower (better) than the U.S. auto industry average for MY12.</li> </ul>
	Powersports	<ul style="list-style-type: none"> <li>The fleet average fuel economy of Honda motorcycles sold in North America was down 17% from the previous model year (MY11) and has been improved 24% versus MY00 results.</li> </ul>
Criteria Air Pollutants	Autos	<ul style="list-style-type: none"> <li>Emissions of criteria air pollutants (non-methane organic gasses) from automobiles was reduced 30% from the previous model year (MY11) and 70% from the MY00 baseline.</li> </ul>
	Powersports	<ul style="list-style-type: none"> <li>In model year 2012, Honda substantially outperformed both U.S. EPA and CARB Tier 2 requirements for hydrocarbon (HC), nitrogen oxides (NO<sub>x</sub>), and carbon monoxide (CO) exhaust emissions, and also outperformed both EPA and CARB requirements for evaporative emissions and fuel permeation.</li> </ul>



**End of Life** — While Honda does not directly participate in the disposal of its products, the company is working to make its products easier to recycle, while also taking a direct role in reducing waste from the disposal of service parts.

CATEGORY	PRODUCT	FY13 RESULTS
Waste	E-waste, overstock, and remanufactured parts	<ul style="list-style-type: none"> <li>37.2 million pounds of e-waste, warranty parts, and overstock parts were diverted from landfills in FY13.</li> <li>Honda continued to increase its remanufactured parts offerings, adding 37 new part numbers in CY12.</li> </ul>



**Administration** — Honda’s effort to reduce the environmental impact of its administrative operations is focused on improving the energy efficiency of its facilities and reducing waste material through enhanced recycling efforts.

CATEGORY	PRODUCT	FY13 RESULTS
“Green Building”	North American Facilities	<ul style="list-style-type: none"> <li>A one megawatt stationary fuel cell system installed on the Torrance, California campus of American Honda is anticipated to cut annual CO<sub>2</sub> emissions by an estimated 1,300 metric tons.</li> <li>Continued efforts to consolidate, eliminate, and upgrade computing equipment resulted in a reduction in power utilization of 616,417 kWh at the company’s Ohio and California data centers, and a 23.1 metric ton reduction in CO<sub>2</sub> emissions.</li> </ul>

---

**Honda Environmental Vision**

---

Honda adopted a new Environmental Vision in 2011. The company will continue to work under that vision to minimize CO<sub>2</sub> emissions and other environmental impacts, and reduce the use of fossil fuels and resources. Honda's overall goal is to develop products with the lowest in-use CO<sub>2</sub> emissions manufactured at plants with the lowest CO<sub>2</sub> emissions intensity (emissions per unit of production).

**Realizing “the Joy and Freedom of Mobility”  
and “a Sustainable Society where People Can Enjoy Life”**

In 2010, Honda announced within and beyond its organization that the company's direction in the period leading to the year 2020 would be “to provide good products to our customers with speed, affordability, and low CO<sub>2</sub> emissions.”

“With low CO<sub>2</sub> emissions” represents our conviction based on the strong sense of urgency that, as a manufacturer of personal mobility, Honda will have no future unless we achieve a significant reduction of CO<sub>2</sub> emissions.

By “good products” we mean to embody customers' wants and needs in attractive products using Honda's unique technologies, knowledge, and ingenuity. Such good products must be delivered with speed without making our customers wait, and at affordable prices that make our customers happy with their purchase. This is the direction Honda will take.

This focus is encapsulated in the Honda Environmental Vision of a future in which environmental initiatives will allow people to realize “the joy and freedom of mobility” and “a sustainable society where people can enjoy life.” In this vision, Honda has expressed its strong determination to contribute to a society based on sustainability and harmony so that it can continue to offer excitement to its customers through products and services used for personal mobility and in people's everyday lives.

Honda is determined to turn this vision into reality by actively implementing environmental initiatives on a global level. Particular emphasis will be placed on the following aspects:

**At each stage of its products' life cycles and its corporate activities, Honda aims to:**

- Minimize the use of fossil fuel and resources newly recovered from the Earth
- Minimize the environmental impacts, including greenhouse gas emissions

**Honda aims to reduce greenhouse gas emissions from its mobility products and in people's everyday lives.**

---

## Environmental Management

---

Honda has been developing technologies and implementing measures to help overcome environmental challenges since the 1960s. In 1992, the company

issued the Honda Environmental Statement to clearly define its approach to environmental issues, which is central to everything we do.

---

### Honda Environmental Statement

“As a responsible member of society whose task lies in the preservation of the global environment, the company will make every effort 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 promote a successful future not only for our company, but for the entire world.”

---

We should pursue our daily business interests under the following principles:

**1** We will strive to recycle materials and conserve resources and energy at every stage of our products' life cycle — from research, design, production, and sales, to service and disposal.

**2** We will strive 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 associate 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 society, and endeavor to improve the social standing of the company.



## Environmental Management

Honda has developed an institutional framework to put into practice the principles of environmental conservation as defined in the Honda Environmental Statement.

Honda's regional operations, including the North America region, are given broad authority to fulfill their operational business responsibilities, which include planning and acting in accordance with Honda's environmental vision to minimize the environmental impact of their local business activities.

A hallmark of Honda environmental initiatives is that planning and execution are not delegated to specialists; rather, they are taken up directly by associates in all departments, who are engaged with environmental issues as part of their duties.

### World Environmental Committee

The World Environmental Committee, established in March 1995, determines annual plans for implementing conservation activities on a global level based on the company's medium-term business plans determined by the Executive Council. The company's president and CEO currently chairs the committee.



### North American Environmental Committee

Regional environmental committees, including the North American Environmental Committee, discuss and evaluate annual achievements under the plan and then, based on the results, create new targets and plans.

PRODUCTS	LOGISTICS	MANUFACTURING	OFFICE AREA	CORPORATE COMMUNICATION
Automobiles Powersports Power Equipment	Product and service parts packaging and distribution	Production Purchasing OEM Parts logistics	"Green Building" Recycling Energy efficiency	Environmental reporting

## Key Practices

### Environmental Risk Management

Honda considers risk management to be an integral part of environmental management. Honda's approach to risk management is reflected in various activities:

- systems for preventing spills and unplanned releases;
- systems for reducing environmental releases; and
- systems for recycling products, components, and manufacturing byproducts, in order to minimize landfill waste.

From long-term planning to daily operations, Honda strives to understand the risks of environmental impact and to make prudent decisions to minimize impacts wherever possible. Honda North America, Inc., a subsidiary of Honda Motor Co., Ltd., serves as auditor, helping to ensure that Honda's various subsidiary companies and its affiliated suppliers in the North America region are in compliance with all applicable environmental laws and regulations. It also provides support to those companies in determining and implementing best practices for Honda's environmental management activities in the region.

### Environmental Laws and Regulations

Regulatory compliance is fundamental to the production and in-use performance of Honda products, and to the continuance of Honda's operations in North America. All Honda companies have systems in place to ensure that their activities comply with all applicable legal requirements.

### Emissions-Related Product Recalls

Honda's policy on product recalls, including emissions-related recalls, is in accordance with the procedures of its Quality Committee, which is composed of senior executives from various divisions of Honda. The Quality Committee makes decisions about Honda products manufactured and sold throughout the world, relying upon recommendations from Honda experts in each region.

### North American Environmental-Related Fines

During the fiscal year ended March 31, 2013, Honda paid a fine of \$580,000 to the U.S. government for issues related to the import and the emissions performance of certain small, non-road engines sold in the 2003-2008 time frame.

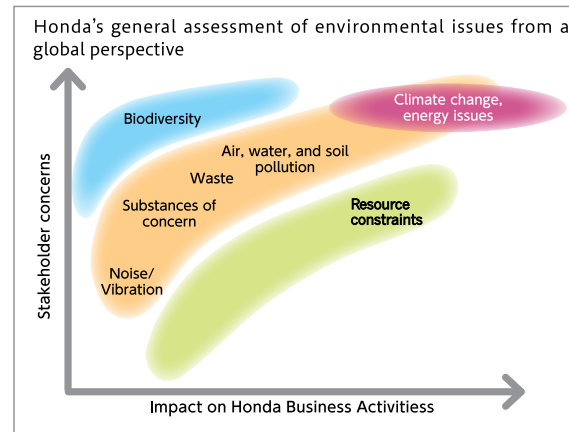
## Corrective Actions in FY13

During the fiscal year ended March 31, 2013, Honda initiated three Voluntary Emission Recalls (VERs).

DATE	MODEL(S)	UNITS	DETAILS
3/29/13	2012 BF2.3 Marine Engine	1,273 — U.S. 1,284 — Canada	<b>U.S. VER, Canada Product Safety Recall:</b> When the fuel tank vent knob on the fuel cap is rotated to the OFF (vent closed) position, the internal rubber seal of the fuel tank air vent may deform or become misaligned leaving the air vent open to the atmosphere. This may result in a fuel leak from the fuel tank air vent when the outboard engine is tilted or placed horizontally in the storage position recommended by Honda.
10/18/12	2011-12 EU2000i Generator	150,619 — U.S.	<b>U.S. VER:</b> The tang of the fuel hose clamp can touch the adjacent fuel hose, and engine vibration can cause the clamps tang to cut into the adjacent fuel hose, resulting in a fuel leak. When assembling the front panel at the factory, the fuel hose clamp tang can be pushed in a direction that causes the clamps tang to touch the adjacent fuel hose. <b>(No affected Canadian units)</b>
7/3/12	2011-12 GX(V)630/660/690 Power Equipment Engine	6,625 — U.S. 180 — Canada	<b>U.S. and Canada VER:</b> Affected units may have an ignition coil fail, causing the engine to run on one cylinder. The engine appears to be running OK until a heavy load is applied, and then it may quit running.

## Honda Assessment of Environmental Issues from a Global Perspective

To realize the Honda Environmental Vision, the company is addressing environmental issues in a comprehensive manner through management policies implemented in each region of the globe. Environmental issues have been organized according to importance, and those that pose the greatest risk to the company's business and stakeholders have been identified (see figure at right). As a global corporation supplying mobility products, Honda sees climate change and energy use, major issues on a global scale, as the greatest challenges facing society. Honda has set forth its own reduction targets for emissions of CO<sub>2</sub> — by far the most significant of all greenhouse gases (GHGs) — and is stepping up efforts to meet these targets in every region and domain.

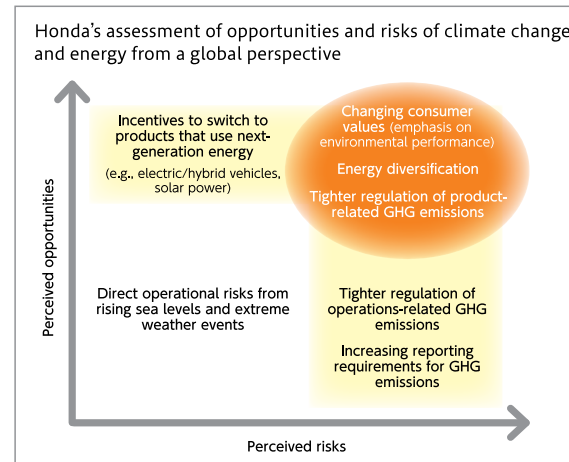


## Global Assessment of Opportunities and Risks of Climate Change

Honda has compiled all of the major opportunities and risks the company currently expects to see from climate change and energy issues (see figure at right) and has been taking the following measures in response:

- To minimize the regulatory risk Honda products face as emitters of GHGs, the company has set — and subsequently achieved — fiscal 2011 CO<sub>2</sub> emissions reduction targets for over 90% of our motorcycle, automobile, and power products.
- Looking forward to 2020, Honda has set new targets to reduce product CO<sub>2</sub> emissions and is actively taking other measures to reduce emissions.

Honda clarified its understanding of risks and opportunities such as these from the perspective of product categories (powersports, automobiles, and power equipment), with a focus on its business and production development operations, and by region, which is based on a unique regional management structure. Honda's World Environmental Committee assesses these risks and opportunities from a global perspective, the findings of which are used by regional operations (regional environmental committees), business operations, and functional operations in the formulation of management policies and strategies.



## Addressing Global Climate Change and Energy Use

### 2020 Product CO<sub>2</sub> Emissions Reduction Targets


Reducing CO<sub>2</sub> emissions from our products is a necessary step in combating climate change and energy use issues, which is why Honda established voluntary targets for the reduction of CO<sub>2</sub> emissions from

its products by 2020. The company is aiming for a 30% reduction in fleet average emissions of its automobiles, motorcycles, and power equipment products, compared with 2000 levels.

**2020 Product CO<sub>2</sub> Emissions Reduction Targets**


Global average CO<sub>2</sub> emitted by Honda products

30% reduction




**Automobiles**  
30% reduction (g/km CO<sub>2</sub>) from 2000 levels by 2020

30% reduction



**Powersports**  
30% reduction (g/km CO<sub>2</sub>) from 2000 levels by 2020

30% reduction

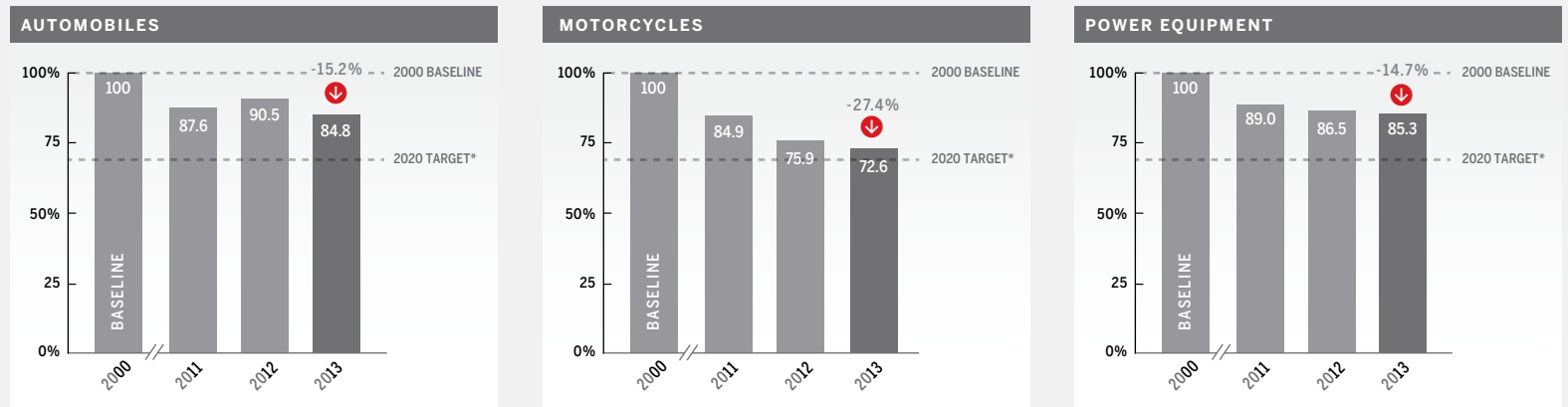


**Power Equipment**  
30% reduction (kg/hr CO<sub>2</sub>) from 2000 levels by 2020

**Regions covered:** Automobiles: Japan, North America, Europe, Asia and Oceania, China, Latin America (more than 90% of global sales)  
Motorcycles: Japan, North America, Europe, Thailand, India, China, Indonesia, Vietnam, Brazil, Philippines, Malaysia, Pakistan (more than 90% of global sales)  
Power Equipment: All products sold in all regions

### Progress Toward Global 2020 CO<sub>2</sub> Emissions Reduction Targets

Automobile fuel efficiency increased with the introduction of redesigned core models such as the CR-V and Accord. Motorcycle CO<sub>2</sub> emissions saw another year-on-year decline, driven by increased sales from the introduction in Thailand of the Click 125i, a commuter vehicle with improved fuel efficiency, and increased sales of the fuel-efficient PCX150 in Thailand, BeAT in Indonesia, and Activa in India. Sales of large engines, which have comparatively higher per-unit emissions, increased in North America. Meanwhile in Europe, sales of low-emission household cogeneration units and zero-emission robotic lawn mowers increased, contributing to a slight year-over-year decline in CO<sub>2</sub> emissions for power products as a whole.



\* 30% reduction from 2000 levels

## Honda's Approach to Climate Change Policy

Honda recognizes climate change as a serious environmental concern with significant consequences for all of society. Honda's "portfolio approach" pursues multiple technology pathways to address the multifaceted set of environmental challenges and opportunities associated with the vehicles we drive. Solving an environmental challenge as complex as global climate change requires the concerted

efforts of industry, government, and consumers. First and foremost, we recognize that a successful GHG reduction program ultimately requires consumer acceptance of the vehicles and/or alternative fuels developed to reduce GHG emissions. Using this philosophy as a foundation, Honda takes the following positions on current climate change-related policy issues:

### Honda's Approach to Climate Change Policy in North America

PUBLIC POLICY INITIATIVES	HONDA'S POSITION
<p><b>Federal Fuel Economy (CAFE) and Vehicle Greenhouse Gas (GHG) Emissions Standards</b></p>	<p>Honda was among the earliest supporters of, and was a signatory to, the White House initiatives for harmonized national fuel economy and GHG emissions standards for model year 2012-2016 and 2017-2025 vehicles. In today's marketplace, a nationwide set of technology-neutral, performance-based standards, such as the CAFE and GHG standards, help drive innovative ideas to reduce fuel consumption and carbon emissions.</p>
<p><b>Incentives</b></p>	<p>Incentives implemented by government entities can be constructive in stimulating nascent and expensive technologies, such as those used in fuel cell-electric vehicles, natural gas vehicles, battery-electric vehicles, and plug-in hybrid electric vehicles — all of which Honda currently offers to consumers. Incentives should be technology neutral, performance based, and limited in duration. Both financial incentives, such as consumer tax credits, and non-financial incentives, such as HOV lane access for advanced technology vehicles, can help stimulate demand and enlarge the market for those types of automobiles. At the same time, the non-financial HOV incentive should be balanced with the overall purpose of the carpool lanes, which is traffic congestion mitigation and air quality improvement. The conversion of existing HOV lanes to HOT lanes, or the construction of new HOT lanes, should maintain the same incentives at no cost for advanced technology vehicles as are in place for HOV lanes in a state.</p>
<p><b>Biofuels</b> Renewable Fuels Ethanol and Flex Fuel Vehicles</p>	<p>Renewable fuels offer promising opportunities to displace petroleum and have the potential to reduce GHG emissions. However, some renewable fuels are more effective at achieving this objective and more sustainable and economically viable than others. Compatibility with existing and future products, a viable distribution network, and a refueling infrastructure are all critical considerations. EPA's approval of a waiver allowing the sale of E15 was premature and does not meet these criteria. Specifically, given that higher ethanol blends are not inherently compatible with legacy products, government must assure that legacy fuels remain in the marketplace, and provide for effective safeguards to prevent misfueling by consumers. Ethanol does offer the promise of higher octane levels which, along with the octane added at the refinery, is important to meet the fueling needs of advanced internal combustion engines. Drop-in fuels, fuels that can be used without major changes to the fueling infrastructure, such as bio-butanol, are promising alternatives to ethanol, as they would obviate many of the problems that manufacturers, distributors, providers, and consumers currently face with mid-level ethanol blends.</p>

## Honda's Approach to Climate Change Policy cont'd

PUBLIC POLICY INITIATIVES	HONDA'S POSITION
<b>Registries</b>	Any regulatory approach that is calibrated to baseline emissions requires registries that accurately reflect the current situation. Registries should be nationwide to ensure consistent and reliable reporting. Honda supports the U.S. EPA mandatory greenhouse gas reporting rule.
<b>Cap-and-Trade</b>	Cap-and-trade is one potential means of regulating GHG emissions from stationary sources; however, cap-and-trade can penalize companies that are growing market share while providing an unearned windfall to companies that are losing market share. For light and heavy duty vehicles, sectoral policies already address GHG emissions, deeming cap-and-trade unnecessary.
<b>California Air Resources Board (CARB) Zero Emission Vehicle (ZEV) Mandate</b>	The ZEV mandate requires automakers to sell zero-emission technology vehicles in California and 10 other states that have adopted the standards. Because level of customer acceptance of these new technology vehicles is still unclear, the ZEV mandate should be structured to provide greater flexibility to promote the full array of advanced, zero-emission technology options. Honda believes it is fundamentally too early to rely on any single technology toward long-term goals of reducing GHG emissions and petroleum consumption. In order to succeed, policies mandating adoption of these technologies must be complemented by state policies aimed at building out new fueling infrastructure, reducing other market barriers, and encouraging technology adoption by consumers.

## Risks and Opportunities of Climate Change and Energy Use

Based on Honda's global assessment of environmental risks, our North American management team is constantly surveying future environmental, economic, and social trends in the North American region in an effort to anticipate the effect of these trends on our business. Virtually every future risk carries with it an opportunity,

and anticipating and responding quickly to these risks and opportunities gives Honda the greatest degree of flexibility and ensures the sustainability of its business.

We are focusing here on three key risk areas: Air Quality, Climate Change, and Energy Security.

KEY AREAS OF RISK MANAGEMENT	RISKS AND OPPORTUNITIES
<p><b>Air Quality</b></p> <p>There are three primary elements to air quality impacts that Honda monitors: pre-cursors to smog (localized health effects), particulate matter (localized health effects and contributor to climate change), and carbon monoxide (local health effects only). Virtually every combustion engine product Honda makes<sup>1</sup> is regulated with respect to one or more of these impacts.</p>	<ul style="list-style-type: none"><li>• Generally speaking, Honda has aggressively met or exceeded emissions standards, frequently prior to regulatory requirements, in the region and has worked cooperatively with regulatory agencies to continuously reduce harmful emissions.</li><li>• While dramatic improvements have been made over the last thirty years, and new priorities (such as climate change) have emerged, air quality goals are continually improving.</li><li>• Honda does not anticipate that future emissions standards through 2025 pose significant threats to its business, nor do they represent a significant competitive advantage for Honda.</li></ul>
<p><b>Climate Change and Energy Security</b></p> <p>The growing demand from society for cleaner, more fuel-efficient products and alternative sources of energy, along with stringent new fuel-economy and greenhouse gas emissions requirements in the U.S. and Canada, pose a significant challenge to the auto industry to accelerate the development and deployment of new technologies while meeting customers' expectations for vehicle performance, utility, safety, and affordability.</p>	<ul style="list-style-type: none"><li>• Honda is focused on the issues of climate change (greenhouse gas emissions) and energy scarcity in all of its business activities, in particular in the development of more fuel-efficient and alternative fuel products.</li><li>• Honda took an active role in helping develop new U.S. fuel economy and greenhouse gas regulations for the period 2012-2025. While these new regulations pose a substantial challenge with respect to the introduction and marketing of new and potentially costly technologies, we embrace the challenge of meeting these new standards through the leveraging of our capabilities in the areas of fuel-efficient propulsion systems, reduced running resistance (aerodynamics, low-friction engines, and light weighting), and alternative-energy technology.</li></ul>

<sup>1</sup> Except for engines used in competition, and PE/Marine engines are not regulated in Mexico.

## Improving Fuel Efficiency and Reducing Greenhouse Gas Emissions

Honda is pursuing a “portfolio approach” to addressing both greenhouse gas emissions and energy issues, a strategy that encompasses multiple technology pathways and seeks to comprehensively address the challenges associated with the deployment of new energy and vehicle technologies. The chart that follows seeks to provide Honda’s perspective in the North American market with respect to this portfolio approach, and to present a clear, concise, and contemporary rating system for various technologies with respect to their potential benefits to society and the unique challenges to the marketability of each technology.

The evaluation of air quality and GHG emissions uses a well-to-wheels approach. In terms of environmental impact, tailpipe emissions represent only a portion of a vehicle’s in-use carbon emissions. Additional emissions results from the extraction, refining, and

transporting of fuel. A well-to-wheels assessment accounts for these emissions. It is also critical for comparing vehicle technologies that run on different fuels, such as electrically-powered vehicles that draw a large portion of their power from stationary sources.



Many of these judgments are difficult, and may shift over time as information becomes clearer, technologies evolve, or circumstances change. For now, these color-coded references serve as a quick comparison between the current promise of these technologies and strategies for the North American market.

	Social Values			Marketability				Honda’s effort
	AIR QUALITY	GHG REDUCTION	ENERGY SECURITY	INFRA-STRUCTURE	COST	FULL FUNCTION	APPEAL	
<b>Improved Gasoline Internal Combustion Engine (ICE)</b>	<b>VERY GOOD</b>	<b>FAIR</b>	<b>FAIR</b>	<b>VERY GOOD</b>	<b>VERY GOOD</b>	<b>VERY GOOD</b>	<b>VERY GOOD</b>	<p>Honda’s ICEs are already more advanced than the average ICE in the industry, including 100% application of variable valve timing, wide application of low friction engine technologies, the increasing application of variable cylinder management, etc.</p> <p>Honda recently unveiled an acclaimed line-up of efficient engines and transmissions under the banner of ‘Earth Dreams Technology.’ These powertrain technologies are part of Honda’s voluntary commitment to a 30% reduction in CO<sub>2</sub> emissions from its automobile, motorcycle, and power equipment products by 2020, as compared to a 2000 baseline level.</p>
	<p>There remain significant opportunities to further improve the fuel efficiency of the gasoline internal combustion engine (ICE).</p> <p>Fuel efficiency improvements directly correlate with both GHG and petroleum reductions.</p> <p>Improved ICE presents the greatest short- to mid-term overall benefit to social values because of its existing high volumes and broad marketability.</p>			<p>The incremental costs of improving ICEs should be paid back by fuel savings over several years even under current, moderate fuel-prices.</p> <p>Improved Gasoline ICEs are proven to be appealing and well accepted by consumers.</p>				



## Improving Fuel Efficiency and Reducing Greenhouse Gas Emissions

	Social Values			Marketability				Honda's effort
	AIR QUALITY	GHG REDUCTION	ENERGY SECURITY	INFRA-STRUCTURE	COST	FULL FUNCTION	APPEAL	
<b>Natural Gas Vehicles</b>	<b>VERY GOOD</b>	<b>FAIR</b>	<b>VERY GOOD</b>	<b>CHALLENGING</b>	<b>FAIR</b>	<b>GOOD</b>	<b>GOOD</b>	<p>Honda began selling natural gas vehicles in 1998 to U.S. fleet customers, extending sales to retail customers in 2001. The company has steadily expanded its market footprint in the U.S. — and is marketing the fourth-generation Civic Natural Gas (launched in October 2011) to fleet and retail customers through 200 Honda dealers in 37 U.S. states.</p>
	<p>Natural gas is an abundant, inexpensive, and domestic fuel.</p> <p>The latest research indicates that ICEs optimized for natural gas can produce zero particulate emissions (Air Quality) and 25% fewer CO<sub>2</sub> emissions (GHG Reduction) than a gasoline-powered vehicle.</p> <p>Since natural gas is a domestic alternative to petroleum, it is excellent for energy security.</p> <p>Uncertainty remains about the quantity of methane leakage that occurs during natural gas extraction. Continued attention should be paid to the methods of extracting natural gas to ensure there are no substantial negative environmental or public health impacts.</p>			<p>Public refueling stations remain the single biggest obstacle to the widespread adoption of natural gas vehicles.</p> <p>The cost premium for natural gas vehicles is roughly the same as that of a hybrid automobile, with the potential for further reductions. This cost premium can be offset by the lower fuel cost.</p> <p>Vehicle utility, such as cargo space, can be impacted by the space required for fuel storage.</p> <p>Natural Gas vehicles offer performance, safety, and comfort on par with their gasoline counterparts.</p>				
<b>Diesel</b>	<b>GOOD</b>	<b>FAIR</b>	<b>GOOD</b>	<b>GOOD</b>	<b>FAIR</b>	<b>VERY GOOD</b>	<b>GOOD</b>	<p>Honda's new 1.6-liter i-DTEC™ diesel engine applies "Earth Dreams" technology to the diesel market.</p> <p>Optimized thermal management system resulting from cooling system improvements reduces CO<sub>2</sub> output by over 15% compared to Honda products.</p> <p>By downsizing from the present 2.2-liter diesel engine and extensively reducing mechanical friction in each section, the 1.6-liter achieves a friction level equivalent to present gasoline engine models.</p> <p>Honda actively markets 2.2-liter i-DTEC™ diesel engine technology in Europe, where diesel fuel is priced significantly lower than gasoline.</p>
	<p>Modern diesel engines can meet stringent emissions standards.</p> <p>Diesel contains 13% more carbon than gasoline, therefore the CO<sub>2</sub> emissions reduction potential is less than the efficiency improvement, resulting in a score of "fair" for GHG reduction.</p> <p>Diesel engines offer up to 30% fuel-efficiency gains over current ICE technology, which is good for energy security.</p>			<p>Diesel engines typically cost significantly more than their gasoline version. In some markets diesel fuel is much cheaper than gasoline, so the fuel savings can offset that cost. In North America, diesel fuel is more expensive than gasoline, and this is expected to continue into the future. Therefore, the added cost of the engines, together with the higher priced fuel, results in an overall higher cost.</p> <p>The reputation of diesel technology has improved in recent years with improvements in performance, emissions, and noise.</p>				

## Improving Fuel Efficiency and Reducing Greenhouse Gas Emissions

	Social Values			Marketability				Honda's effort
	AIR QUALITY	GHG REDUCTION	ENERGY SECURITY	INFRA-STRUCTURE	COST	FULL FUNCTION	APPEAL	
<b>Biofuels</b>	VERY GOOD	CHALLENGING-VERY GOOD	GOOD	CHALLENGING-VERY GOOD	GOOD-VERY GOOD	VERY GOOD	FAIR	<p>All Honda and Acura automobiles, as well as the company's motorcycle and power equipment products, are capable of operating using E10 (10% ethanol in gasoline).</p> <p>Beginning in model year 2014, most Honda and Acura cars and trucks will be capable of operating on mid-level ethanol blends up to E15.</p> <p>Honda is presently collaborating with the National Renewable Energy Laboratory (NREL) and Green Earth Institute (GEI) to commercialize the RITE strain.</p>
	<p>Depending upon their sources and their processes, the greenhouse gas emissions from biofuels vary significantly.</p> <p>Biofuels offer significant opportunities to reduce petroleum use, although the scalability and volume potential of biofuels is unclear, hence the "good" rating.</p> <p>The greatest challenge is achieving sustainable biofuel processes that minimize impacts on land, water, and food.</p> <p>There is concern about the volume of sustainable biofuels. From a policy perspective, prudence may suggest they be reserved for other forms of transportation that lack alternative options (such as air travel).</p>			<p>Infrastructure varies significantly: ethanol requires new infrastructure for the transportation of the fuel; however, some biofuels are "drop-in" fuels like bio-butanol or bio-diesel. Drop-in fuels have the potential to fit directly into existing infrastructure.</p> <p>Biofuels containing Ethanol are less appealing to consumers since they must refuel more frequently due to less energy per gallon of fuel.</p>				
<b>Hybrid Electric Vehicles</b>	VERY GOOD	GOOD	GOOD	VERY GOOD	FAIR	VERY GOOD	VERY GOOD	<p>Honda pioneered hybrids in the U.S. and Canada with the launch of the Insight hybrid vehicle in 1999. The company has steadily advanced its Integrated Motor Assist™ (IMA™) hybrid system to increase its efficiency and performance.</p> <p>Honda markets four distinct hybrid models in North America — the Insight, the CR-Z Sport Hybrid, the Civic Hybrid, and the Acura ILX Hybrid. A new-generation Civic Hybrid was introduced in 2011, delivering an EPA-rated 44mpg, the highest of any sedan in the U.S. at the time. In 2013 Honda launched a hybrid version of the Accord using a new two-motor hybrid system from the Earth Dreams Technology powertrain lineup.</p>
	<p>Hybridization can significantly increase fuel efficiency by using energy captured during deceleration and braking for motive power.</p> <p>These significant improvements in efficiency directly result in significant GHG reductions and corresponding reductions in gasoline consumption (Energy Security).</p>			<p>The cost premium versus gasoline-only vehicles remains the most significant barrier to broader market appeal.</p> <p>Hybrid automobiles are increasingly viewed as mainstream technology with a high level of appeal and with performance, safety, and utility nearly on par with conventional ICEs.</p>				

## Improving Fuel Efficiency and Reducing Greenhouse Gas Emissions

	Social Values			Marketability				Honda's effort
	AIR QUALITY	GHG REDUCTION	ENERGY SECURITY	INFRA-STRUCTURE	COST	FULL FUNCTION	APPEAL	
<b>Plug-In Hybrid Electric Vehicles</b>	<b>VERY GOOD</b>	<b>VERY GOOD</b>	<b>VERY GOOD</b>	<b>FAIR</b>	<b>CHALLENGING</b>	<b>VERY GOOD</b>	<b>VERY GOOD</b>	<p>Honda's Accord Plug-in is currently on sale in New York and California. This model uses a new dual-motor hybrid system to help achieve its status as the most fuel efficient sedan in America (achieving 115 MPGe in all-electric mode). In addition to being Honda's first plug-in hybrid electric vehicle, the Accord Plug-In is the first production car in the U.S. to meet the new, more stringent LEV3/SULEV20 emissions standard.</p>
	<p>PHEVs use both gasoline and electricity. Both the on-board (gasoline) and remote (electricity) GHG emissions must be accounted for in the overall evaluation of PHEVs. Cleaning up the emissions from powerplants is a continuing challenge. Increasing the generation of electricity from renewable energy sources and reducing reliance on CO<sub>2</sub>-intensive sources such as coal are examples of grid mix shifts that can make PHEVs more environmentally attractive.</p> <p>Using electricity generated off-board in place of gasoline results in reduced consumption of petroleum, enhancing energy security.</p>			<p>Although most PHEVs can utilize conventional 120V AC electricity, a dedicated circuit is needed, in order to assure uninterrupted recharging. Additionally, not all consumers have consistent access to off-street parking with electricity in close proximity.</p> <p>Cost remains a significant barrier to broader marketability. The incremental fuel savings between HEVs and PHEVs is not sufficient to offset the incremental PHEV costs, based on current battery costs.</p> <p>Plug-in hybrids offer similar utility and performance to conventional hybrids.</p>				
<b>Battery Electric Vehicles</b>	<b>VERY GOOD</b>	<b>VERY GOOD</b>	<b>VERY GOOD</b>	<b>CHALLENGING</b>	<b>CHALLENGING</b>	<b>CHALLENGING</b>	<b>VERY GOOD</b>	<p>Honda was the first to market an advanced battery electric vehicle in the U.S., the Honda EV Plus, between 1997 and 2003. EV plus used advanced NiMH batteries.</p> <p>Honda began leasing the Fit EV, with a 118MPGe EPA highway fuel economy rating, to consumers in California, and in early 2013 expanded its marketing to select East Coast markets in Massachusetts, Connecticut, Maryland, New York, and New Jersey.</p> <p>The Fit EV has an EPA estimated combined city/highway driving range of 82 miles (adjusted label value) from its 20 kWh battery pack, capable of a full recharge at home in as little as three hours.</p>
	<p>BEVs used primarily grid electricity for motive power, supplemented by energy from regenerative braking. The stationary source (powerplant) GHG emissions must be accounted for in the overall evaluation of BEVs.</p> <p>Cleaning up the emissions from powerplants is a continuing challenge. Increasing the generation of electricity from renewable energy sources and reducing reliance on CO<sub>2</sub>-intensive sources such as coal are examples of grid mix shifts that can make BEVs more environmentally attractive.</p> <p>BEVs substitute energy from the electric grid for petroleum consumption, enhancing energy security.</p>			<p>BEVs require access to consistent, off-street parking and the installation of specialized charging equipment and 240V AC circuitry.</p> <p>Although electricity costs are significantly lower than gasoline costs on a per-mile basis, the higher, initial costs of advanced batteries remain a challenging obstacle to widespread consumer adoption.</p> <p>With respect to "full functionality," BEVs have limited range and re-charge time, and range can vary substantially based upon environmental conditions (temperature, humidity, etc.).</p> <p>BEVs can excel in the attributes of safety, quiet, and responsive driving, which are appealing to consumers.</p>				

## Improving Fuel Efficiency and Reducing Greenhouse Gas Emissions

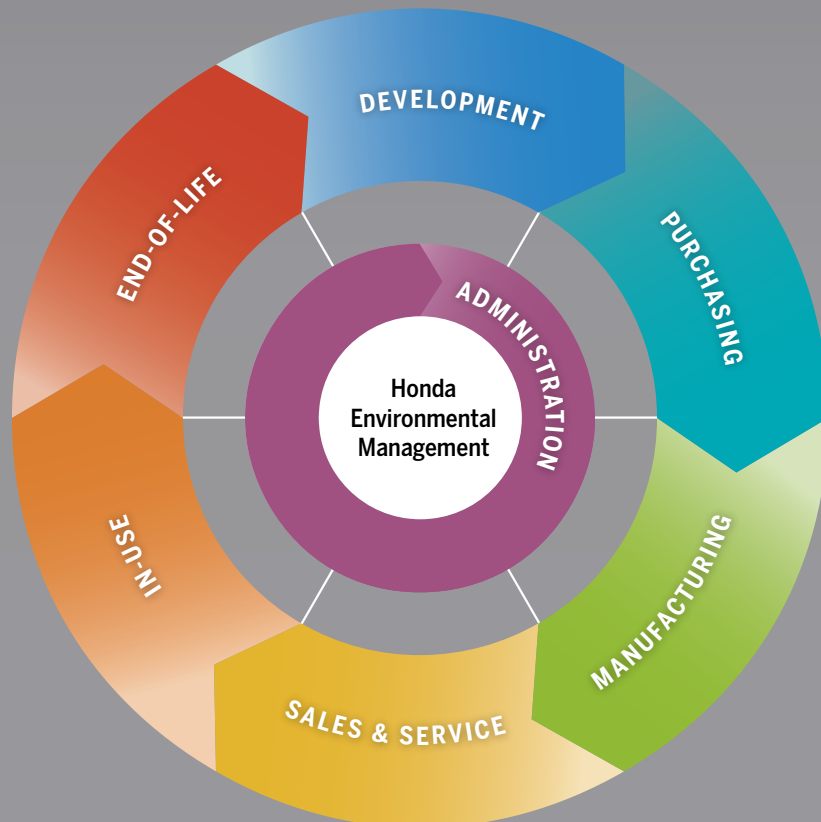
	Social Values			Marketability				Honda's effort
	AIR QUALITY	GHG REDUCTION	ENERGY SECURITY	INFRA-STRUCTURE	COST	FULL FUNCTION	APPEAL	
	VERY GOOD	VERY GOOD	VERY GOOD	CHALLENGING	CHALLENGING	VERY GOOD	VERY GOOD	
<b>Fuel Cell Electric Vehicles</b>	<p>On a well-to-wheels basis, most hydrogen pathways are extremely clean and hydrogen is identified by the California Air Resources Board as one of its ultra low carbon fuel pathways.</p> <p>Hydrogen can be sourced in many different ways, including from electrolysis and from reformed natural gas. Either of these two methods replaces petroleum.</p>			<p>The cost of fuel cell technology and the very limited refueling infrastructure remain significant barriers.</p> <p>Fuel cell vehicles deliver performance, utility, comfort, and driving range virtually on par with conventional gasoline-powered automobiles.</p>				<p>Honda's FCX Clarity packages Honda fuel cell technology in a full utility four-passenger sedan.</p> <p>Honda has had programs for consumer evaluation of the FCX and FCX Clarity, in operation since 2005.</p> <p>Honda is working to advance not only FCEV powertrain technology but also systems for hydrogen production and distribution, such as an experimental solar-powered hydrogen refueling station in operation at its U.S. R&amp;D headquarters in Torrance, California.</p> <p>Honda plans to launch a next-generation FCEV in 2015. In July 2013 Honda and General Motors announced an agreement to co-develop next-generation fuel cell system and hydrogen storage technologies, aiming for the 2020 time frame.</p>

## Improving Fuel Efficiency and Reducing Greenhouse Gas Emissions

Technologies that apply to all vehicles, regardless of fuel or type of powertrain			
	Social Values	Marketability	Honda's effort
<b>Reducing Running Resistance</b>	Improved aerodynamic design, reduced tire rolling resistance, and lower vehicle mass can improve the fuel efficiency of any type of vehicles regardless of powertrain or energy source.	Efforts to reduce running resistance must be taken into account with other factors, including vehicle cost, performance, safety, and utility, in order to meet the expectations of customers while simultaneously advancing the social benefits of new products.	Honda is continually researching new means of reducing vehicle running resistance while delivering on the performance, utility, and safety requirements its customers' demand.
	This has a positive effect on both GHG reduction and petroleum consumption.		<p>All new Honda and Acura vehicles introduced over the past several years have used increasing amounts of high-strength steel, which typically accounts for half or more of a new Honda or Acura vehicle's body structure, among the highest levels in the industry.</p> <p>The company is continually exploring methods of reducing weight, including new materials and methods of body design, to allow for further reductions in weight while maintaining high levels of safety and customer value.</p> <p>Honda R&amp;D Americas recently commissioned a new wind tunnel facility in Ohio that is designed to help engineers realize further improvements in aerodynamic efficiency at early stages of new vehicle development.</p>

# Life Cycle Assessment

Honda recognizes Life Cycle Assessment (LCA) as a critical tool for understanding the impact of its products and operations on the environment, and is working to minimize that impact in virtually every aspect of its business.



## Development

In-use and end-of-life impact of Honda products on the environment as a result of product design, including fuel efficiency; the use of virgin, non-recyclable, and potentially toxic materials; and the ease with which products can be effectively disassembled for recycling at the end of their useful life.

## Purchasing

Resource consumption, air emissions, toxic releases, and waste associated with the production of component parts manufactured by original equipment suppliers.

## Manufacturing

Resource consumption, air emissions, toxic releases, and waste associated with the production and final assembly of Honda products in Honda's own manufacturing plants.

## Sales & Service

Emissions and waste from the effort to support the sales and servicing of Honda products in the marketplace, including the shipment of service parts and finished products between suppliers, warehouses, and dealers.

## In-Use

Greenhouse gas and smog-forming emissions from the use of Honda products in the hands of customers, impacted significantly by product fuel efficiency and tailpipe emissions performance.

## End-of-Life

Waste and toxic emissions from the disposal of Honda products and parts at the end of their useful life.

## Administration

Energy consumption, emissions, and waste resulting from the operation of Honda's offices and warehouse facilities.



Life Cycle Assessment

# Product Development

## Overview

The reduction of Honda's environmental footprint begins with the development of products that use fuel more efficiently, contain fewer substances believed to be harmful to the environment, and are designed to be manufactured using fewer scarce, harmful or non-recyclable materials, along with improved ease of dismantling to accommodate the recycling of materials at the end of a product's useful life.

## Focus

The single largest impact of Honda's products on the environment comes from the consumption of non-renewable fossil fuels and the byproducts of fuel combustion, including CO<sub>2</sub> emissions that contribute to global climate change. Honda is pursuing further advances in product fuel efficiency as the core of its commitment to reducing the environmental impact of Honda products.



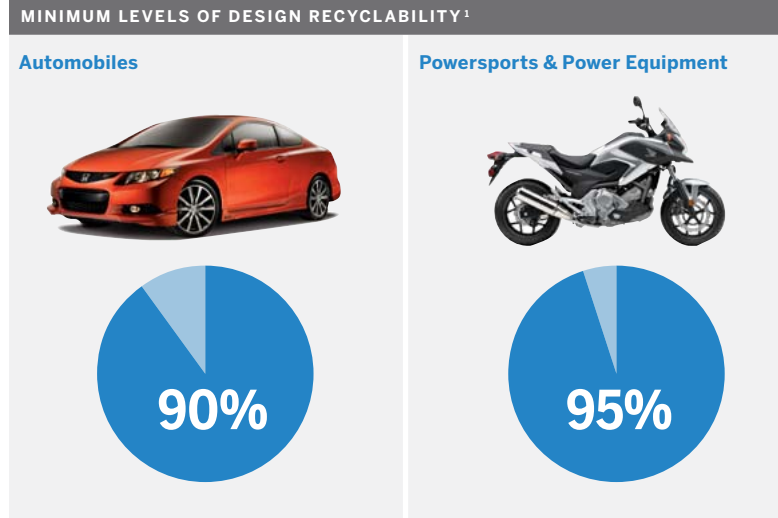
## Design for the Environment

Environmental factors are considered early and in each phase of the design and development process of every Honda and Acura product. In component design and in the selection of materials, Honda looks for opportunities to reduce a product's total environmental footprint, including its impact at the end of its useful life. Accordingly, Honda engineers take into account such factors as dismantling complexity, component remanufacturing, and the minimization of substances of concern (SOCs).

## Product Recyclability

In accordance with its global standard for the development of Honda products, the company has achieved and is committed to maintaining a minimum 90% level of design recyclability<sup>1</sup> for all Honda and Acura automobiles, and a minimum 95% level of design recyclability<sup>1</sup> for all powersports and power equipment products sold in North America. As of 2004, all new Honda and Acura automobiles have met or exceeded the 90% target. Honda will continue to look for new ways to improve the design recyclability of future products, in balance with other critical considerations, such as quality, efficiency, cost, and durability.

<sup>1</sup> Honda's calculation of product recyclability is based on the ISO standard 22628, titled "Road Vehicles Recyclability and Recoverability Calculation Method," which bases its estimates on existing, proven treatment technologies and takes into account the mass of materials recycled, reused, recovered for energy, or otherwise diverted from landfill disposal. In addition to these guidelines, Honda's calculation also takes into account recyclable mass within nonmetal residue.







## Reducing Substances of Concern (SOCs)

Honda's efforts to reduce SOCs have been consistent with evolving government regulations. The tools detailed below will help the company better understand and track the presence of SOCs in its products. Further, it will enable the company to continue to reduce the negative environmental impact of its products throughout their life cycle. This information will be essential as society moves toward a more comprehensive approach to chemical management and green chemistry.

### Supplier SOC Management Manual

Honda's Supplier SOC Management Manual documents the company's expectations for all producers of parts and materials used in Honda's products with respect to SOCs and recyclability. The Supplier SOC Management Manual is updated annually to reflect the latest regulatory and reporting requirements, Honda's SOC policies, and regional expectations. All suppliers are expected to reference the Manual for pertinent information regarding Honda's chemical management policies.

### Compliance with Hazardous Material Regulations

Honda continues to monitor on a global basis regulations that impact products produced in North America. During FY13, Honda, with the cooperation of its supply base, worked to gather material data on all parts and products bound for nations with hazardous material regulation requirements. Honda has focused on the REACH regulations, as well as reductions in the use of deca-BDE in the United States. Working with the supply base for Honda automobile, all-terrain vehicles and power products, Honda has successfully identified the parts using this chemical and is working with the suppliers to eliminate the usage in their mass production manufacturing process.

- **Continuing Use of International Material Data System (IMDS)**

On a global basis, starting in April 2010, Honda began to receive material data sheet submissions in IMDS from the supply base. IMDS is being used to gather data for all Honda divisions: automobile, powersports, and power equipment. Honda is tracking the use of chemicals on a corporate-wide basis, which registers and classifies chemical substances. All suppliers providing products to any Honda manufacturing entity, as well as suppliers of service parts, will be required to enter material data into IMDS for all new models. All suppliers of parts and materials procured by Honda are required to provide comprehensive data on the chemical composition of parts and materials.

- **Honda Chemical Management Standards**

The Honda Chemical Management Standard is used globally to identify those chemicals that should no longer be used, those chemicals for which a phase-out period has been identified, and those chemicals that Honda is monitoring for potential elimination. The Honda Chemical Management Standard addresses automotive, powersports, and power equipment requirements. Honda is committed to reducing and, if possible, eliminating SOCs in all products, in accordance with global regulations.

- **Compliance with REACH**

In accordance with Honda's efforts to manage chemical substances in its products, the company has worked with its supply chain to guarantee compliance with the European Union's REACH (Registration, Evaluation, Authorization, and Restriction of Chemicals) regulation for products sold in North America. Honda has worked with its suppliers to understand chemical breakdown of current parts and materials. Together, the targeted Honda manufacturing facilities and the North American supply chain have been responsive and accountable to the REACH regulation. This enables Honda to ascertain the content percentage amount of the substances at the article level to confirm and report compliance.

## Reducing Substances of Concern (SOCs) cont'd

Substances of Concern in Honda and Acura Products	
CURRENT STATUS	OPPORTUNITIES FOR FUTURE REDUCTIONS
<b>Lead</b> — used in electronic applications for its good melting characteristics, long-term stability, and vibration durability. Used in metal alloys for its superior machinability, strength, and fatigue resistance.	
Reducing use in electronics, light bulbs, and corrosion-resistant paints.	Working with individual suppliers to introduce lead-free circuit boards that meet Honda's requirements for durability and performance.
Replaced lead with non-hazardous materials in electro-deposition coatings and steel bars (with the exception of residual amounts of contaminants that may include lead, such as lead in recycled aluminum).	Overcoming strength and fatigue when lead inclusions in the microstructure of the steel alloys are replaced with manganese sulfide (MnS) inclusions.
Eliminated from automobile and on-highway motorcycle wheel weights; replaced with a zinc alloy.	Introduced low-lead ATV wheel hubs in 2012. Trace amounts of lead in steel and recycled aluminum may still be present. Honda chemical substance guidelines allow for a maximum 0.25% lead content by volume.
<b>Hexavalent Chromium</b> — used to protect exterior parts from corrosion.	
All North American suppliers have phased out the use of hexavalent chromium.	Fully eliminated. Continue to monitor suppliers for compliance.
<b>Mercury</b> — used for bright and uniform illumination.	
Honda has never used mercury in switches, radios, or ride-leveling devices. However, Honda still uses very small quantities of mercury in high-intensity discharge (HID) headlights and in illuminated entertainment and navigation systems.	Phasing in mercury-free displays using a new type of backlight, beginning with new models introduced in model year 2010.  Start to employ mercury-free HID bulbs within the next several years, as the remaining technical challenges are overcome.
<b>Polybrominated Diphenyl Ethers (PBDEs)</b> — used as a flame retardant and as a surfactant.	
Phased out the use of octa- and penta-PBDEs in 2004. Working with suppliers to verify that these substances are no longer used in products. A small number of original equipment parts still contain PDBEs.	Working with suppliers to eliminate deca-BDEs from products when technically feasible. Honda phased out deca-PDBEs from all ATV and off-road motorcycles in 2011.
<b>Perfluorooctane Sulfonate (PFOS)</b> — used as a water repellent agent.	
Eliminated PFOS in all parts delivered to North American manufacturing facilities.	Fully eliminated. Continue to monitor suppliers for compliance.
<b>Polyvinyl Chloride (PVC)</b> — used in sealants and interior materials to reduce weight and to meet high standards for durability, fade resistance, and other critical quality criteria.	
Replacing PVC used in instrument panels, inner-door weather stripping, and shift knobs.	Working with suppliers to implement PVC-free technologies for components such as interior trim pieces and seat coverings.



---

## Reducing PVC in Honda and Acura Automobiles

---

Honda's goal is to have a PVC-free material construction for interiors on all of its vehicles. Through the end of FY13, vehicles with PVC-free interiors are the Honda Accord Coupe & and Accord Sedan, Crosstour, Odyssey, CR-Z, Insight, and the Acura TL, RDX, ILX, and RL.

Honda continues to investigate high-quality and cost-effective alternatives to PVC in an effort to minimize its use in all products. Although Honda has minimized the number of vehicle parts containing PVC, cost and quality barriers present a challenge to its total elimination.

---

## Air Quality/Cabin VOC

---

In line with Honda's strategy to reduce hazardous materials wherever possible, Honda is also focusing on the improvement of air quality within the interior of the vehicle. Honda engineers have been focusing efforts toward adequately measuring and predicting levels of in-cabin VOCs. This activity resulted in a better understanding of which parts Honda engineers should focus on to help reduce in-cabin VOC levels.

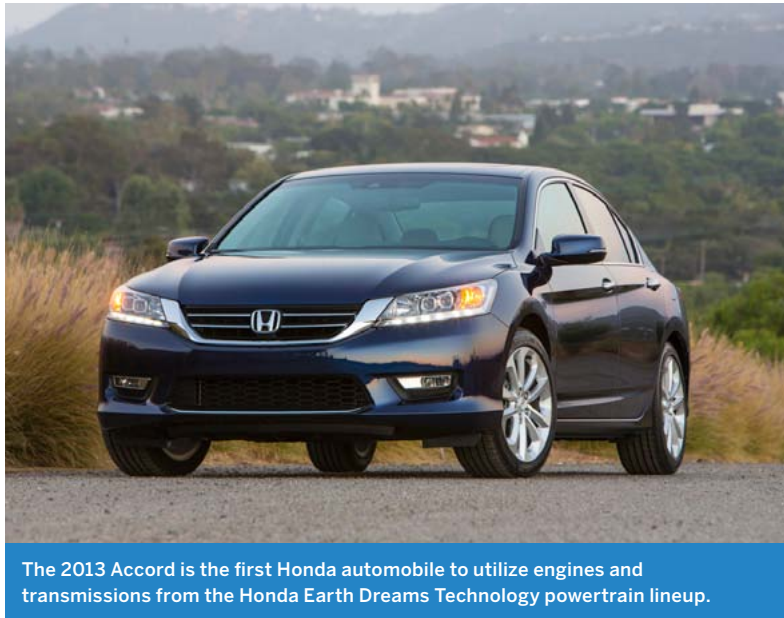
- Several low in-cabin VOC technologies, such as low-VOC adhesives, tapes, foams, and coating materials, have been applied to Acura and Honda models since 2007. Recently redesigned vehicles, such as the Odyssey, Civic, and Accord have included new non-painted, high-quality appearance low-VOC plastic materials for the inner door handles.
- Honda will continue its efforts to reduce cabin VOCs and to improve air quality in the cabins of all its vehicles.



## New Products and Technologies Introduced in FY13

### Ninth-Generation Accord Launched in North America

In the fall of 2013, Honda introduced the ninth generation of the Accord, Honda's top-selling model in North America. The 2013 Accord features the first application of Honda Earth Dreams Technology™ powertrains, helping the new Accord achieve both top-class fuel efficiency along with outstanding driving performance. The ninth-generation family of Accords features the most diverse powertrain lineup in the model's history, composed of a highly fuel-efficient direct-injected 4-cylinder engine and continuously variable transmission (CVT), a redesigned V-6 with cylinder deactivation, and an all-new two-motor hybrid system that powers the Accord Plug-In Hybrid, launched in early 2013, and the Accord Hybrid (launching in the fall of 2013).



The 2013 Accord is the first Honda automobile to utilize engines and transmissions from the Honda Earth Dreams Technology powertrain lineup.

Key fuel-efficiency technologies in 4-cylinder Accords include:

- VTEC (Variable Valve Timing and Lift Electronic Control System) technology to improve thermal efficiency
- A die-cast aluminum block for reduced weight
- A high-pressure direct injection fuel system along with numerous friction-reduction technologies
- An all-new continuously variable transmission (CVT)



### New Direct Injected 4-cylinder engine and Continuously Variable Transmission (CVT)

The majority of Accords sold in North America are equipped with a 4-cylinder engine and automatic transmission. The 2013 Accord's all-new Earth Dreams Technology 2.4-liter 4-cylinder engine employs numerous technologies to achieve a 12% increase in torque and 11% increase in powertrain fuel efficiency, achieving an

EPA-rated 27/36/30mpg (city/highway/combined), up from 23/33/27 on the previous model. A Partial Zero Emissions (PZEV) model is sold in California, Connecticut, Maine, Maryland, Massachusetts, New Jersey, New York, Oregon, Pennsylvania, Rhode Island, Vermont, and Washington.



## New Products and Technologies Introduced in FY13 cont'd

### Redesigned V-6 with Variable Cylinder Management (VCM)



The Accord V-6 features Honda Variable Cylinder Management™ (VCM™) technology with the ability to transition smoothly from 6-cylinder to 3-cylinder operation when engine loads are low, such as when cruising on the highway. VCM

work in conjunction with a 3-stage i-VTEC valvetrain and 6-speed automatic transmission (or available 6-speed manual transmission in Coupe models) to deliver a class-leading EPA rating of 21/34/35 (city/highway/combined), up from 20/34/30 on the previous model.

### EcoAssist System



All Accord models with 4-cylinder engines, along with other popular Honda models, including the Civic, CR-V, Insight, and CR-Z, feature Honda's innovative and interactive ECO Assist™ fuel-efficiency coaching technology, which

was named to Green Car Journal's "Top 10 Green Car Technology" list for 2013.

Honda's ECO Assist™ can help drivers develop driving habits that enhance fuel efficiency by observing the speedometer background's response to driving practices. Fuel-saving behaviors like smooth acceleration and braking will cause the meter to glow green. Less fuel-efficient driving habits will cause the meter glow blue-green, while aggressive starts and stops that consume extra fuel cause the meter to glow blue. In addition to the ECO Assist™ technology, drivers can also engage the green, dash-mounted "ECON" button to further optimize control of the transmission, engine, and other powertrain elements to help conserve additional fuel.

### Accord Plug-In Hybrid with Two-Motor Hybrid System

Introduced to customers in California and New York in January 2013, the Accord Plug-In Hybrid achieves an EPA-rated 115MPGe in all-electric mode, making it the most fuel-efficient five-passenger sedan in America at the time of its launch. The Accord Plug-In Hybrid is also EPA-rated to achieve an EV Mode driving range of 13 miles and EPA gasoline fuel-economy rating of 47/46/46 mpg. It is also the first mass-produced vehicle to meet the new, more stringent LEV3/SULEV20 exhaust emissions standards.

The 2014 Accord Plug-In Hybrid is powered by an all-new Honda Earth Dreams Technology™ two-motor hybrid system utilizing a powerful 124-kilowatt (kW) electric motor that also acts like a continuously variable transmission (e-CVT) mated to a highly fuel-efficient 2.0-liter i-VTEC, Atkinson cycle 4-cylinder engine. Electric-only operation is supported by a 6.7-kilowatt-hour (kWh) lithium-ion (Li-Ion) battery, with high-efficiency regenerative braking provided by an all-new electric-servo braking system. To maximize driving efficiency, the new two-motor hybrid system allows the Accord Plug-In powertrain to transition seamlessly between all-electric EV Drive, gasoline-electric Hybrid Drive, and direct Engine Drive.





Life Cycle Assessment

# Purchasing

## Overview

More than 600 domestic suppliers in North America produce parts, components, and materials for Honda's manufacturing operations. In addition, logistics companies support Honda manufacturing with the efficient delivery of these parts and components to its plants.

## Focus

The company's purchasing-related environmental initiatives include route consolidation, use of on-site consolidation centers to reduce shuttle traffic, and optimization of shipping transport space. Suppliers also are encouraged to adopt measures to reduce the environmental impact of producing parts and components for Honda and Acura products, such as initiatives to reduce energy emissions and packaging waste.

## Green Purchasing Guidelines

In 2001 “Green Purchasing” guidelines were created to guide Honda’s environmental conservation activities in the area of purchasing. In 2011, Honda’s North American Purchasing group worked with parent company Honda Motor Co., Ltd. to revise the original guidelines, focusing on improved tracking and a reduction in the environmental impact beyond primary suppliers throughout the extended supply chain.

The guidelines, which apply to all parts and materials suppliers around the world, consistently communicate Honda’s expectations, enabling Honda to provide customers with worldwide products that have a minimal environmental footprint.

### Supply Chain Environmental Initiatives

- 1 Management activities that ensure environmental control during the manufacturing and transporting of products, parts, and materials
- 2 Activities to reduce greenhouse gas emissions in all corporate areas
- 3 Parts and material proposals to achieve weight reduction and reduce energy usage
- 4 Compliance with various laws and regulations, as well as the Honda Chemical Substance Management Standard

### Supply Chain Greenhouse Gas Initiative

Honda began a Greenhouse Gas Initiative in FY11 to develop a more comprehensive picture of the challenges associated with tracking and reporting greenhouse gas emissions data in our supply chain. The company continues to gather emissions data from the supply chain, working to build a stronger carbon-management system.

During FY13 a survey on greenhouse gas emissions was issued by Honda, utilizing the Automotive Industry Action Group (AIAG) survey format. Nearly 90 suppliers, representing 70% of annual purchases, participated. The survey was developed by Honda and other original equipment manufacturers (OEM), tier-1 suppliers, and service providers.

To encourage suppliers to share their “best practices” and collaborate with others about their experiences, Honda hosted meetings and webinars to help educate and support its suppliers’ reporting accuracy.

This program was initiated to help achieve a balance between data collection and energy reduction, and will help shift Honda’s focus to energy reduction in the future. There are plans to expand the program and engage more suppliers in FY14.

## Parts Logistics Initiatives

### Responding to Market Changes

Honda continues to minimize its environmental impact from parts logistics by continuously evaluating part volumes and flows and finding opportunities to reduce, eliminate, or avoid unnecessary miles in the supply chain while remaining flexible to meet customer demand. In addition to our continued reengineering of the transportation network along with daily activities to improve trailer space utilization, we are evaluating non-traditional freight volumes

that incorporate shipments from second- and third-tier suppliers and shipments of service parts, which can be incorporated into Honda's network. Those activities netted a positive impact starting in 2013.

### Reducing Fuel Consumption and CO<sub>2</sub> Emissions

During 2013, through our continued load planning, dynamic release of small orders, and continuous freight volume evaluation, we significantly reduced truck miles and CO<sub>2</sub> emissions.

### Cube Utilization Efforts

ACTION	FY13 RESULTS	
	TRUCK MILES AVOIDED	CO <sub>2</sub> EMISSIONS AVOIDED
<b>Daily load planning</b> to ensure material arrives at its required time while achieving fully cubed trucks.	1.621 million miles	2,522 metric tons
<b>Dynamic releasing</b> of small-volume orders onto available trailer space in Honda's network to avoid under-cubed trailers.	0.206 million miles	320 metric tons
<b>Continuous evaluation</b> to identify and act upon opportunities for optimized cube utilization, such as pulling ahead freight from Saturday production dates or non-aligned holidays when not all of Honda's plants run, adding non-OEM freight to the available cube, and even combining and eliminating routes.	2.538 million miles	3,949 metric tons

## Supplier Symposium

The Environmental, Safety and Ergonomics Symposium, hosted by Honda's North American Purchasing group, recognizes suppliers for environmental efforts, such as conservation, energy reduction, and elimination of waste to landfills. The 2013 event marked the 20th anniversary for this annual symposium.





Life Cycle Assessment

# Manufacturing

## Overview

Honda operates 14 manufacturing facilities in North America, producing<sup>1</sup> automobiles, all-terrain vehicles (ATVs), and power equipment products such as lawn mowers, snow blowers, and small displacement general-purpose gasoline engines. In FY13, more than 90% of the vehicles sold in North America were produced in the region.

## Focus

Our work to reduce the environmental impact of our manufacturing operations in North America includes efforts to reduce the energy intensity of production, as well as initiatives to use water and other natural resources more efficiently, and to reduce air emissions and waste generation.

---

**Important note concerning this section:** It is important for readers to understand the difference in scope of manufacturing data reported in the 2013 North America Environmental Report and the Honda Environmental Annual Report 2013 produced by Honda Motor Co. Ltd. in Japan. The Honda Environmental Annual Report 2013 reports data from all Honda Motor Co. Ltd. consolidated subsidiary and affiliated manufacturing operations in North America. The 2013 North America Environmental Report manufacturing data reports only data from the ten subsidiary operations in North America currently producing products. Two additional manufacturing subsidiaries, Honda Aircraft Company Inc. and Honda Aero Inc., are not currently included because they have had no commercial sales. The CO<sub>2</sub> emissions, energy use, waste generation, and water use data reported in the 2013 North America Environmental Report have been independently verified by Bureau Veritas.

<sup>1</sup> Using domestic and globally sourced parts

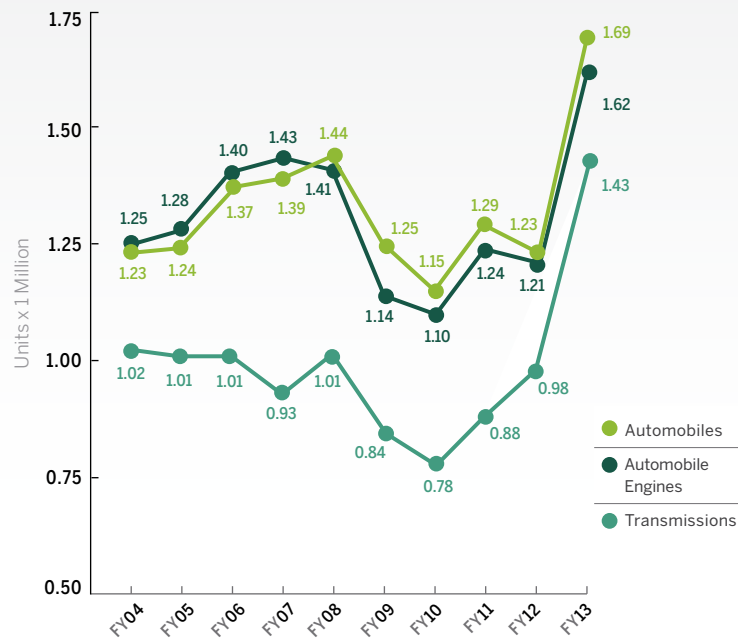
## Production Activity in North America

Improving economic conditions, and the recovery of production to normal levels following severe disruptions in plant operations due to natural disasters, resulted in more industry stability and a substantial increase in production at Honda's plants in FY13 versus previous fiscal years.

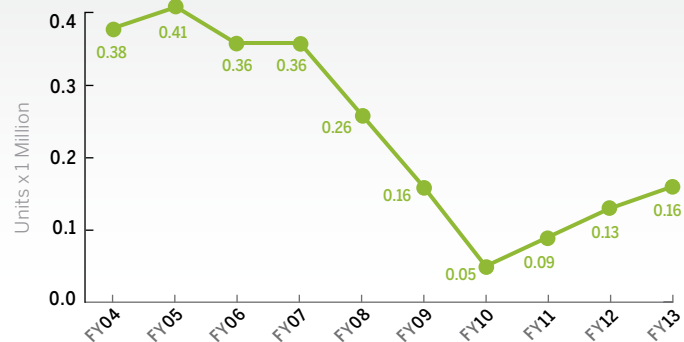
These increased production levels at most plants had a positive effect on per-unit measures of energy use, CO<sub>2</sub> emissions, waste, and water use.

### Honda Product Manufacturing Results in North America (millions of units)

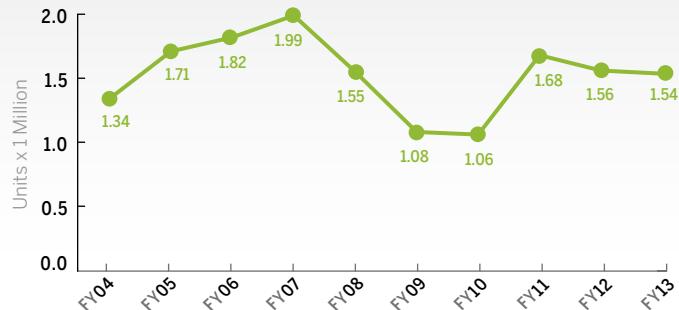
**AUTOMOBILE PRODUCTION TOTALS**



**POWERSPORTS PRODUCTION TOTALS**



**POWER EQUIPMENT PRODUCTION TOTALS**



**ISO 14001 Certification of Manufacturing Facilities:** Honda implemented the central element for environmental oversight and management of its North American manufacturing operations in 1998 by making a commitment to achieve and maintain third-party ISO 14001 certification for environmental management at Honda manufacturing operations throughout the region. Thirteen of the 14 Honda plants operating at the end of FY13 were certified to the ISO 14001:2004 standard. Honda Manufacturing of Indiana, LLC, the company's newest auto plant in the region, is scheduled to achieve certification by 2014.



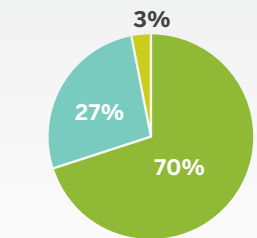
## CO<sub>2</sub> Emissions

Approximately 97% of CO<sub>2</sub> emissions from manufacturing operations in North America fall into two categories: (1) indirect emissions from the production of electricity purchased and consumed by Honda factories; and (2) direct emissions from consumption of natural gas. Honda plants use electricity for automation, lighting, motors, air compressors, and cooling. Natural gas is needed for heating and conditioning fresh air, and for manufacturing process equipment such as melt furnaces and paint curing ovens.

Despite a significant increase in production activity in plants throughout North America in FY13, including a 37% increase in automobile production, total CO<sub>2</sub> emissions rose just 14.8% compared with year-ago results, due in part to continued strong efforts to improve the energy efficiency of manufacturing operations in the region.

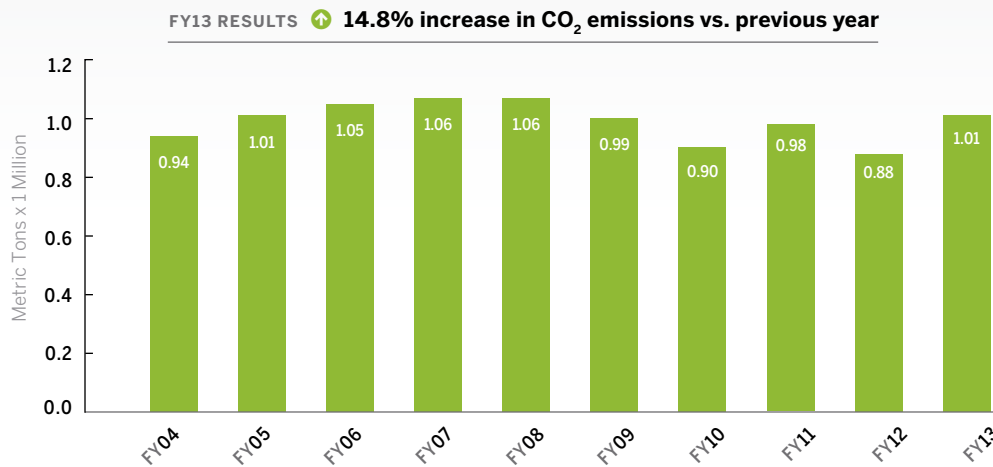
### CO<sub>2</sub> Emissions from Manufacturing in North America

SOURCES OF  
CO<sub>2</sub> EMISSIONS



- **70%** Electricity
- **27%** Natural Gas
- **3%** Other Fuels  
Propane, fuel oil,  
gasoline, coke,  
kerosene

CO<sub>2</sub> EMISSIONS FROM MANUFACTURING  
(FROM PURCHASED ELECTRICITY AND NATURAL GAS)<sup>1</sup>



<sup>1</sup> Total CO<sub>2</sub> emissions (from consumption of electricity and natural gas) include the 14 listed North American manufacturing operations.

## CO<sub>2</sub> Emissions

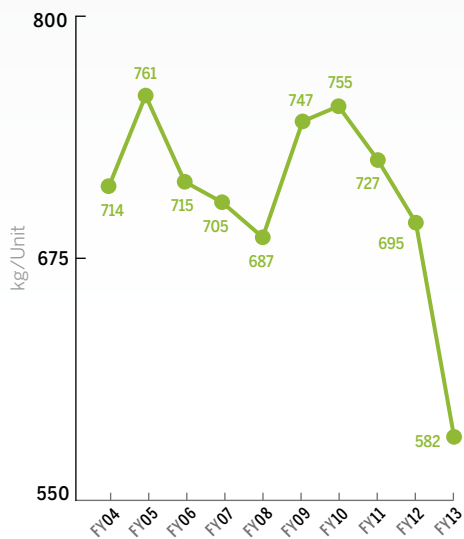
### Per-Unit CO<sub>2</sub> Emissions (Emissions Intensity)

#### AUTOMOBILE MANUFACTURING<sup>1,3</sup>

##### FY13 RESULTS

↓ **16.2% decrease vs. previous year**

Results were positively impacted from increased production levels and improved capacity utilization.

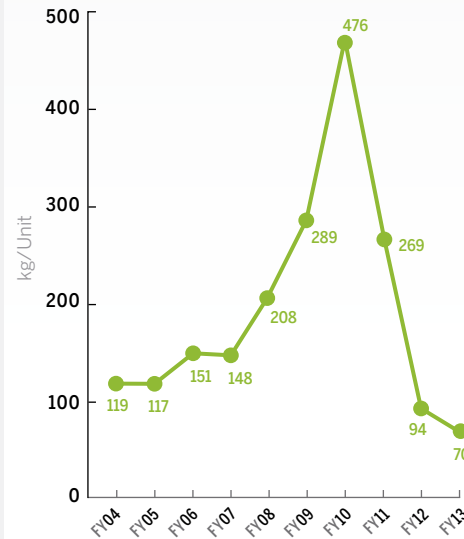


#### POWERSPORTS PRODUCT MANUFACTURING<sup>2,3</sup>

##### FY13 RESULTS

↓ **25% decrease vs. previous year**

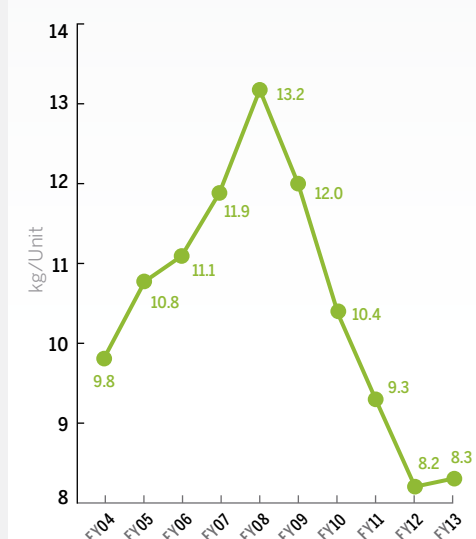
Results were positively impacted from increased production levels and improved capacity utilization.



#### POWER EQUIPMENT PRODUCT MANUFACTURING<sup>3</sup>

##### FY13 RESULTS

↑ **1.1% increase vs. previous year**



<sup>1</sup> CO<sub>2</sub> emissions data for automobile production prior to FY06 include production of both motorcycles and automobiles in Honda's plants in Mexico. Beginning with FY12 data, emissions at the Mexico plants are allocated between automobile and motorcycle production based on sales value.

<sup>2</sup> CO<sub>2</sub> emissions data prior to FY06 do not include production of motorcycles in Mexico because the data were included in the automobile total. Beginning with FY12 data, emissions from plants in Mexico are allocated between automobile and motorcycle production based on sales value.

<sup>3</sup> Updated to eGRID2012 Version 1.0 year 2009 GHG Annual Output Emission Rates.

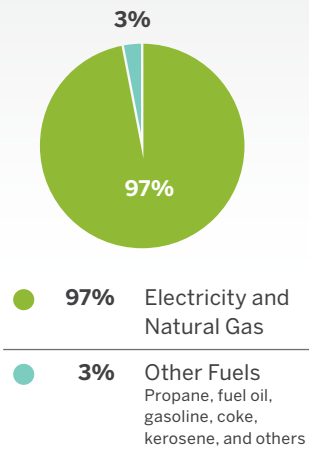
## Energy Use

Electricity and natural gas represent approximately 95% of total energy consumption by Honda's North American manufacturing plants.

The energy intensity of production was significantly improved as a result of higher production volumes and more efficient utilization of plant production capacity.

### Energy Consumption

#### ENERGY USE BY SOURCE



#### ENERGY USE IN MANUFACTURING (TOTAL AND PER AUTO)

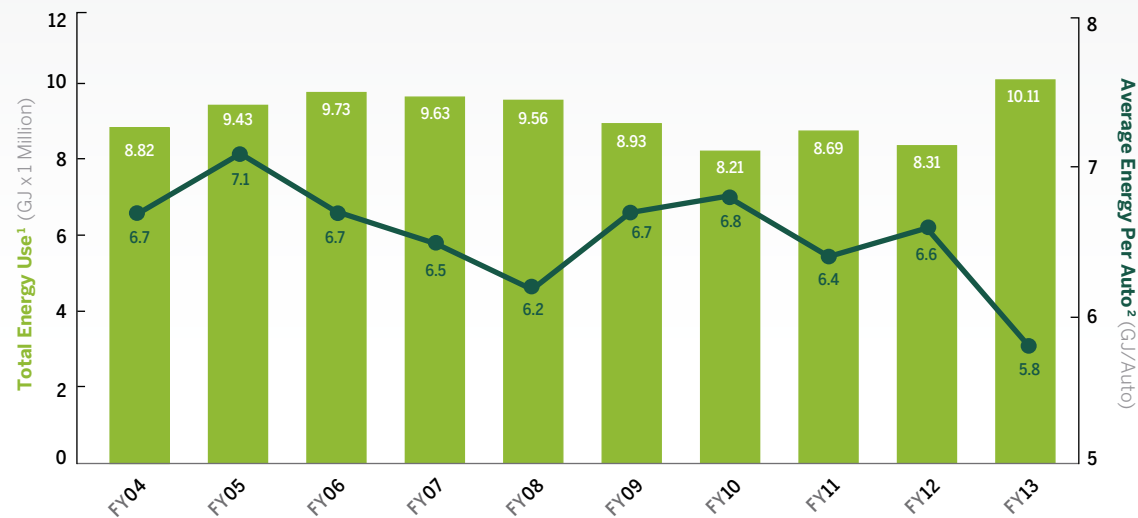
##### FY13 RESULTS

##### Total Energy Use:

⬆️ 21.7% increase vs. previous year

##### Energy Use Per Auto:

⬇️ 12.1% decrease vs. previous year



<sup>1</sup> Total energy use (from consumption of electricity and natural gas) includes all North American manufacturing operations.

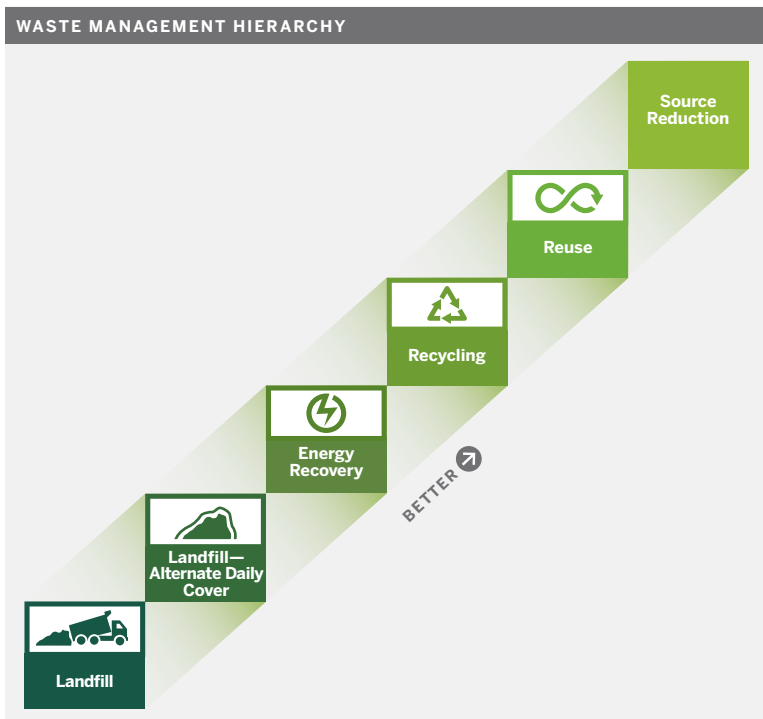
<sup>2</sup> Energy used per auto encompasses all auto-related manufacturing activity, including automobile engines and transmissions produced in North America; it does not include power equipment and powersports products.



## Waste

Honda strives to prevent the generation of waste at its manufacturing plants, viewing it as inefficient use of raw materials. Total solid waste per unit of automobile production was significantly reduced in part due to improved capacity utilization.

Honda has created a hierarchy that ranks waste management methods based on environmental preference (see illustration below). Use of a waste for energy recovery is preferable to landfill, and recycling/reuse is preferable to energy recovery. Honda's management strategy is based on this hierarchy along with the distinct characteristics and regulatory requirements associated with each waste product.



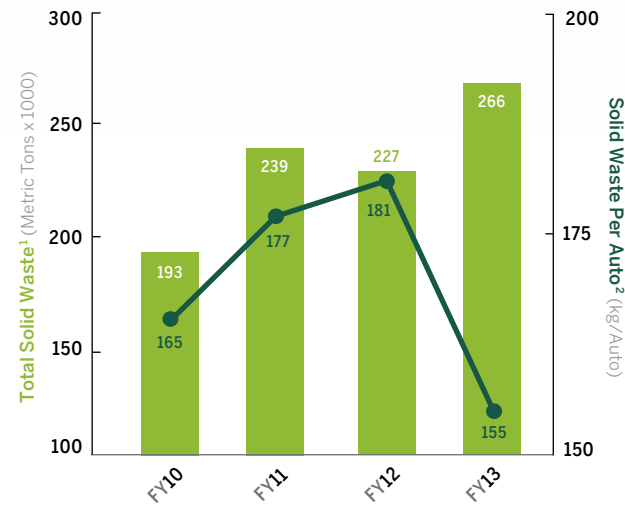
## Waste from Manufacturing Operations

### TOTAL SOLID WASTE FROM MANUFACTURING IN NORTH AMERICA

#### FY13 RESULTS

**Total Solid Waste:**  
⬆️ 17.2% increase vs. previous year

**Solid Waste Per Auto:**  
⬇️ 14.4% decrease vs. previous year



<sup>1</sup> Total waste includes the 14 listed North American manufacturing operations.

<sup>2</sup> Total waste per auto includes all auto-related manufacturing operations; it does not include powersports and power equipment production operations. Beginning with FY12 data, waste at the Mexico plants is allocated between automobile and motorcycle production based on sales value.



## Waste cont'd

Honda set a target in FY09 to achieve virtually zero waste to landfill — defined as less than 1% of all operating waste, including mineral waste, sent to landfills — for all North American manufacturing operations. This goal was achieved in FY11 and maintained in FY12 and FY13.

In FY13, some by-products produced in Honda plants in North America were disposed of via landfill, resulting in a slight temporary increase in landfill waste. Going forward, these by-products will be disposed of via alternative means. Honda will continue to eliminate remaining waste to landfill where technically, economically, and environmentally feasible alternatives are identified.

### Honda Zero Waste to Landfill Initiative

#### LANDFILL WASTE FROM MANUFACTURING FACILITIES IN NORTH AMERICA

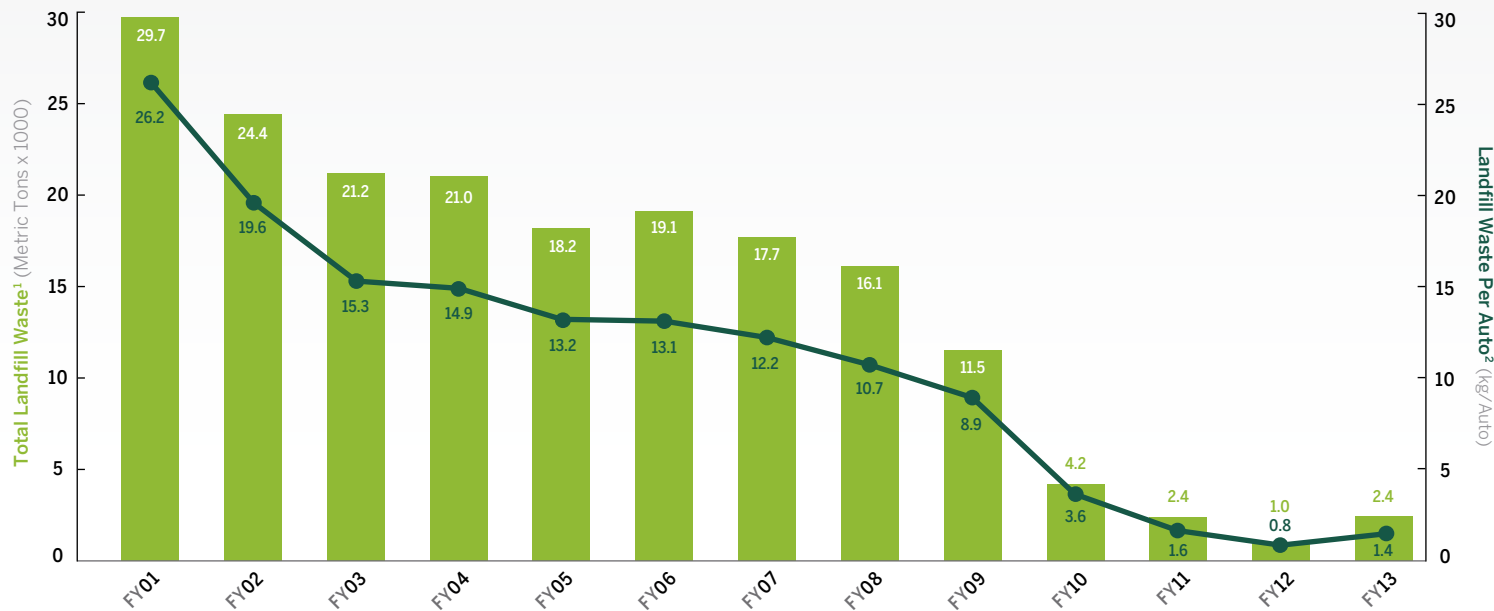
##### FY13 RESULTS

##### Total Landfill Waste:

- ↓ 91.9% decrease vs. baseline (FY01)
- ↑ 140.0% increase vs. previous year

##### Landfill Waste Per Auto:

- ↓ 94.6% decrease vs. baseline (FY01)
- ↑ 75.0% increase vs. previous year



<sup>1</sup> Total landfill waste includes all North American manufacturing operations.

<sup>2</sup> Landfill waste per auto includes all auto-related manufacturing operations; it does not include powersports and power equipment production operations.

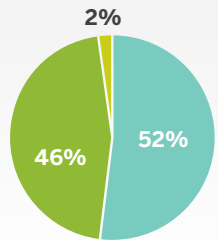


## Water Use

Honda's North American plants continued to strive to improve water efficiency. In FY13, increased production volumes at most plants had a positive impact on the water intensity (per-unit consumption of water) of automobile manufacturing.

### Water Use

#### WATER USE BY SOURCE



- 52% Purchased from Water and Local Utilities
- 46% Direct Ground Water Withdrawal
- 2% Rainwater Capture and Reuse

#### WATER USE IN NORTH AMERICAN MANUFACTURING FACILITIES

##### FY13 RESULTS

##### Total Water Use:

↑ 19.1% increase vs. previous year

##### Water Use Per Auto:

↓ 12.9% decrease vs. previous year



<sup>1</sup> Total water use includes all North American manufacturing operations.

<sup>2</sup> Water use per unit of automobile production includes all automobile, automobile engine, and automobile transmission production in North America; it does not include powersports and power equipment production operations.





## Water Use cont'd

### Wastewater Management

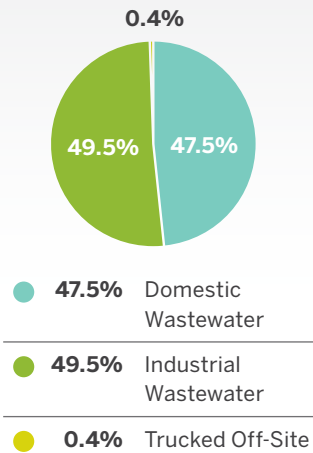
Domestic wastewater is generated from the use of restrooms, water fountains, cafeteria operations, and air conditioning related to associate (employee) comfort. Industrial wastewater is generated primarily from painting, surface treatment, and machining operations. Plants that generate industrial wastewater pre-treat the water on-site to reduce the contaminants to below regulated levels before the water is discharged into local municipal wastewater treatment plants. The pre-treated wastewater must meet regulatory requirements established

at municipal, state, and federal levels. Less than 1% of wastewater is trucked off-site for treatment.

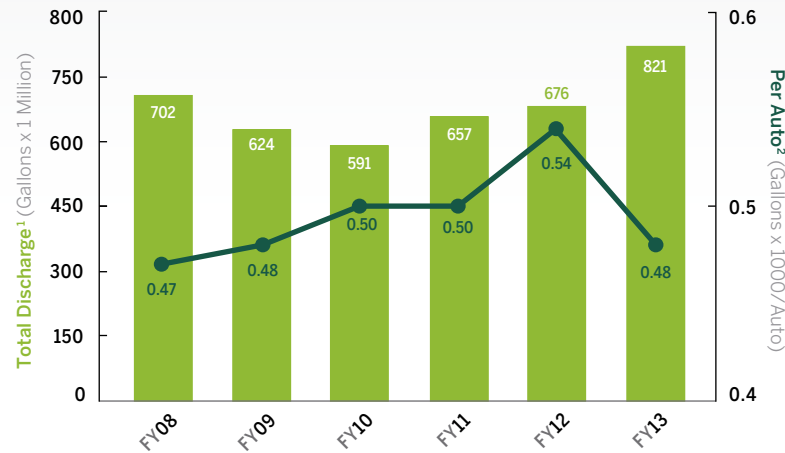
Manufacturing plants also discharge wastewater directly to local waterways. Several plants also have National Pollutant Discharge Elimination System (NPDES) permits, which allow the discharge of storm water associated with industrial activities, including cooling tower blow down and air conditioning condensate. The NPDES permits set contaminant limits and mandates periodic sampling and reporting.

## Wastewater Discharge and Disposal

### WASTEWATER DISCHARGED FROM N.A. MANUFACTURING FACILITIES



### INDUSTRIAL WASTEWATER DISCHARGED FROM N.A. MANUFACTURING FACILITIES



#### FY13 RESULTS

- Total Discharge:**
  - ↑ 21.5% increase vs. previous year
- Per Auto:**
  - ↓ 7.4% decrease vs. previous year

<sup>1</sup> Total wastewater discharged includes all North American manufacturing operations.

<sup>2</sup> Total wastewater discharged per unit of automobile production includes all auto-related manufacturing operations in North America; it does not include power equipment production operations.

## Air Emissions

Honda plants release various "criteria" air contaminants, including volatile organic compounds (VOCs), particulate matter (PM), oxides of nitrogen (NO<sub>x</sub>), oxides of sulfur (SO<sub>x</sub>), and carbon monoxide (CO). VOC emissions typically come from painting operations. PM emissions usually result from metal casting and finishing processes, and from painting operations. NO<sub>x</sub> and CO emissions typically result from the combustion of natural gas and other fuels for heating and process needs, and from the use of engine and full-vehicle testing dynamometers.

Air emissions are permitted and controlled in accordance with applicable laws and regulations. Each plant routinely monitors, tracks, and reports emissions levels to regulatory agencies in accordance with federal, provincial, and state requirements. Honda factories are routinely inspected for compliance with legal requirements.

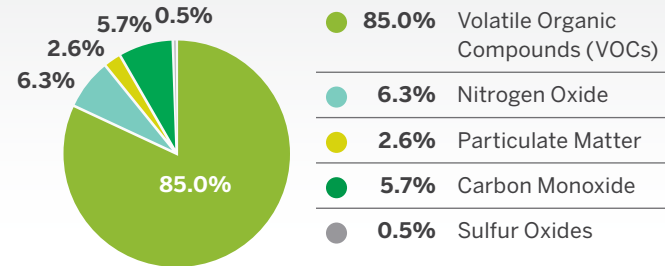
### VOC Emissions from Auto Body Painting

Auto painting operations are the primary source of volatile organic compound (VOC) emissions released from Honda's North American manufacturing plants. It has always been Honda's policy to minimize the release of VOCs by adopting less-polluting painting processes whenever possible. VOC emissions from auto-body painting operations in FY13 were well below the company's targeted maximum of 20 g/m<sup>2</sup>.

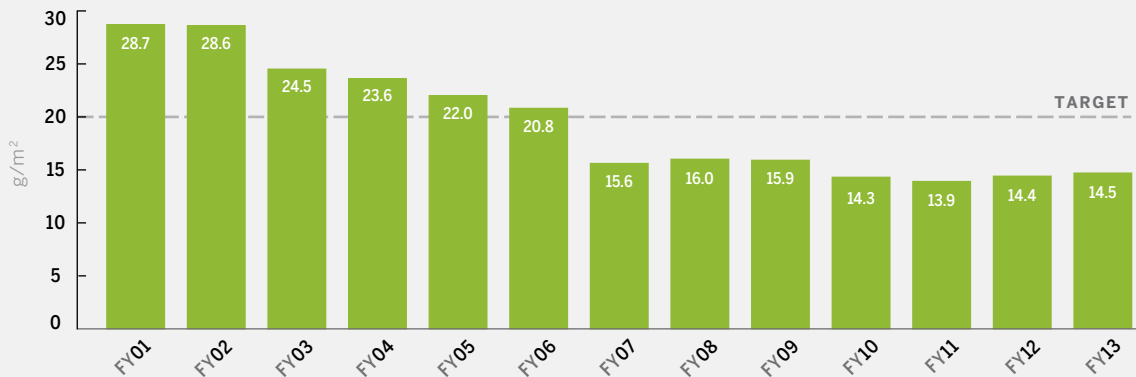
## Air Emissions

In calendar year 2013, Honda's North American manufacturing plants released approximately 4,592 tons of criteria air pollutants. Overall, 85.0% of the air contaminants released were VOCs.

### MAKEUP OF AIR EMISSIONS FOR N.A. MANUFACTURING FACILITIES



### VOC EMISSIONS FROM AUTO BODY PAINTING IN NORTH AMERICA



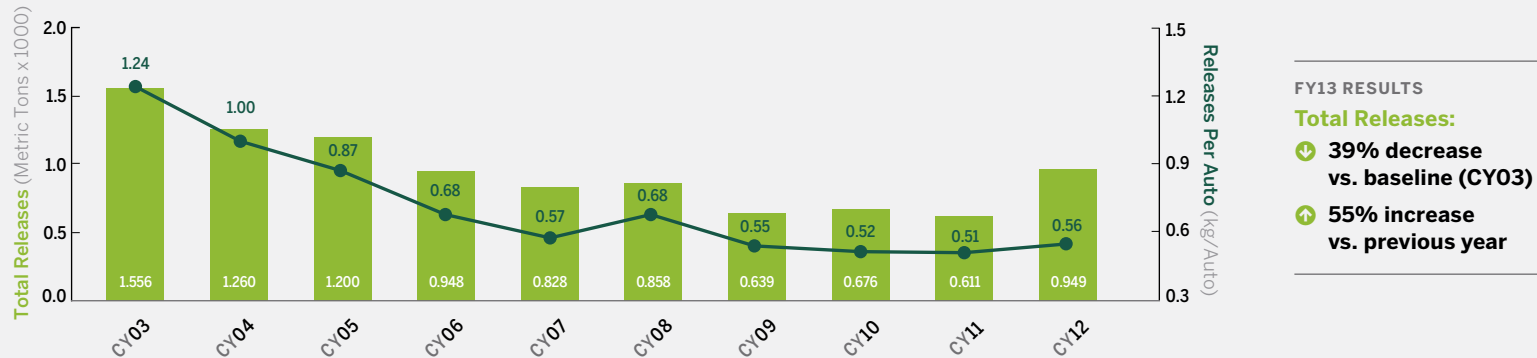
#### FY13 RESULTS

- ↓ **49% decrease vs. baseline (FY01)**
- ↑ **0.7% increase vs. previous year**



## Chemical Releases

TOTAL AND PER-AUTO TRI/NPRI RELEASES FROM PLANTS IN THE U.S. AND CANADA



### FY13 RESULTS

#### Total Releases:

- ↓ 39% decrease vs. baseline (CY03)
- ↑ 55% increase vs. previous year

Honda has reduced its total Toxic Release Inventory (TRI) and National Pollutant Release Inventory (NPRI) emissions more than 39% since calendar year 2003, despite significant expansions in production capacity. Automobile-specific TRI/NPRI emissions per unit of production were reduced about 54% in the United States and Canada in the same period. The 55% increase in FY13 was due primarily to a large increase in the volume of production.

### Reducing Chemical Release — TRI/NPRI Reporting

Honda operations in the United States and Canada report total chemical releases annually in accordance with regulatory requirements. In the United States, TRI data are submitted to both state and federal environmental protection agencies. They are available for public review at [www.epa.gov](http://www.epa.gov). In Canada, NPRI data are submitted to Environment Canada and to the Ontario Ministry of the Environment, and are available for public review at <http://www.ec.gc.ca/inrp-npri/>.

### Accidental Spill and Release Prevention, Tracking, and Reporting

Prevention of environmental spills and releases is a key design consideration for all Honda manufacturing facilities. Exterior chemical and wastewater storage tanks and transfer systems are constructed with materials and designs that help minimize the risks of leaks and spills. Most exterior tanks and piping systems have backup containment capabilities to help recover any leaked or spilled material. Additionally, storage tanks are equipped with alarms to give advance warning of overfilling. Virtually all materials with the potential for release are handled within enclosed buildings. Learning from accidental releases is critical to preventing future occurrences. Therefore, Honda tracks all significant incidents. Major incidents undergo root-cause analysis, and Honda uses the information to improve operations.



## Energy Reduction Efforts in FY13

### Turning Cooking Oil into Biodiesel Fuel

Honda Manufacturing of Alabama, Inc., provides used cooking oil from its cafeterias to the Alabama Institute for the Deaf and Blind. This vendor produces biodiesel from the oil and provides it to Honda's Lincoln, Alabama plant at no cost. The plant then uses the biodiesel to operate a vehicle that transports waste and recyclables throughout the facility. Annual usage of biodiesel is expected to be approximately 6,500 gallons.

### Fluidized-Bed Carbon Cleans the Air

As part of a FY13 expansion, Honda Manufacturing of Alabama, Inc. reduced energy use by installing a fluidized-bed carbon (FBC) system to destroy VOCs from the bumper coating process at its Lincoln, Alabama automobile plant. The new system reduces energy use by approximately 80% compared with the more widely used regenerative thermal oxidizer system. This results in an annual reduction of approximately 1,600 metric tons of CO<sub>2</sub> and 1.5 metric tons of NO<sub>x</sub>.

### Steam Has Left the Building

In an effort to provide heat and humidity in a more efficient and flexible manner, Honda's Marysville, Ohio auto plant, its oldest and largest plant in North America, completed a multi-year project to transition from a centralized steam system to localized natural gas and electric systems. The steam elimination at the plant will save \$640,000 annually while reducing CO<sub>2</sub> emissions by 828 metric tons each year.

### Dual-Chamber Furnace Saves Energy



The Anna, Ohio engine plant, Honda's largest engine plant worldwide, has completed installation of energy-efficient dual-chamber furnaces to replace single-crucible furnaces. The new furnaces allow for continuous filling of aluminum for die casting operations while the machine is running in automatic mode. This has reduced CO<sub>2</sub> emissions by 88.4 metric tons per year and yielded an \$8,900 annual savings.

### Next-Generation E-Coat

The use of next-generation paint material used at the Greensburg, Indiana auto plant and Marysville, Ohio auto plant (production line 1), which together comprise roughly 30% of Honda's automobile production capacity in North America, resulted in a reduction of E-coat material, electricity, and water use:

- E-Coat material use reduced 25%
- Electricity use reduced by 1.4 kWh per vehicle produced
- Water use reduced by 7.6 gallons per vehicle produced

### Real-Time Monitoring Cuts Electricity Use

Real-time monitoring allows associates to see how much energy is being used at any time. This can help associates to identify equipment that can be turned off during breaks or between production shifts, and also help determine when production is not taking place on weekends. In addition, real-time monitoring helps associates understand how energy is being used, and be aware of which areas or processes use the most energy. The addition of this sophisticated system at the Marysville, Ohio auto plant in FY13 provides monitoring of electric use at *all* five Honda auto plants in the U.S. and Canada and also at two engine plants in the region.

### Electricity from Wind Turbines

Honda Transmission Mfg. of America, Inc. announced in January 2013 that its Russells Point, Ohio plant will be the first automotive manufacturing facility in the U.S. to obtain a substantial amount of electricity from on-site turbines. The two utility-scale turbines are anticipated to supply approximately 10% of the plant's electricity, as well as reduce CO<sub>2</sub> emissions. Output of the combined turbines will vary, but is estimated at 10,000 megawatt hours per year. The turbines are expected to be in operation in late 2013.



## Energy Reduction Efforts in FY13 cont'd

### New On-Site Consolidation Centers

The newly implemented on-site parts consolidation centers at the East Liberty, Ohio auto plant (ELP) and Anna, Ohio engine plant (AEP) have resulted in a reduction of fuel usage and CO<sub>2</sub> emissions at these two plants.

- Shuttle truck fuel reduction: 483,000 gallons/year (ELP); 108,780 gallons/year (AEP)
- Shuttle truck CO<sub>2</sub> emissions reduction: 4,915 metric tons/year (ELP); 1,114 metric tons/year (AEP)



Consolidation centers like this one, at the East Liberty Auto Plant, are reducing truck miles, emissions and fuel consumption associated with the transfer of parts from suppliers to Honda plants in North America.

## Waste Reduction Initiatives in FY13

### Reduced Waste in Cafeterias

Honda's Anna, Ohio engine plant and its Marysville, Ohio auto plant completed conversion to washable dishware in cafeterias, greatly reducing the amount of paper and other materials transported to a waste-to-energy facility. Washable dishware has now been implemented at all four of the company's manufacturing facilities in Ohio.

### Vermi Composting Decreases Landfill Waste

Honda de Mexico in FY13 entered into a partnership with an off-site vendor to begin a program for vermi (worm) composting of waste from cafeterias, associate break areas, and site-landscaping waste. The program has resulted in a 70% decrease in waste transported to landfills from Honda de Mexico. The vendor uses the composted material to grow organic produce.

### New Life for Purge Solvent

Waste solvent used to purge painting equipment in the Marysville, Ohio auto plant's bumper painting operations is now sent to an off-site facility for redistillation. The redistilled solvent is returned to the plant to once again clean painting equipment. This material previously was sent to a cement kiln where it was used to clean equipment before being used as a fuel.

### Recycling Instrument Panels at the Plant

Regrinding instrument panels at the East Liberty, Ohio auto plant allows for the recycling of nearly 300,000 pounds of material that is used to produce new instrument panels. By reprocessing this material on site, the plant has eliminated the shipping of 39 trailer loads of material to an off-site recycling facility each year.



Life Cycle Assessment

# Sales and Service

## Overview

The sales and service of Honda and Acura products requires the movement of both finished products and service parts by trucks and trains traveling millions of miles each year, resulting in the emissions of CO<sub>2</sub> and other byproducts of fuel consumption, as well as waste associated with the packaging of products and parts for shipment.

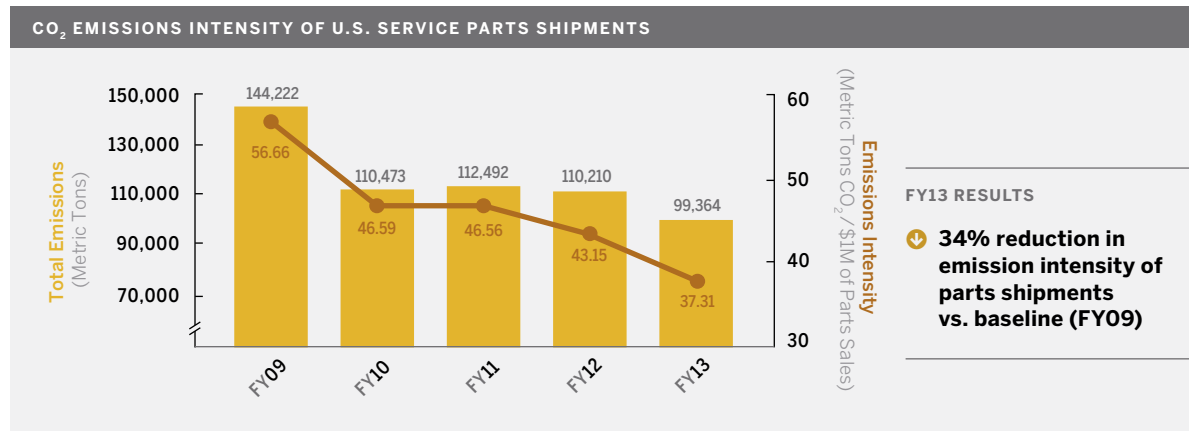
## Focus

Reducing waste and CO<sub>2</sub> emissions associated with the packaging and distribution of service parts for Honda and Acura automobile, powersports and power equipment products continues to be the focus of the company's U.S. distribution, service parts, and packaging departments.



## CO<sub>2</sub> Emissions from the Transportation of Service Parts in the United States

By increasing its efforts to use more fuel-efficient trucks, shift more cargo from truck to rail, use more efficient packing of tractor trailers, and re-engineer drive routes, Honda has endeavored to reduce CO<sub>2</sub> emissions associated with the distribution of service parts from its supplier factories to its warehouses and, ultimately, to dealerships.



### Examples of CO<sub>2</sub>-Reduction Efforts in Parts Shipping in North America



#### Modal Shift from Truck to Rail for Mexico Shipments

Through a partnership with its rail partner, Honda has increased the shift from trucks to rail for the transportation of parts between Honda's service parts suppliers in Mexico and its U.S. parts distribution centers.

924 metric ton reduction in FY13



#### Green Fleet Expansion

Honda continued replacing the 207 trucks in its daily delivery service fleet with newer, more fuel-efficient models in FY13. A total of 138 trucks have been replaced to the higher efficiency trucks.

1,829 metric ton reduction in FY13



#### Increase Shift from Truck to Rail for U.S. Warehouse Transfers

Honda continued to convert truck trailers to rail transportation on its domestic routes. Two additional routes from Chino, California to Davenport, Iowa and Loudon, Tennessee to Portland, Oregon were added to help reduce CO<sub>2</sub> emissions.

2,692 metric ton reduction in FY13



#### Long-Term Natural Gas Project

A team was established to analyze the potential of implementing natural gas delivery trucks at American Honda's parts distribution centers to further reduce Honda's environmental footprint.

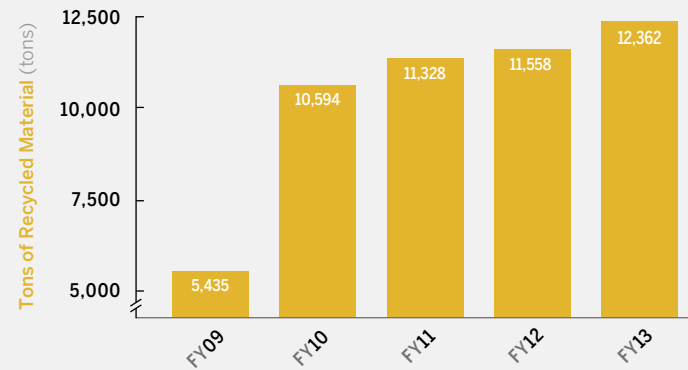


## Zero Waste to Landfill Parts Distribution Centers

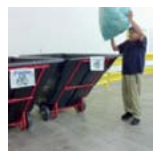
The goal of Honda's parts distribution facilities in the U.S. is to achieve zero waste to landfill. This effort to reduce, reuse, and recycle waste material from these distribution centers resulted in 12,362 tons of packaging and shipping material, comprising 95% of all waste material from parts warehouse operations, being diverted from landfill in FY13.

Honda's Chino, California, parts warehouse in FY12 became the first of nine such facilities in North America to achieve zero waste to landfill. It was joined in FY13 by the Torrance, California facility. Working with the company's waste solutions partner, Honda associates set up a program to eliminate waste to landfill and to document and validate its performance on a monthly basis. Their process is now being shared with American Honda's other parts distribution facilities in the U.S.

RECYCLING ACTIVITY AT U.S. SERVICE PARTS CENTERS



### CHINO, CALIFORNIA PARTS CENTER ACHIEVES ZERO WASTE TO LANDFILL



Associates collect corrugated and plastic packaging material and place in "tip bins."

SOLID WASTE



WET TRASH (restroom, lunchroom trash, etc.)



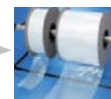
Corrugated material is baled on-site and delivered to fiber pulp mill.



Plastic material is baled on-site and delivered to plastic mill.



Corrugated material is re-pulped into corrugated lineboard and converted into corrugated boxes for resale.



Plastic is milled into plastic (non-virgin) pellets and then converted into plastic poly bags.

Wet trash is burned to spin a turbine to create steam, which enters a steam turbine which is coupled to a generator that produces 11.5 megawatts of power. 1.5 megawatts of power is used to run the plant, while the balance is sold to the local utility (Southern California Edison). Bag house processes remove 99.5% of particulate matter in the air stream down to sub-microscopic levels, eliminating any visible plume. The bottom ash is screened and metals are removed for recycling. The screened bottom ash and fly ash are mixed with cement to make concrete, which is then used at the landfill as road base.





## Packaging Reduction and Recycling Improvements

### Packaging Reductions

Honda's U.S. service parts packaging group has worked to reduce its environmental footprint by changing package designs, and increasing the use of returnable packing and shipping material. Through a focused effort between Honda's service parts suppliers and American Honda, 78 part numbers were targeted for packaging improvements in FY13. As a result 74,380 pounds of corrugated material and 103,806 pounds of wood were kept out of the waste stream in FY13.

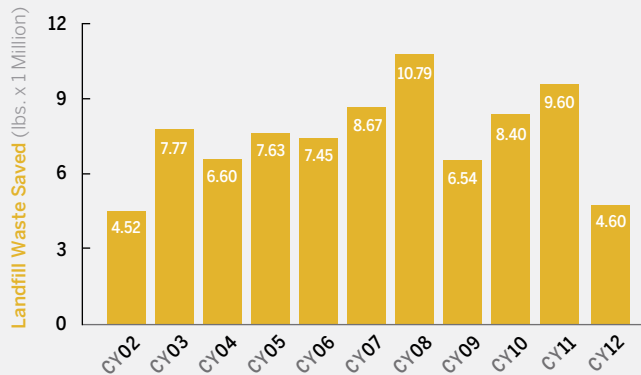
#### PACKAGING REDUCTION INITIATIVES IN FY13

Packaging changes and material reductions	74,380 pounds of corrugated material
	103,806 pounds of wood

### Pallet Recycling

Honda's North American Service Parts Packaging Operations has worked continuously to expand its pallet recycling program and has repaired and recycled nearly 82.5 million pounds of wood since the program's inception in 2002, including 84,000 pallets (4.6 million pounds of wood) diverted from landfills in FY13.

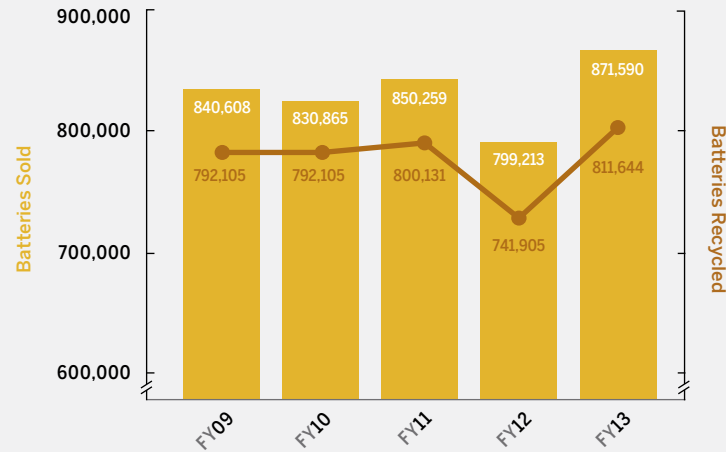
#### PALLET RECYCLING



### Service Parts Recycling

In partnership with its U.S. Honda and Acura automobile dealers, American Honda has developed a continually expanding service parts recycling program. A variety of service parts are recycled, including batteries, wheels, and other parts containing precious metals, glass, copper, and plastic.

#### BATTERY RECYCLING IN THE U.S.



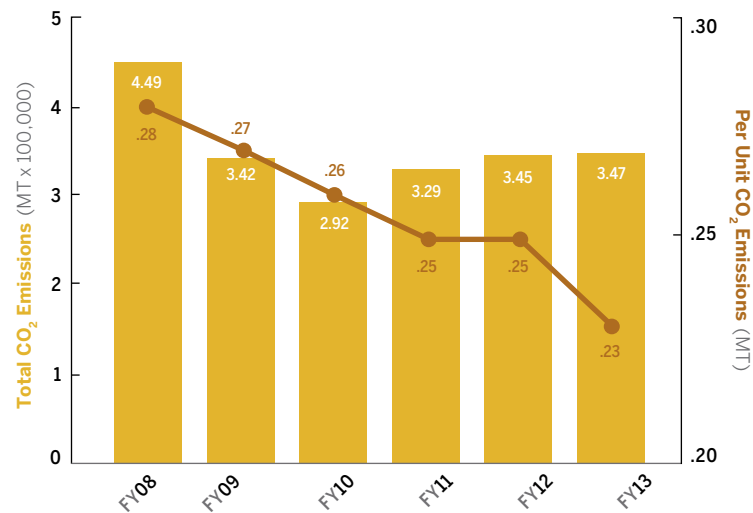


## Sales and Distribution of Honda Products

Honda is committed to delivering finished products using the most efficient transportation methods to help minimize the environmental impact of servicing Honda products, most importantly CO<sub>2</sub> emissions. Since FY08, Honda has reduced the CO<sub>2</sub> emissions intensity of finished product shipments in North America by 17.9%.

### Modal Efficiency

CO<sub>2</sub> EMISSIONS INTENSITY OF FINISHED PRODUCTS SHIPMENTS



**FY13 RESULTS**

**Total Emissions:**

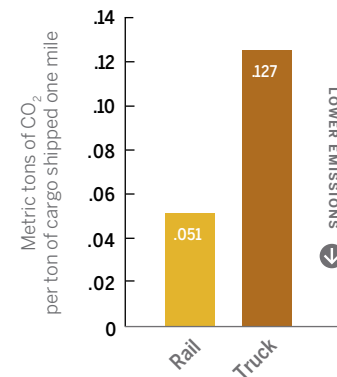
⬆️ **0.6% increase vs. previous year**

**Per Unit:**

⬇️ **17.9% decrease vs. baseline (FY08)**

CO<sub>2</sub> EMISSIONS INTENSITY OF RAIL VS. TRUCK TRANSPORT

The vast majority of Honda and Acura automobiles are moved by train. In FY13, 80.5% of all Honda and Acura automobiles manufactured in the U.S. or arriving at U.S. ports were transported by train, up from 79.5% in FY12.



#### More Fuel-Efficient Trucks

100% of American Honda's U.S. fleet of trucks are EPA SmartWay Transport certified up from 95% in FY12. In addition, beginning in 2012, trucks with electric power take off were added to reduce fuel consumption and CO<sub>2</sub> emissions.



#### Honda Employs Auto-Max Railcars

These tri-level railcars are able to carry more vehicles in a single load to reduce energy consumption and emissions from the transport of finished products. 24% of vehicles moved by rail in FY12 were transported on Auto-Max cars, down from 37% in FY12, due to increased product shipments and limited supply of railcars.



## Honda and Acura “Green Dealer” Program



American Honda’s “green dealer” program was launched in FY12 to help independently owned and operated Honda and Acura automobile dealers in the U.S. quantifiably reduce their environmental impact.

The program gives Honda Environmental Leadership and Acura Environmental Leadership Awards to dealers who have significantly reduced their impact on the environment, starting with a minimum 10% reduction in total energy use at their dealerships.

The program offers three achievement levels:

LEVEL	REQUIREMENT
<b>Silver</b>	<ul style="list-style-type: none"> <li>10% reduction in total energy use</li> <li>Develop and implement a comprehensive recycling program</li> <li>Develop a water use reduction plan</li> </ul>
<b>Gold</b>	<ul style="list-style-type: none"> <li>Silver-level requirements (as above)</li> <li>Continuous improvements in reduction and conservation goals above the Silver level</li> <li>30% additional reduction in total energy usage</li> <li>Consider renewable solar energy options</li> </ul>
<b>Platinum</b>	<ul style="list-style-type: none"> <li>LEED certification of facility by U.S. Green Building Council; or achieve “Electric grid neutral” facility (produces as much energy locally as it consumes on an average basis)</li> </ul>

The company uses a third-party evaluator to conduct environmental audits of participating dealers and recommend strategies for reducing their energy use.

In FY13, 40 dealers have enrolled in the program, and 19 have received the award. This year, Honda and Acura “green dealer” award recipients continue to expand, increasing from one to three Honda Platinum, zero to two Honda Gold, and six to 10 Honda Silver recipients. Acura dealers receiving “green dealer” awards have also increased, from zero to one Acura Gold, and maintained three Acura Silver award recipients from FY12 to FY13.

Dealers who have earned the Honda or Acura Environmental Leadership Award:

**HONDA — PLATINUM LEVEL**

<b>Honda of Burleson</b>	Burleson, TX
<b>Headquarter Honda</b>	Clermont, FL
<b>Underriner Honda</b>	Billings, MT

**HONDA — GOLD LEVEL**

<b>Autofair Honda</b>	Manchester, NH
<b>University Honda</b>	Davis, CA

**HONDA — SILVER LEVEL**

<b>Continental Honda</b>	Countryside, IL
<b>Diamond Honda</b>	City of Industry, CA
<b>Joe Morgan Honda</b>	Monroe, OH
<b>Klein Honda</b>	Everett, WA
<b>Rossi Honda</b>	Vineland, NJ
<b>Rock Honda</b>	Fontana, CA
<b>Saratoga Honda</b>	Saratoga Springs, NY
<b>Sierra Honda</b>	Monrovia, CA
<b>Vatland Honda</b>	Vero Beach, FL
<b>Voss Honda</b>	Tipp City, OH

**ACURA — GOLD LEVEL**

<b>Northeast Acura</b>	Latham, NY
------------------------	------------

**ACURA — SILVER LEVEL**

<b>Acura of Peabody</b>	Peabody, MA
<b>McDaniels Acura</b>	Columbia, SC
<b>Norm Reeves Acura of Mission Viejo</b>	Mission Viejo, CA

In addition to the dealers who received the Environmental Leadership Award for their quantifiable energy reductions, a number of Honda and Acura dealers have independently taken steps to address their environmental impact by:

- replacing lighting with low-energy lamps;
- installing motion sensors that turn lights off when not in use;
- replacing older air conditioning and heating systems with more energy-efficient equipment;
- installing solar panels;
- adding rainwater collection systems, and planting native vegetation to reduce irrigation water use.



Life Cycle Assessment

# In-Use

## Overview

Generally, the largest environmental impacts of Honda products come from the combustion of fuel during customer use, primarily greenhouse gas and smog-forming exhaust emissions. In the case of automobiles and motorcycles, the environmental impact is measured on a per-distance-traveled basis, and in the case of power products and marine, they are measured on a per-hour-used basis.

## Focus

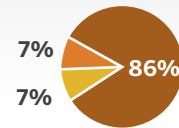
Honda is strongly focused on advancements to the fuel efficiency of its vehicles as the most effective means of reducing greenhouse gas emissions that contribute to global warming and reducing the consumption of non-renewable fossil fuels.

Automobiles

Fuel Efficiency

Estimates made using the Honda Life Cycle Assessment (LCA) Data System indicate that approximately 86% of CO<sub>2</sub> emissions from its automobiles occur during customer use.

SOURCES OF AUTOMOBILE LIFE-CYCLE GHG EMISSIONS<sup>1</sup>



- **86%** Product In-Use
- **7%** Production
- **7%** Other Factors (raw materials, distribution, procurement, service and disposal)

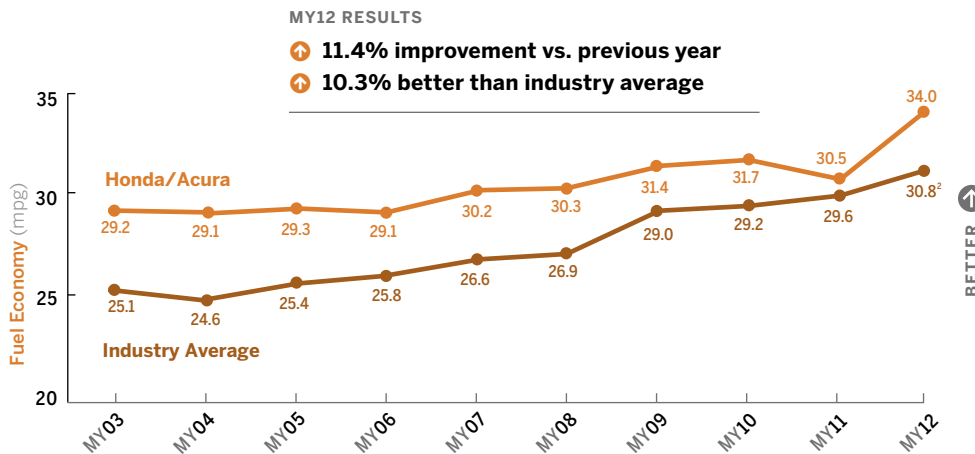
<sup>1</sup> Results are Honda estimates based on automobile life cycle greenhouse gas data collected within North America for CY08.

Corporate Average Fuel Economy (CAFE) and EPA "Window-Label" Fuel Economy

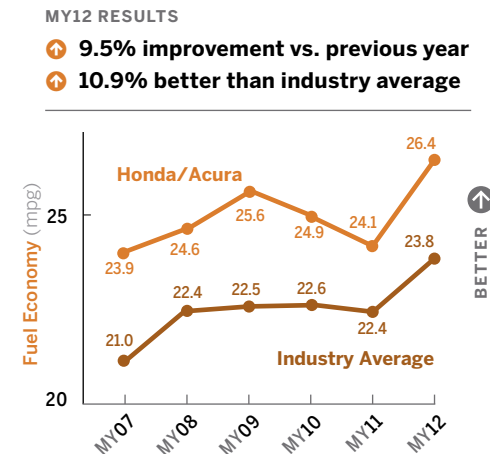
Corporate Average Fuel Economy (CAFE), as determined by the U.S. Department of Transportation, is a regulatory construct that uses a less energy-intensive measure of vehicle fuel economy compared to the U.S. EPA (window label) fuel economy measure for new vehicles (see next page). CAFE also incorporates numerous other factors, including credits for alternative and flex fuel vehicles. Recognizing that CAFE values do not accurately reflect real-world fuel economy, the U.S. government developed a series of adjustment factors to bring CAFE results more in line with customers' real-world experience. Recently, EPA added additional test procedures (known as the "five-cycle test") to further improve the accuracy of "window label" fuel-economy values.

Note: The large increase for Honda/Acura CAFE in MY12 was due in part to a longer-than-usual model year for Civic (18 months versus the more typical 12 months) which gave Civic, one of the most fuel-efficient models in the Honda vehicle fleet, a disproportionately high share of the sales-weighted fleet mix.

U.S. CAR AND LIGHT TRUCK FUEL ECONOMY (CAFE)<sup>1</sup>



U.S. FLEETWIDE CO<sub>2</sub> – ADJUSTED FUEL ECONOMY<sup>3</sup>



<sup>1</sup> The U.S. Environmental Protection Agency (EPA) calculates "fuel economy" by the amount of miles traveled per gallon of gasoline for cars and light trucks, and calculates a sales-weighted Corporate Average Fuel Economy (CAFE) number for both passenger cars and light trucks. The combined values shown here are for comparison purposes only.

<sup>2</sup> Industry average for model year 2012 is Honda's estimate based on each manufacturer's mid-model-year CAFE report as submitted to the NHTSA.

<sup>3</sup> Source: U.S. Environmental Protection Agency: Light-Duty Automotive Technology, Carbon Dioxide Emissions, and Fuel Economy Trends: 1975 through 2012, published March 2013

Automobiles cont'd

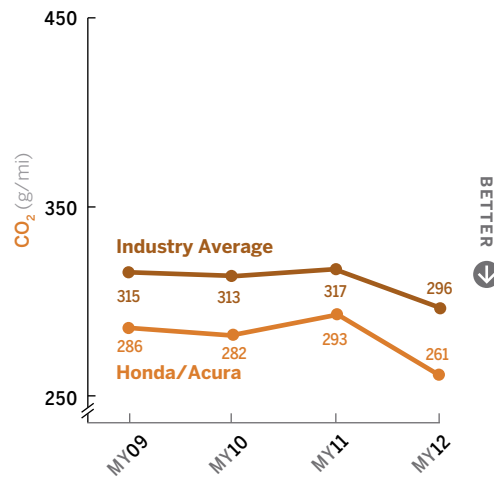
Fleetwide CO<sub>2</sub> Emissions of U.S. Automobiles

In 2012, the U.S. government began regulating vehicle greenhouse gas emissions. Because burned fuel emits CO<sub>2</sub> (approximately 19.6 pounds per gallon of gasoline), there is a close relationship between fuel consumption and greenhouse gas emissions. However, other opportunities, such as improving HVAC systems to reduce refrigerant leakage, can improve a vehicle's GHG performance independent of fuel economy. Like CAFE values, GHG emissions levels reflect the vehicle's performance over a predetermined laboratory test procedure and are used for complying with regulations. While these values are regularly assessed by the industry and government agencies, they do not reflect the real-world emissions performance of the vehicle.

U.S. FLEETWIDE UNADJUSTED COMPOSITE CO<sub>2</sub> EMISSIONS<sup>1</sup>

MY12 RESULTS

- ↓ 10.9% reduction vs. previous year
- ↑ 11.8% better than industry average

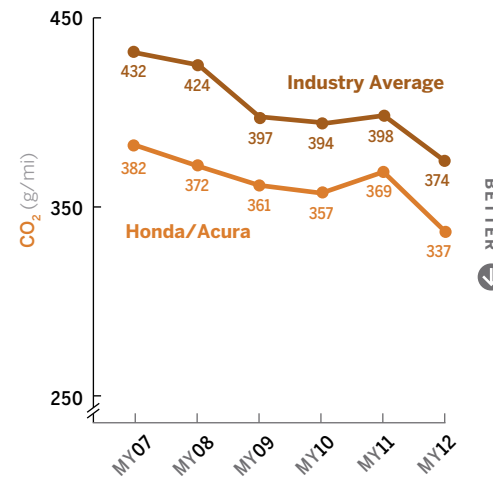


<sup>1</sup> Source: U.S. Environmental Protection Agency: Light-Duty Automotive Technology, Carbon Dioxide Emissions, and Fuel Economy Trends: 1975 through 2012, published March 2013.

U.S. FLEETWIDE ADJUSTED COMPOSITE CO<sub>2</sub> EMISSIONS<sup>1</sup>

MY12 RESULTS

- ↓ 8.6% reduction vs. previous year
- ↑ 10.8% better than industry average



While the Greenhouse Gas Emissions value is based on a laboratory test procedure, the Adjusted Greenhouse Gas value (above) reflects the vehicle's environmental performance in real-world conditions. These values are now included on new vehicle fuel-economy window labels.



The Automobile segment includes Honda and Acura brand passenger cars, minivans, sport-utility vehicles, and pickup trucks.

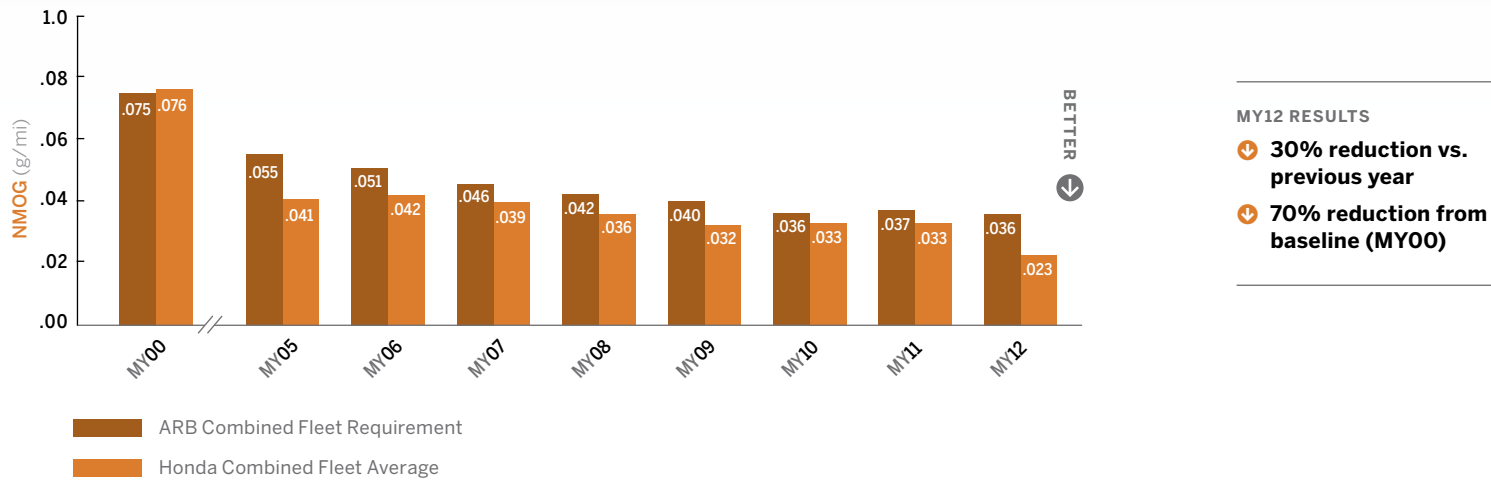


## Automobiles cont'd

### Tailpipe Emissions

Non-methane organic gasses (NMOG) tailpipe emissions are a pre-cursor to smog. The California Air Resources Board (CARB) regulates NMOG under the Low-Emissions Vehicle (1996 and later) and Low-Emissions Vehicle II (2004 and later) emissions standards. Honda has been very aggressive in reducing its fleet emissions below the LEV and LEV II standards.

HONDA FLEET AVERAGE NMOG VS. ARB FLEET REQUIREMENT (CALIFORNIA)



Source: NMOG reports submitted to the California Air Resources Board by Honda.

## Powersports Products

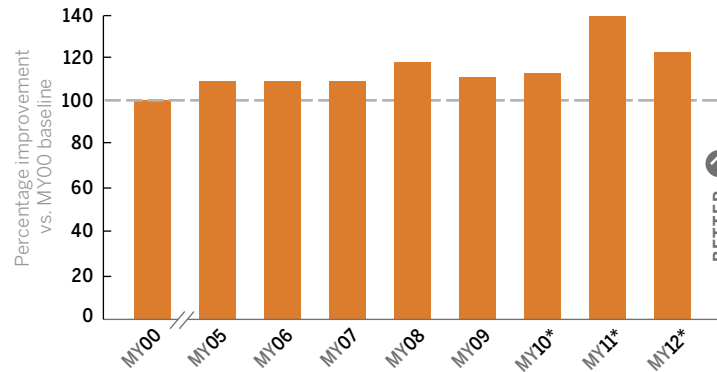
### Fuel Efficiency

Since 2000, Honda has achieved a 24% improvement in the fleet-average fuel economy of motorcycles sold in North America, primarily through the expanded use of programmable electronic fuel injection (PGM-FI) and changes in its model mix to smaller, more fuel-efficient products. The dramatic improvement in the MY11 result were mainly a result of production adjustments associated with the weakened economy.

#### FLEET AVERAGE FUEL ECONOMY IMPROVEMENT FOR MOTORCYCLES SOLD IN NORTH AMERICA<sup>1</sup>

##### MY12 RESULTS

- ⬇️ **17% decrease vs. previous year**
- ⬆️ **24% improvement from baseline (MY00)**



<sup>1</sup> Honda calculation using U.S. EPA exhaust emissions data.

\* FY00-09 were based on actual sales, and the 2010 and later data are based on production volumes. Some MY production is sold in later years (ex: a 2009 MY motorcycle that is sold new in 2011) and was omitted by the earlier method.



The Powersports Products segment includes Honda motorcycles for street, off-road, and dual-sport use; four-wheeled utility and recreational all-terrain vehicles (ATVs); and multipurpose utility vehicles (MUVs).



**Powersports Products cont'd**

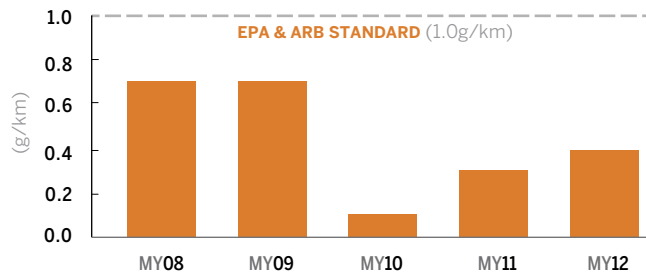
**Tailpipe Emissions**

In model year 2012, Honda substantially outperformed both U.S. EPA and CARB Tier 2 requirements for hydrocarbon (HC), nitrogen oxides (NO<sub>x</sub>), and carbon monoxide (CO) exhaust emissions. In model year 2012, Honda also outperformed both EPA and CARB requirements for evaporative emissions and fuel permeation.

**CLASS I AND II MOTORCYCLE FLEET HC EMISSIONS<sup>1</sup>**

**MY12 RESULTS**

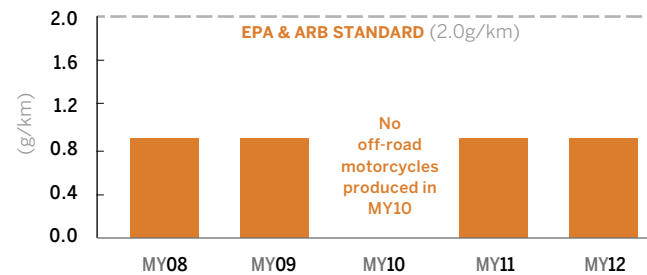
➔ **42.9% decrease from baseline (MY08)**



**OFF-ROAD MOTORCYCLE FLEET HC AND NO<sub>x</sub> EMISSIONS<sup>1</sup>**

**MY12 RESULTS**

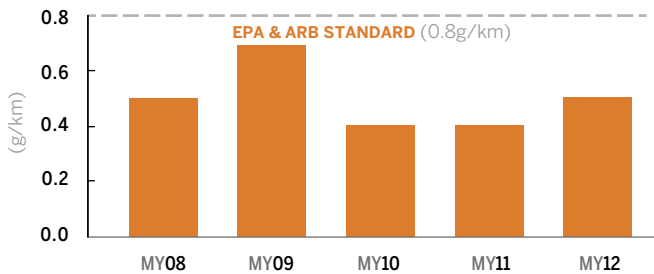
➔ **No change in baseline results (MY08)**



**CLASS III MOTORCYCLE FLEET HC AND NO<sub>x</sub> EMISSIONS<sup>1</sup>**

**MY12 RESULTS**

➔ **No change in baseline results (MY08)**

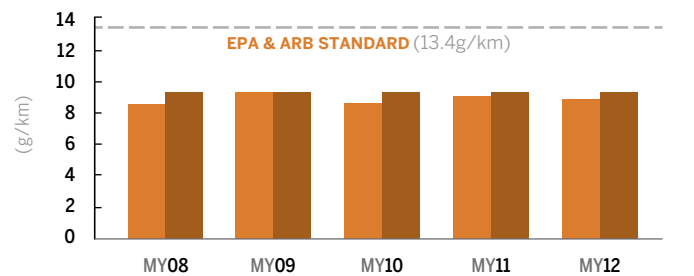


**ATV AND UTV FLEET HC AND NO<sub>x</sub> EMISSIONS<sup>1</sup>**

**MY12 RESULTS**

➔ **(ATV) 4.6% increase from baseline (MY08)**

➔ **(UTV) no change from baseline (MY08)**



<sup>1</sup> Source: Honda internal test data

## Power Equipment Products

### Criteria Air Pollutants

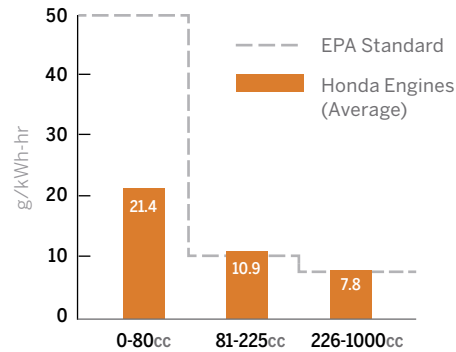
Honda achieves emissions substantially below U.S. EPA standards for 0-80cc engines due to its use of advanced, 4-stroke engine technology with multi-position carburetors. Honda's 81-225cc engines are slightly above the new standard of 10 grams/kWh which was implemented in 2012. Previously, the standard was 16.1 grams/kWh. Honda is using previously earned credits to smooth out the transition in accordance with EPA regulatory flexibilities. The last segment of Honda engines, 226-1000cc, is slightly below the more stringent 8 grams/kWh standard (implemented in 2010). Honda was able to reduce these emissions compared to last year.

### Marine

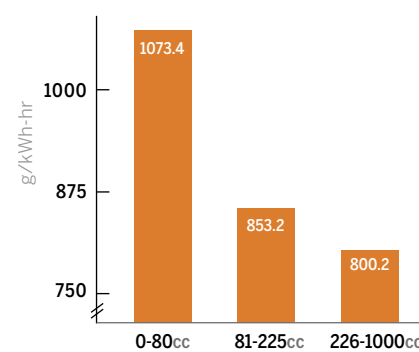
Honda achieves emissions below U.S. EPA standards for Marine Outboards due to its use of advanced, 4-stroke engine technology.



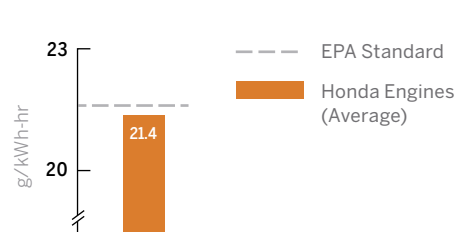
FLEET AVERAGE HC+NO<sub>x</sub> EMISSIONS OF HONDA ENGINES SOLD IN U.S. IN MY11



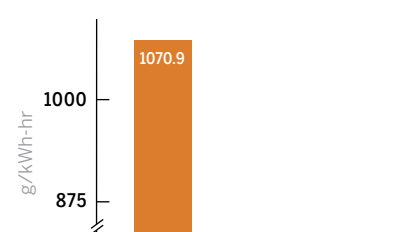
FLEET AVERAGE CO<sub>2</sub> EMISSIONS OF HONDA ENGINES SOLD IN U.S. IN 2012



FLEET AVERAGE HC+NO<sub>x</sub> EMISSIONS OF HONDA MARINE ENGINES SOLD IN U.S. IN 2012



FLEET AVERAGE CO<sub>2</sub> EMISSIONS OF HONDA MARINE ENGINES SOLD IN U.S. IN 2012



The Power Equipment segment consists of Honda lawnmowers, string trimmers, snowblowers, tillers, generators, and outboard marine engines, as well as general-purpose engines used in hundreds of applications for commercial, rental, and residential use.



Life Cycle Assessment

# End-of-Life

## Overview

The environmental impact of Honda products and service parts extends through their disposal or recycling at the end of their useful life. This includes service parts recovered by Honda and Acura dealerships during service repair and overstock parts in Honda warehouse facilities. While Honda does not directly participate in the disposal of its products, the company is working to make its products easier to recycle, while also taking a direct role in the reduction of waste associated with the disposal of Honda and Acura service parts.

## Focus

The first and most critical step is a product design that enables efficient dismantling for recycling and reduces the use of harmful substances. Additional efforts include projects aimed at increasing the quantity of recycled and remanufactured parts and materials, and more environmentally responsible means of disposing of unused parts and materials.



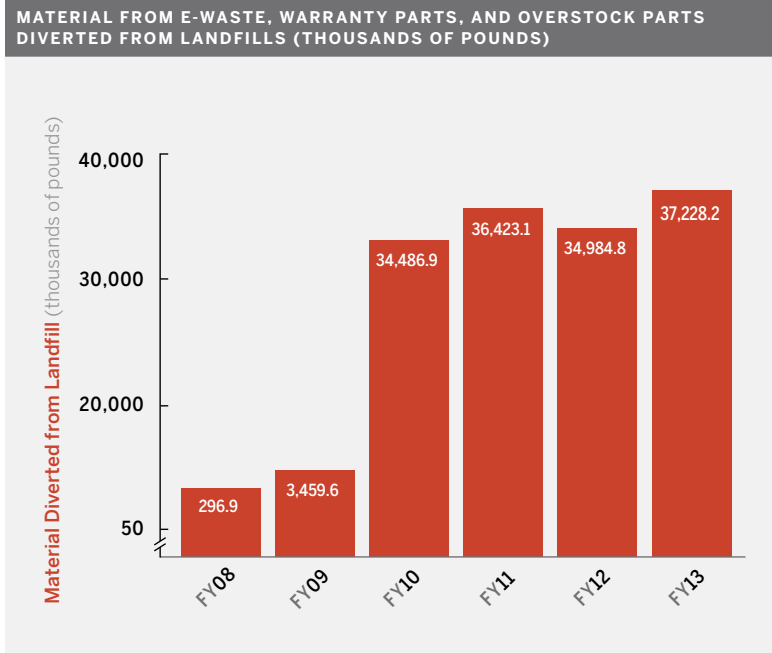
## Recycling of Warranty and Overstock Service Parts and Electronic Waste (E-Waste)

Honda's program for recycling overstock service parts utilizes the same procedures in place as for regulated materials, such as universal or hazardous waste. Codes are assigned and used as filtering criteria to create lists that identify which parts will be destroyed and in what manner. Items that require special handling are segregated and delivered to qualified regulated materials recycling vendors.

A similar process is utilized for recycling parts replaced under warranty. For parts that do not require further failure analysis, the parts are directed back to Honda and are then placed in their respective scrap collections. Due to transportation concerns, no regulated parts are returned by dealerships to Honda.

American Honda's Service Parts Division maintains rigorous procedures for the disposal of electronic waste (e-waste). Service parts are evaluated at the time of procurement to determine whether they qualify as e-waste, as OSHA hazards, or as "transportation dangerous" material regulated by the U.S. Department of Transportation. Nearly 5% of service parts have been coded for this special handling.

**FY13 Result:** More than 37.2 million pounds of recyclable material from electronic waste, warranty parts, and overstock service parts were diverted from landfills.

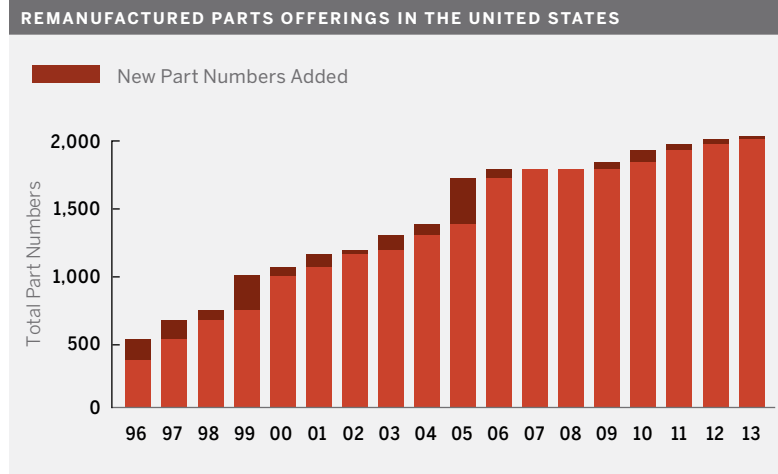




## Expansion of Honda's Remanufactured Parts Program

Remanufacturing parts at the end of their useful life removes them from the waste stream and reduces the amount of natural resources required to create new parts. Over the last two decades, Honda has greatly expanded the number of remanufactured parts it produces.

**FY13 Result:** Honda introduced 17 new remanufactured parts offerings.



## Aluminum and Steel Wheels

Honda has operated a core charge program in the U.S. for aluminum wheels, and this past year, added steel wheels to this program. The charge to the Honda or Acura dealer for each new wheel purchased from Honda differs by construction material and is recoverable when the parts are returned.

**FY13 Result:** Honda collected nearly 47,877 aluminum and steel wheels under the program.

## Post-Industrial Bumper (PIB) Recycling

Honda recycles post-industrial bumpers (PIBs) — scrap bumpers generated in the manufacturing process — through third-party scrappers. PIBs coming from five Honda plants in the U.S. and Canada are being reformulated and reused in Honda's own supply chain. Reformulated PIB pellets are turned into mud and splash guards.

**FY13 Result:** Honda recycled 620,858 pounds of post-industrial bumpers.

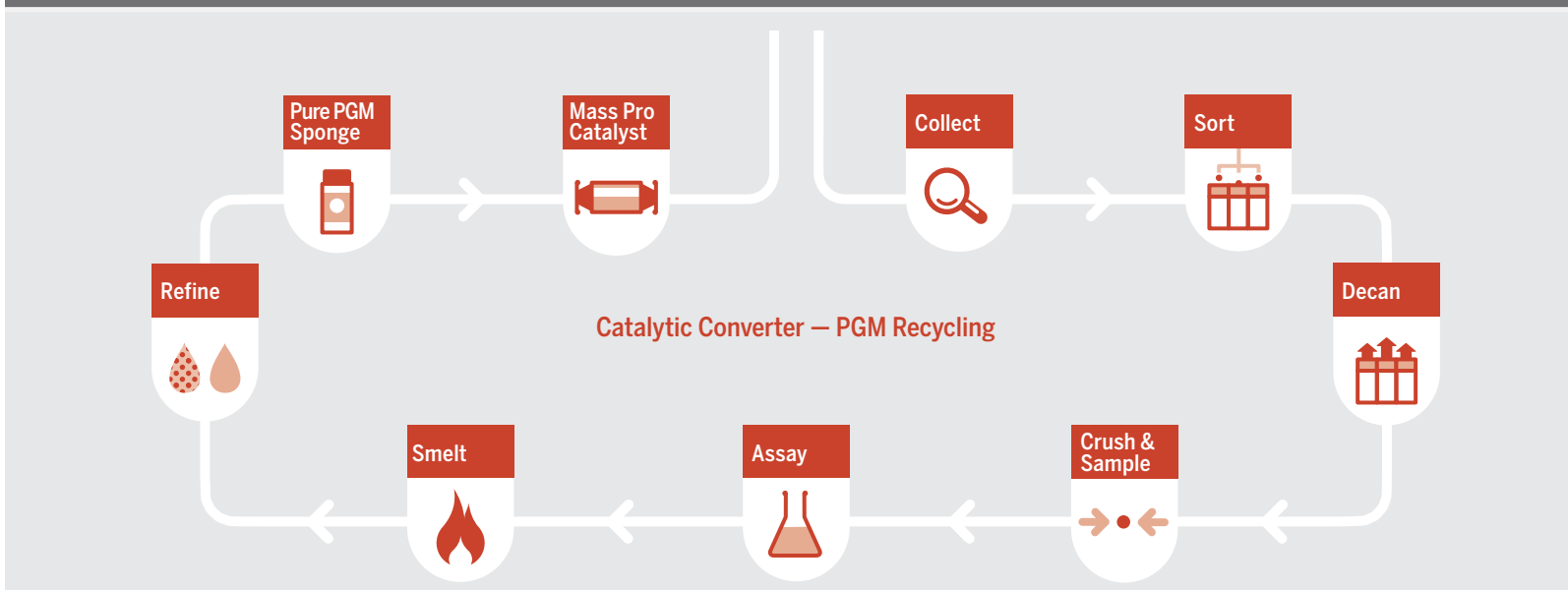
## Catalytic Converters

Catalytic converters, which are used for emissions control on all vehicles, contain platinum group metals (PGMs), which are extremely valuable. Recycling catalysts prevents these precious metals from ending up in landfills and reduces the need to mine PGMs. Honda began recycling catalytic converters in December 2002. In FY12,

Honda ceased collections through warranty replacements and instead implemented a core charge program, similar to the company's aluminum wheel program.

**FY13 Result:** Honda recycled 519,852 catalytic converters.

### CATALYTIC PGM RECYCLING — BASIC PROCESS



## Recycling Rare Earth Metals from Hybrid Batteries

Honda recycles nickel-metal batteries from its hybrid vehicles in North America. The batteries are sent to a specialized recycling plant in Japan. In FY13, Honda established the world's first process to reuse rare earth metals extracted from nickel-metal hydride batteries for use in new nickel-metal hydride batteries, reducing the need to

mine for scarce natural resources. Honda also extracts rare earth metals from various used parts.

**FY13 Result:** Honda recycled 36,987 nickel-metal batteries.



Life Cycle Assessment

# Administration

## Overview

Honda operates dozens of offices and warehouse facilities in North America to support R&D, Manufacturing, and Sales (distribution, marketing, service, and finance) operations in the region.

## Focus





Honda continually seeks out means of improving energy efficiency, water use, and eliminating waste from its administrative operations and has been a leader in the area of “green building” activities.



## Green Building Initiatives

Over the past two decades, Honda has been incorporating sustainable concepts into facility construction and operation, including the use of locally harvested and manufactured construction materials, cool roofs, dual-paned glass, high-recycled-content materials, and energy-efficient lighting. Honda now has 12 LEED-certified green buildings in North America, the most of any automaker operating in the region.






### Honda New, Existing, and Green Buildings in North America

FACILITY	CERTIFICATION	DETAILS
 <p><b>Honda Financial Services</b> Southeast regional office</p>	<p>Gold Jun 2012</p>	<p>82% of construction debris (47 tons) was diverted from landfill.</p> <p>Low mercury lamps in all light fixtures result in a 40% reduction in energy use for lighting.</p> <p>Forced-air hand dryers in restrooms reduce carbon footprint for this activity by 70%.</p> <p>90% of the facility's equipment meets Energy Star requirements.</p> <p>A "green cleaning" program reduced exposure to potentially harmful chemical compounds.</p>
 <p><b>Honda Engineering America</b> Powertrain Division</p>	<p>Silver version 2.2 Jul 2011</p>	<p>Low-flow toilets and urinals, energy-efficient lighting controls, and cool roof materials.</p> <p>Sustainable HVAC system features including enhanced equipment commissioning and refrigeration management.</p>
 <p><b>Honda Canada</b> Headquarters facility</p>	<p>Gold Jul 2011</p>	<p>North-south building orientation, energy-efficient underfloor air-distribution system, heat-reflective white roof, and on-site storm water treatment using bioswales.</p> <p>Efficient water management system reduced potable water use by 44% (compared to previous facility).</p> <p>Use of locally sourced materials and 75% reuse or recycling of waste materials during construction phase.</p>
 <p><b>Honda Manufacturing of Indiana</b> Welcome Center</p>	<p>Certified Nov 2010</p>	<p>The first LEED-certified building in Indiana's Decatur County, the nearly 23,000-square-foot facility purchases 100% green power, utilizes wood certified by the Forest Stewardship Council, and provides designated parking for fuel-efficient vehicles.</p>





**Green Building Initiatives** cont'd

Honda New, Existing, and Green Buildings in North America			
FACILITY		CERTIFICATION	DETAILS
	<b>Honda R&amp;D Americas</b> Marine Engine Research Facility Grant-Valkaria, FL	Gold Mar 2010	5% of the two-acre site (adjacent to Intracoastal Waterway) converted to permanent conservation easement to help protect and preserve local wetlands and wildlife.  Reduced area covered by invasive/exotic species and replaced them with beneficial native vegetative species.
	<b>Honda Financial Services</b> Mid-Atlantic Facility Wilmington, DE	CI Gold Oct 2009	Ultra-low-flow lavatory and kitchen fixtures, high-efficiency fluorescent fixtures, and more than 90% of the office appliances are Energy Star rated.
	<b>American Honda</b> Northwest Regional Facility Gresham, OR	Gold 1999 Platinum Jun 2008	First new mixed-use industrial building in the United States to earn Gold certification.  First LEED Platinum-certified existing building in the automobile industry.  Rainwater harvesting, sensor-controlled lighting, passive heating system, and air conditioning system powered in part by roof-mounted wind turbines.  48% more energy efficient than is required by Oregon's Energy Code.
	<b>Honda Aircraft Co.</b> World Headquarters Greensboro, NC	Gold Dec 2008	Uses steel wall panels with almost 35% recycled content, precision cut at the factory so that no waste was generated at the job site.  Low-flow toilets and urinals, infrared sensor faucets, and landscaping with native species and plants with low water needs.
	<b>American Honda</b> Midwest Consolidation Center Troy, OH	Gold Apr 2008	Reflective roof and energy-efficient lighting.  Second-floor mezzanine constructed from wood certified by the Forest Stewardship Council.



**Green Building Initiatives** cont'd

Honda New, Existing, and Green Buildings in North America

FACILITY	CERTIFICATION	DETAILS
	<p><b>American Honda</b> Data Center Longmont, CO</p>	<p>Silver version 2.2 Apr 2008</p>
	<p><b>Honda R&amp;D Americas</b> Central Plant Raymond, OH</p>	<p>Gold Apr 2008</p>
	<p><b>Honda R&amp;D Americas</b> Acura Design Studio Torrance, CA</p>	<p>Gold Mar 2008</p>



## Energy, Emissions, and Waste Reduction Efforts within Honda Offices

### United States

Honda's regional parts distribution centers in Chino, California, French Camp, California, and Windsor Locks, Connecticut have each earned a U.S. EPA Energy Star award for energy-efficient operations.

In addition, American Honda completed energy reduction projects at its Alpharetta, Georgia parts center (Lighting), Alpharetta, Georgia power equipment sales headquarters (Lighting), Ann Arbor, Michigan emissions lab (HVAC), Irving, California training center (HVAC), and Troy, Ohio parts consolidation center (HVAC).

### Honda Solar Cells In-Use at Honda Performance Development

In 2011, Honda installed its largest commercial solar-cell demonstration project, an 100-kilowatt, 800-cell array, at the California headquarters of Honda Performance Development, Inc. The Honda Soltec solar cells power several areas of the race engineering company's campus and in FY13 produced 183,050 MWh of electricity, reducing CO<sub>2</sub> emissions by approximately 61 tons.



Honda CIGS thin-film solar cells installed on the roof and carport of Honda Performance Development in Santa Clarita, California.

### Fuel Cell Installation on Torrance Campus

American Honda installed a one megawatt fuel cell system on the Torrance campus. These clean natural gas fed fuel cells produce only 843 pounds/MWh of CO<sub>2</sub> per megawatt of power — 18% to 25% less than the local average for power purchased through the grid. The system is expected to produce 20% of the electricity consumed at the campus and is projected to reduce CO<sub>2</sub> emissions by 2.85 millions pounds.

The system will also save an average of 3.25 million gallons of fresh water each year, which the local utility would need to purchase to produce an equivalent amount of electricity.



A new stationary fuel cell system installed in March 2013 on the Torrance, Calif., campus of American Honda will produce one megawatt of clean, low-CO<sub>2</sub> energy.

### More Energy-Efficient Computing Equipment

Honda's Information Services continued efforts to consolidate, eliminate, and upgrade computing equipment and servers throughout North America and to move to more energy-efficient computing equipment. Although the overall number of the platforms and power load at the Honda Data Center continued to grow, power use was reduced by 33,594 kWh in FY13 versus the previous year, while CO<sub>2</sub> emissions from computing activity was reduced by 23.1 metric tons. This savings was primarily due to two major consolidation and upgrade efforts:

- The Lotus Notes project at American Honda helping to eliminate 63 older Lotus Notes Domino servers located at 23 disparate locations with 10 newer, more energy-efficient servers in a single data center.<sup>1</sup>
- The continued decommissioning and virtualization of many of its older servers in decreased energy requirements and CO<sub>2</sub>.<sup>1</sup>

Additionally, American Honda began refreshing personal computers throughout North America with newer efficient, Energy Star-rated technology. This helped eliminate an additional 32 metric tons emission of carbon dioxide and reduced power utilization by an approximate 46,469.9 KWh in FY13.

<sup>1</sup> CO<sub>2</sub> reduction calculated using the U.S. EPA Power method eGRID 2010 V1.1, updated November, 2012.



---

## Energy, Emissions, and Waste Reduction Efforts within Honda Offices cont'd

---

### United States (cont'd)

#### Waste Reduction

Reduce, Reuse, and Recycle continues to be American Honda's working goal and mission as it relates to office and warehouse waste. American Honda's headquarters in Torrance, California has earned recognition for the California Waste Reduction Award Program for thirteen consecutive years. American Honda has also improved its environmental information reporting methods to ensure that information is collected, shared, and analyzed in a timely and accurate manner.

During the past year, American Honda has expanded its recycling program to recycle materials that were previously thrown away, including plastic bags, plastic stretch wraps, plastic packaging materials, and broken plastic desk accessories. In addition, we have also increased our donations and efforts to reuse as many materials and as much equipment as possible, including Styrofoam peanuts, plastic bubble packaging, and cardboard. Lastly, American Honda decreased its copier paper use by 3.5% from CY11 to CY12.

### Canada

Honda Canada was awarded the Donald Cousens Conservation and Environmental Leadership Award and chosen as a leader in environmental conservation and sustainability in 2012 by the Markham Board of Trade because of CH's numerous efforts to reduce its environmental impact.

#### Energy and CO<sub>2</sub> Emissions

Honda Canada's CO<sub>2</sub> emissions from electricity and natural gas consumption were reduced by 30%, compared to the previous calendar year. This reduction was primarily due to lighting control practices. At the National Office, starting from February 2012, 44,500kwh per month was saved by turning 40% of the lights off in Building B (training) and 50% off in Building C (warehouse), and in Building A where the light output was reduced to 50% from 70% by dimmable ballasts. Also the lights for Building A are now on 100% motion control.

#### Waste Reduction

Honda Canada's Green Office Task Force volunteer group initiated several waste reductions from its national office, such as collecting reusable items, and discarded holiday and greeting cards. They were sent to specific organizations to be recycled. Also, as a result of a paper cup reduction initiative, currently almost a half of the total number of associates working in the national office use reusable cups for coffee and tea.



## Associate Engagement

Honda encourages its associates to propose their own initiatives for reducing the company's environmental impact. The results can be seen in small and large ways throughout our operations. From algorithms for reducing energy use in manufacturing to double-sided printing, associates come together through annual competitions as well as informal groups to develop environmental initiatives.

### The Cartridge Family Goes Green



At this year's annual "New Honda Circles" competition, a team of associates from Alpharetta, Georgia developed a solution to improve printing efficiency at their location. The associates discovered that no universal recycling protocol was in place for used printer cartridges, and the location was dealing

with a continued lack of available ink when the cartridges ran out. The associates gathered and analyzed data from the printers. By partnering with a local company, the team implemented a cartridge-recycling program resulting in a 100% improvement in the recycling of printer cartridges plus an overall reduction in the cost of printing supplies by 25%.

### Green Up Your Act



Associates in Torrance, California discovered the current U.S. Honda dealer network needed a coordinated strategy to reduce waste from six specific products: cardboard, aluminum cans, paper, plastic bottles, light

bulbs, and small batteries. The team developed Green Up Your Act, a program that included education, testing, and tracking results from ten sample dealerships. Green Up Your Act exceeded recycling targets and received such a positive response that it was implemented at dealerships nationwide. Honda can now track recycling efforts, divert additional waste from landfills, and save dealers money.

### Divide & CONQUER! To Save Space and Eliminate Waste

In their effort to eliminate cardboard waste and save space, a team of associates from Davenport, Idaho presented a plan called Divide & CONQUER! The program analyzed the wasted space in their parts facility, spurring the team to develop a program dividing large 24-inch storage bins into three segments. Through this program, bins would now hold three different parts. The simple yet effective solution was approved by management and has been implemented to decrease the amount of bin usage by two-thirds, reducing cardboard waste and making the stocking and picking of parts more efficient.

### A Step in the Right Direction

While Honda's zero-waste-to-landfill Indiana automobile plant recycles anything and everything, one associate determined a specific product currently not part of the recycling mix — shoes. Associate Rick Simon noticed that the safety/steel-toe boots worn by workers at the plant were not being recycled and proposed to management the need to make this happen. Upon the program's approval, each week a truck collects worn shoes to be recycled and delivered to local Goodwill stores for sale or to be donated to those in need. The program has expanded to include the recycling of shoes beyond work boots and collects 50 pounds of shoes per month.



## Environmental Business Innovation

### Environmental Business Development

Honda's Environmental Business Development Office (EBDO) was created in 2011 to explore new avenues for advancing alternative-energy products and technologies and supporting the broader adoption of alternative-fuel vehicles. EBDO focuses on energy sustainability and the reduction of CO<sub>2</sub> emissions that contribute to global climate change through innovations for vehicles, homes, factories, and offices. In FY13, EBDO undertook several significant initiatives designed to further advance Honda's environmental technology.

### Partnership with SolarCity Makes Solar Power Affordable for Honda and Acura Customers, Dealers

In FY13 Honda entered into a partnership with SolarCity, the nation's largest residential solar installer, to make solar power more affordable and available to Honda and Acura customers in the U.S., providing a cleaner source of electricity at a lower cost than utility-supplied power. The partnership, which is aimed at addressing global climate change by reducing CO<sub>2</sub> emissions from home, business, and transportation energy use, established a \$65 million investment fund to finance solar projects to assist Honda and Acura customers and dealers and other qualifying homeowners with the initial cost of solar power installation.

The investment fund addresses a pervasive obstacle to the broader adoption of solar power: the high initial investment associated with installing solar power. Through the partnership, the first for any automaker, customers and dealerships will be able to install solar power with little or no upfront cost, depending on their choice of plans. Customers will be given a choice to pre-pay for their solar electricity or make a monthly payment that will be lower than the cost of their current utility bill, with insurance, repairs, and monitoring service included.



Honda, in partnership with SolarCity, is helping provide solar power to Honda and Acura owners and dealerships at a low cost while also addressing global climate change.





## Environmental Business Innovation cont'd

### Honda Smart Home US Will Showcase Low-Carbon Lifestyle



In April 2013, the company broke ground on the Honda Smart Home US, a showcase for environmental innovation and renewable energy-enabling technologies that demonstrate Honda's vision for sustainable, zero-carbon living and personal mobility, including the use of solar

power to charge a Honda Fit EV battery electric vehicle.

Located on the campus of the University of California, Davis, the hi-tech sustainable home will demonstrate an approach to meeting the state of California's goal of requiring all new residential construction to be "zero net energy" by 2020. It is expected to produce more energy than it consumes, using less than half of the energy of a similarly sized new home in the Davis area for heating, cooling, and lighting.

The Honda Smart Home US will also give its occupants comprehensive control over all home systems, allowing the residents to remotely and continually monitor and adjust all aspects of energy use in real time.



The Honda Smart Home US, a concept for sustainable, zero-carbon living and personal mobility, broke ground on the campus of UC Davis in April 2013.

Among the many technologies that will be applied to the Honda Smart Home US:

- **Solar Power and "PV-to-EV" Charging**

A photovoltaic (PV) system will provide the energy for the home and for daily commuting in an all-electric vehicle like the Honda Fit EV. The zero net energy home will generate, on average, more electricity from on-site renewable power sources than it will receive from its electric utility provider. The system will facilitate direct PV-to-vehicle DC battery charging and will substantially improve charging efficiency by reducing losses associated with DC-to-AC and AC-to-DC conversion. "PV-to-EV" charging will decrease CO<sub>2</sub> emitted in the life cycle of an electric vehicle by avoiding the carbon associated with grid electricity production.

- **Honda Energy Management System**

The Honda Energy Management System introduces a smart-grid technology that will actively manage energy use and communicate with the homeowner and utility provider, allowing the home to maximize its energy efficiency while responding to the needs of the electrical grid, thereby minimizing the impacts of solar generation and electric vehicle charging on the utility grid.

- **High-Efficiency HVAC (heating, ventilation, and air conditioning) and Lighting System**








UC Davis energy research centers will design high-efficiency, cost-effective solutions to major home energy loads. UC Davis researchers will explore new methods for geothermal heating and cooling, and a new circadian color control logic LED lighting system to improve quality of life while reducing energy consumption.

Completion of construction is expected by early 2014.

## Environmental Community Activities

**OVERVIEW:** Honda is always looking for ways to make positive contributions to the communities where it does business, including helping preserve and protect the local environment.

**FOCUS:** Honda supports a broad range of community-based environmental education, preservation, and restoration efforts, in the form of corporate charitable giving, foundation giving, in-kind contributions, and company support of volunteer work by Honda associates who take an active role in their communities.

Environmental Education	
ORGANIZATION	FOCUS OF INVOLVEMENT
<p><b>Alabama PALS (People Against A Littered State)</b> Montgomery Alabama USA <a href="http://www.alpals.org">www.alpals.org</a></p>	<p>A partnership of state and local governments, civic groups, law enforcement, businesses, and industry aimed at educating and fighting against littering.</p> <p></p>
<p><b>Aquarium of the Pacific</b> Long Beach, California USA <a href="http://www.aquariumofpacific.org">www.aquariumofpacific.org</a></p>	<p>American Honda provided its CIGS thin-film solar panels technology to help power the new June Keyes Magellanic Penguin habitat and reduce its dependence on the grid. These panels at the Aquarium of the Pacific are the first public demonstration of Honda's thin-film solar panels in the U.S. The 11-kilowatt system provides a reliable supply of clean energy that is expected to reduce the Aquarium's reliance on grid-supplied electricity by more than 14,000 kilowatt hours per year — equivalent to the approximate annual usage of an American household. Honda also provides a marine engine used to power the Aquarium's animal collection boat.</p> <p> </p>
<p><b>Aullwood Audubon Center</b> Dayton, Ohio USA <a href="http://aullwood.center.audubon.org">http://aullwood.center.audubon.org</a></p>	<p>Aullwood is an environmental education center in western Ohio whose goal is to promote the protection of birds and other wildlife, and the habitats on which they depend. Honda supports the center's educational outreach to elementary school children.</p> <p></p>
<p><b>Auntie Litter</b> Birmingham, Alabama USA <a href="http://www.auntielitter.org">www.auntielitter.org</a></p>	<p>Auntie Litter provides educational programs across the state to prevent littering.</p> <p></p>
<p><b>Birmingham Zoo</b> Birmingham, Alabama USA <a href="http://www.birminghamzoo.com">www.birminghamzoo.com</a></p>	<p>The Birmingham Zoo's mission it to Inspire Passion for the Natural World . . . through emphasizing Conservation, Education, Scientific Study, and Recreation in all aspects of the Birmingham Zoo's exhibit, programs, facilities, and activities.</p> <p></p>
<p><b>Boy Scouts of America — National Headquarters</b> Irving, Texas USA <a href="http://www.scouting.org">www.scouting.org</a></p>	<p>A partnership including Honda, the Boy Scouts of America, and the ATV Safety Institute has been established to provide Scouts across the U.S. with an ATV safety training program. Scouts are given the opportunity to complete ATV safety training, ensuring safe, responsible, and environmentally focused riding skills.</p> <p></p>

 FINANCIAL SUPPORT













 PRODUCT DONATION

 ASSOCIATE VOLUNTEER

 IN-KIND DONATION



## Environmental Community Activities

Environmental Education	
ORGANIZATION	FOCUS OF INVOLVEMENT
<b>Boy Scouts — Simon Kenton Council</b> Columbus, Ohio USA www.skbsa.org	Boy Scouts provides a program that builds character and provides a solid foundation to learn leadership skills. Honda supports the Council's World Conservation summer program focused on recycling, wildlife conservation, water and soil conservation, and renewable energy.  
<b>Carlsbad Educational Foundation</b> Carlsbad, California USA www.carlsbaded.org	Carlsbad Unified School District's 875 third graders learn about native habitats and how to protect them through lessons and hands-on activities including archaeological digs; ethno-botany, storm drain runoff, and erosion experiments during four annual on-site visits to the Aqua Hedionda Lagoon Foundation's Discovery Center. 
<b>Cheaha Trail Riders</b> Munford, Alabama USA www.cheahatrailriders.com	Cheaha Trail Riders is an Off Highway Vehicle non-profit group advocating the development of OHV trail systems throughout Alabama and the nation by emphasizing safety education and training in OHV related items. Honda associates helped with teaching OHV safety, organizing charity rides, and fundraising for organization.  
<b>Clean Air Champions</b> Ottawa, Ontario, Canada www.cleanairchampions.ca	Clean Air Champions' mission is to improve air quality and reduce climate change by working with high-performance athletes to educate and inspire Canadians, primarily youth, to adopt more sustainable, healthier lifestyles. 
<b>Clean Fuels Ohio</b> Columbus, Ohio USA www.CleanFuelsOhio.org	This statewide non-profit organization is dedicated to promoting the use of cleaner domestic fuels and fuel-efficient vehicles. Honda supports the organization's educational activities and its Green Fleets Program.  
<b>Earth Day Indiana Festival</b> Indianapolis, Indiana USA www.earthdayindiana.org	The festival educates people on the need and ways they can help protect the environment, conserve natural resources, and live a more sustainable lifestyle. 
<b>Earth Rangers</b> Woodbridge, Ontario, Canada www.earthrangers.com	Earth Rangers is dedicated to educating and inspiring children to Bring Back the Wild™ by protecting biodiversity and adopting sustainable behaviors. Hundreds of thousands of children are reached through interactive live animal shows in schools, at the Royal Ontario Museum, and at community events. 
<b>The Elizabeth River Project</b> Portsmouth, Virginia USA www.elizabethriver.org	Solely powered by the sun and wind, the Learning Barge serves as a floating wetland classroom where urban K-12th grade students explore, record, and analyze data while conducting fun, inquiry-based investigations focused on river ecology, green technology, geography, and eco-art. 
<b>Franklin Park Conservatory &amp; Botanical Gardens</b> Columbus, Ohio USA www.fpconservatory.org	The conservatory promotes environmental appreciation and ecological awareness for visitors from Ohio and around the world. Honda supports the conservatory's Children and Family Education Program. 












 FINANCIAL SUPPORT

 PRODUCT DONATION

 ASSOCIATE VOLUNTEER

 IN-KIND DONATION

## Environmental Community Activities

Environmental Education	
ORGANIZATION	FOCUS OF INVOLVEMENT
<p><b>Friends of Cedar Bog Nature Preserve</b> Urbana, Ohio USA <a href="http://www.cedarbognp.org">www.cedarbognp.org</a></p>	<p>Cedar Bog Nature Preserve is the largest and best example of a boreal and prairie fen complex in Ohio, with many rare plants and animals. Honda provided a matching grant to assist with educational outreach and the establishment of an endowment to support the Bog's Education Center operations.</p> <p> </p>
<p><b>Girl Scouts of Ohio's Heartland Council</b> Columbus, Ohio USA <a href="http://www.gsooh.org">www.gsooh.org</a></p>	<p>Girl Scouts offers opportunities for girls ages 5-17 to develop leadership, teamwork, and consensus building skills. Honda supports the program, <i>It's Your Planet — Love It! A Journey2Go Leadership Experience</i>. Activities and events are designed to foster a better understanding of the importance of preserving the earth's natural resources.</p> <p> </p>
<p><b>The Greening of Detroit</b> Detroit, Michigan USA <a href="http://www.greeningofdetroit.com">www.greeningofdetroit.com</a></p>	<p>Among the Greening's many projects are life science training and workshops for inner-city students, including Camp Greening; urban gardening instruction for families; a "citizen forestry" program for adult volunteers; and its original mission — tree planting. The Greening's plant projects improve blighted urban landscapes by reducing storm water runoff, cleaning toxic soil, and improving air quality through a process known as dendroremediation.</p> <p></p>
<p><b>Jane Goodall Institute of Canada</b> Toronto, Ontario, Canada <a href="http://www.janegoodall.ca">www.janegoodall.ca</a></p>	<p>This institute supports wildlife research, education, and conservation and promotes informed and compassionate action to improve the environment. Objectives include increased Canadian awareness of and compassion for the plight of endangered animals, with a focus on chimpanzees.</p> <p></p>
<p><b>Keep Growing Detroit</b> Detroit, Michigan USA <a href="http://www.detroitagriculture.net">www.detroitagriculture.net</a></p>	<p>Keep Growing Detroit helps inner-city families, individuals, civic organizations, churches, schools, and community groups grow more than 50 varieties of fruits and vegetables on their own property and in community gardens. About 90% of the crops are shared among the families and communities that grow them and the other 10% are sold at farmer's markets as part of a cooperative called Grown in Detroit. Keep Growing Detroit emphasizes nutrition education and community and civic engagement.</p> <p></p>
<p><b>Living Classrooms of the National Capital Region</b> Washington, D.C. USA <a href="http://www.livingclassroomsdc.org">www.livingclassroomsdc.org</a></p>	<p>Living Classrooms offers programs to inspire young people to achieve their potential through hands-on education and job training using urban, natural, and maritime resources as "living classrooms."</p> <p>  </p>
<p><b>Logan Martin Lake Protection Association</b> Pell City, Alabama USA <a href="http://www.lmlpa.org">www.lmlpa.org</a></p>	<p>Logan Martin Lake Protection Association advocates and promotes the general welfare of Logan Martin Lake by promoting and implementing citizen monitoring of water quality and quantity and promoting safe recreational use.</p> <p></p>









 FINANCIAL SUPPORT

 PRODUCT DONATION

 ASSOCIATE VOLUNTEER

 IN-KIND DONATION

## Environmental Community Activities

Environmental Education	
ORGANIZATION	FOCUS OF INVOLVEMENT
<b>Ohio Wildlife Center</b> Powell, Ohio USA www.ohiowildlifecenter.org	This center is dedicated to fostering awareness and appreciation of Ohio's native wildlife through rehabilitation, education, and wildlife health studies. Honda's grant helps support site upgrades as well as support for the Center's volunteer program.  
<b>Pinelands Preservation Alliance</b> Southampton, New Jersey USA www.pinelandsalliance.org	The Pinelands Preservation Alliance is the only nonprofit organization dedicated solely to the protection of New Jersey's Pinelands, supporting advocacy and educational programs designed to protect the Pinelands for future generations. 
<b>Shelby Soil and Water Conservation District</b> Sidney, Ohio USA www.shelbyswcd.org	Honda supports the Envirothon, a team competition providing high-school students an opportunity to gain a greater awareness of natural resources and environmental issues. It tests teams' knowledge of soils, forestry, wildlife, aquatic ecology, and current environmental issues. 
<b>Solar One</b> New York City, New York USA www.solar1.org	Students, teachers, and custodial staff in the New York City school system work together to design and implement feasible, creative ways to reduce their schools' environmental footprint as part of the City's plan to reduce greenhouse gas emissions by 30%. 
<b>Sustainable Agriculture Education (SAGE)</b> Berkeley, California USA www.sagecenter.org	Urban youth ages 9-18 connect with nature through hands-on experiential lessons focused on sustainable agriculture, watersheds, ecosystems, and community health — conducted in schools and onsite at SAGE's Sunol Agricultural Park, an 18-acre working organic farm and educational center. 
<b>Wildlife and Industry Together (W.A.I.T.)</b> <b>South Carolina Wildlife Federation</b> Columbia, S.C. USA www.scwf.org	W.A.I.T.™ is designed to encourage corporate landowners to integrate the needs of wildlife habitats into corporate land management decisions. Honda associates have implemented many projects such as a butterfly garden, food plots, bird feeders and houses, and tree plantings.  















 FINANCIAL SUPPORT

 PRODUCT DONATION

 ASSOCIATE VOLUNTEER

 IN-KIND DONATION

## Environmental Community Activities

Environmental Preservation and Restoration	
ORGANIZATION	FOCUS OF INVOLVEMENT
<b>Alabama Wildlife Center</b> Pelham, Alabama USA <a href="http://www.awrc.org">www.awrc.org</a>	The center's mission is to rehabilitate injured and orphaned wild birds and return them to the wild. 
<b>Gladys Porter Zoo</b> Brownsville, Texas USA <a href="http://www.gpz.org/ridley.htm">www.gpz.org/ridley.htm</a>	Honda provides products for use by researchers protecting the endangered Kemp's Ridley sea turtle. 
<b>Heal the Bay</b> Santa Monica, California USA <a href="http://www.healthebay.org">www.healthebay.org</a>	Honda associate volunteers participate in the annual California Coastal Cleanup Day, removing trash from a local beach. 
<b>Keep Florence Beautiful/ Adopt A Highway</b> Florence, South Carolina USA <a href="http://www.cityofflorence.com">www.cityofflorence.com</a>	Honda associates volunteer to clean up 2.4 miles of road three times a year near Honda's Timmonsville, SC, powersports factory. Honda also provided a cash contribution and provides volunteers annually to support the City of Florence on selected roads for the "Great American Clean-Up" campaign.  
<b>Living Lands &amp; Waters</b> East Moline, Illinois USA <a href="http://www.livinglandsandwaters.org">www.livinglandsandwaters.org</a>	This non-profit is dedicated to the protection, preservation and restoration of the natural environment of the nation's major rivers and their watersheds, and to expanding the awareness of environmental issues and responsibilities encompassing river systems. 
<b>Majestic Outdoors</b> Pell City, Alabama USA <a href="http://www.majesticoutdoors.com">www.majesticoutdoors.com</a>	Majestic Outdoors helps people of all ages be prepared for life through Youth Mentoring and small-group discussion programs. Honda associates volunteered clearing debris, clearing trails, and improving roads with the organization.  
<b>Miami County Parks</b> Troy, Ohio USA <a href="http://www.miamicountyparks.com">www.miamicountyparks.com</a>	The parks system is endeavoring to recreate native habitats that once existed in Miami County in the county parks, including the creation of the Hobart Urban Nature Preserve; Honda Community Action Team volunteers planted 20 native fruit trees at Lost Creek Reserve in April 2012.  
<b>Mote Marine Laboratory</b> Sarasota, Florida USA <a href="http://www.mote.org">www.mote.org</a>	Mote has been a leader in marine research since its founding in 1955. Today, it incorporates education and outreach for people of all ages from its seven centers for marine research. 
<b>National Off-Highway Vehicle Conservation Council</b> Great Falls, Montana USA <a href="http://www.nohvcc.org">www.nohvcc.org</a>	The council is dedicated to promoting responsible off-highway vehicle (OHV) recreation management and resource protection. It works in partnership with private and public land managers and recreation planners, providing educational, safety, ethics, environmental, and character-building programs for all OHV users.   













 FINANCIAL SUPPORT

 PRODUCT DONATION

 ASSOCIATE VOLUNTEER

 IN-KIND DONATION

## Environmental Community Activities

Environmental Preservation and Restoration	
ORGANIZATION	FOCUS OF INVOLVEMENT
<b>National Women in Agriculture Association</b> Oklahoma City, Oklahoma USA <a href="http://www.nwiaa.org">www.nwiaa.org</a>	The association educates, develops, and provides networking opportunities for socially disadvantaged women in rural and urban areas. Honda associates helped create a vegetable and herb garden in an urban area near a Historically Black College. 
<b>The Nature Conservancy — Alabama Chapter</b> Birmingham, Alabama USA <a href="http://www.nature.org/alabama">www.nature.org/alabama</a>	The organization's mission is to preserve plants, animals, and natural communities that represent the diversity of life on earth. Honda has supported the chapter's Coastal restoration on the Mobile Bay, Earth Day, stewardship, and other volunteer programs.  
<b>The Nature Conservancy — Indiana Chapter</b> Indianapolis, Indiana USA <a href="http://www.nature.org/indiana">www.nature.org/indiana</a>	Honda's donation supports regional conservation efforts of the Nature Conservancy's Indiana chapter. 
<b>The Nature Conservancy — Ohio Chapter</b> Dublin, Ohio USA <a href="http://www.nature.org/ohio">www.nature.org/ohio</a>	Honda has supported the Ohio Chapter's establishment of the Big Darby Creek Headwaters Nature Preserve, stewardship, and volunteer programs.  
<b>New Tecumseth Streams Committee</b> New Tecumseth, Ontario, Canada No website available	Improving water quality and fish and wildlife habitat through floodplain creation and riverbank stabilization. 
<b>Padre Island Peregrine Falcon Survey</b> Bozeman, Montana USA <a href="http://www.earthspan.org">www.earthspan.org</a>	Honda has donated products to assist scientists studying Peregrine Falcons in their natural habitat. 
<b>San Bernardino National Forest Service Association</b> Big Bear, California USA <a href="http://www.fs.fed.us/r5/business-plans/san-bernardino/financials/success-sbnfa.html">www.fs.fed.us/r5/business-plans/san-bernardino/financials/success-sbnfa.html</a>	Since 1993, this group has worked to complement the mission of the U.S. Forest Service. It develops new resources and partnerships that create opportunities, particularly through the efforts of volunteers, for conservation, education, and recreation that add value to the forest's role as public land. 
<b>Specialty Vehicle Industry Association</b> Irvine, California USA <a href="http://www.svia.org">www.svia.org</a>	Promotes the safe and responsible use of all-terrain vehicles through rider training programs and public awareness campaigns.   

 FINANCIAL SUPPORT

 PRODUCT DONATION

 ASSOCIATE VOLUNTEER

 IN-KIND DONATION

## Environmental Technology Milestones 1972 – 2000



### 1972

Honda announces CVCC (Compound Vortex-Combustion Controlled), the first engine technology to meet U.S. Clean Air Act standards without the need for a catalytic converter.

### 1973

Honda introduces 4-stroke marine engines that are cleaner, more fuel-efficient, and quieter than the 2-stroke outboard motors standard at the time. Honda has manufactured only 4-stroke outboard motors since 1973.

### 1974

First car to meet U.S. Clean Air Act without the use of a catalytic converter solely through engine performance: the 1975 Honda Civic CVCC.

### 1977

The Civic tops the U.S. EPA's list of America's most fuel-efficient cars.

### 1986

The Civic CRX-HF is the first mass-produced 4-cylinder car to break the 50-mpg fuel economy mark.

### 1989

Honda becomes the first automaker in America to use waterborne basecoat paint in mass production.

### 1990

VTEC (Variable Valve Timing and Lift Electronic Control) — Honda's foundational technology for achievements in low emissions, high fuel-efficiency, and high performance, is introduced in the U.S. in the Acura NSX.

### 1995

First gasoline low-emission vehicle (LEV) in the industry is introduced in California: the 1996 Honda Civic.

Fuel economy leadership puts four Honda models on the U.S. EPA's list of the 10 most fuel-efficient cars.

### 1996

The Honda Civic HX Coupe with a continuously variable transmission is the only automatic transmission vehicle to make the U.S. EPA's top-10 list of fuel-efficient cars.

### 1997

First CARB-certified gasoline ultra-low-emission vehicle (ULEV) is introduced: the 1998 Honda Accord.

Honda becomes the first automaker to introduce low-emission vehicle (LEV) technology voluntarily in mass-market vehicles (Honda Civic) throughout the U.S. and Canada.

World's first 360-degree inclinable mini 4-stroke engine for handheld power equipment is introduced by Honda. It is more fuel efficient and virtually smoke free, with ultra-low noise.

First advanced battery-powered electric vehicle is introduced and leased to customers: the 1997 Honda EV Plus.

### 1998

U.S. EPA recognizes the 1998 Honda Civic GX natural gas vehicle as the cleanest internal combustion engine it has ever tested.

Honda introduces ultra-quiet portable inverter generators that achieve substantially higher fuel economy and lower emissions than conventional generators.

Honda becomes the first company to introduce an entire line of high-performance outboard motors that meet U.S. EPA emission standards proposed for the year 2006.

### 1999

First CARB-certified gasoline super-ultra-low-emission vehicle (SULEV) in the industry is introduced: the 2000 Honda Accord.

Honda introduces FCX-V1 and FCX-V2 prototype fuel cell electric vehicles.

First gas-electric hybrid vehicle is introduced in North America: the 2000 Honda Insight.

### 2000

First 50-state ultra-low-emission vehicle (ULEV) is introduced: the 2001 Civic.

First product of any kind receives the Sierra Club Excellence in Environmental Engineering Award: the 2000 Honda Insight.

First vehicle certified as an advanced technology partial zero-emission vehicle (AT-PZEV) by California's Air Resource Board (CARB): the 2001 Civic GX.

## Environmental Technology Milestones 2001 – 2007



### 2001

First production motorcycle certified to meet CARB's 2008 emission standards, the Honda Gold Wing, is sold.

Honda is the first mass-market automaker to offer an entire lineup of cars and light trucks that meet or exceed low-emissions vehicle (LEV) standards.

First solar-powered hydrogen production and fueling station for fuel cell vehicles built and operated by an automaker opens at Honda R&D Americas' Los Angeles Center.

America's first zero waste to landfill auto plant opens in Lincoln, Alabama.

Honda introduces FCX-V3 prototype fuel cell electric vehicle.

Honda introduces first personal watercraft to meet 2006 EPA emissions standards: 2002 AquaTrax F-12 and F-12X.

### 2002

First application of hybrid technology to an existing mass-market car: the 2002 Civic Hybrid.

First fuel cell electric vehicle to receive EPA and CARB certification for commercial use, and the first to meet federal crash safety standards: Honda FCX.

Industry's first lineup of personal watercraft (PWC) powered exclusively by 4-stroke engine technology.

World's first commercial application of a fuel cell electric vehicle: a Honda FCX is leased to the city of Los Angeles.

### 2003

First hybrid vehicle certified AT-PZEV by CARB: 2002 Civic Hybrid.

Honda develops breakthrough fuel cell stack that starts and operates at temperatures below freezing while improving fuel economy, range, and performance.

### 2004

FCX vehicles are leased to the cities of San Francisco and Chula Vista, and the South Coast California Air Quality Management District.

The 2005 FCX, Honda's second-generation fuel cell vehicle, is certified by the EPA as a Tier 2 Bin 1 (ZEV) vehicle and by the CARB as a zero-emission vehicle (ZEV).

World's V-6 hybrid car is introduced: the 2005 Accord.

FCX with cold-weather start capability is leased to state of New York, the first fuel cell customer in the northeastern U.S.

Union of Concerned Scientists gives Honda its "Greenest Automaker" award.

### 2005

World's first fuel cell electric vehicle leased to an individual customer: Honda FCX.

Introduction of Honda Variable Cylinder Management (VCM) technology, the first cylinder deactivation system for an overhead cam (OHC) V6 engine: the 2006 Odyssey minivan.

Introduced iGX computer-controlled general purpose engine, setting a new standard for fuel efficiency and quiet operation.

The 2006 Civic hybrid introduces 4th-generation Honda IMA technology with 50 mpg combined EPA city and highway fuel economy.

### 2006

Honda Soltec, LLC, established for production and sales of Honda-developed CIGS solar panels in Japan.

Retail sales of natural-gas-powered Civic GX expanded from California to New York State.

Honda develops plant-based biofabric for use in automobile interiors.

North American debut of Honda FCX Concept with more compact, powerful, and efficient V Flow stack.

### 2007

Union of Concerned Scientists names Honda the "greenest automaker" for the fourth consecutive time.

World debut of the FCX Clarity with more powerful, efficient, and compact V Flow fuel cell stack.

## Environmental Technology Milestones 2008-2013



### 2008

2008 Civic GX tops the ACEEE "Green Car" list for the fifth straight year.

Honda begins delivery of its next-generation FCX Clarity fuel cell car to customers in Southern California.

### 2009

The 2010 Honda Insight is launched as North America's most affordable mass-produced hybrid automobile.

FCX Clarity named World Green Car of the Year.

### 2010

Honda begins operation of prototype Honda Solar Hydrogen Station at Honda R&D in California.

Honda earns top ranking for the 10th consecutive year in ACEEE = annual rating of America's greenest vehicles.

Honda introduces first affordable sports hybrid: the two-seat CR-Z.

American Honda launches Honda Electric Vehicle Demonstration Program with the first public test drive of a Fit EV.

Honda named America's "greenest automaker" for the fifth consecutive time by the Union of Concerned Scientists.

### 2011

Honda launches 9th-generation Civic lineup including the EPA-rated 41 mpg Civic HF, a new Civic Natural Gas, and EPA-rated 44 mpg Civic Hybrid, the most fuel-efficient sedan in America.

Ten of 14 Honda plants in North America achieve zero waste to landfill, with total waste to landfills across all 14 plants reduced to just 0.5% of all operating waste.

The 2012 Civic Natural Gas is named "Green Car of the Year" by *Green Car Journal* magazine and a diverse panel of automotive experts.

### 2012

Honda launches retail sales of the 2012 Civic Natural Gas through an expanded sales network, with nearly 200 Honda dealers in 37 states.

American Honda launches Environmental Leadership Award "green dealer" program with U.S. Honda and Acura dealers, including a baseline requirement to reduce energy use by 10%.

Acura introduced the NSX Concept and RLX Concept in North America, both to be powered by versions of Honda's new three-motor hybrid system, dubbed Sport Hybrid Super Handling All-Wheel Drive (SH-AWD).

Leasing of the 2013 Honda Fit EV, with an industry-leading EPA fuel-economy rating of 118 MPGe, begins in California and Oregon.

Launch of 9th-generation Accord with Honda "Earth Dreams Series" powertrains, including new direct-injection 4-cylinder engine and continuously variable transmission (CVT).

Honda announces plans to begin sales of a new hydrogen-powered fuel cell vehicle in the U.S., Japan, and Europe in 2015.

Worldwide sales of Honda and Acura hybrid vehicles reach one million units.

### 2013

Honda launches first plug-in hybrid vehicle, the 2013 Accord Plug-In Hybrid with an EPA-rated 115MPGe in all-electric mode, making it the most fuel-efficient 5-passenger sedan in America.

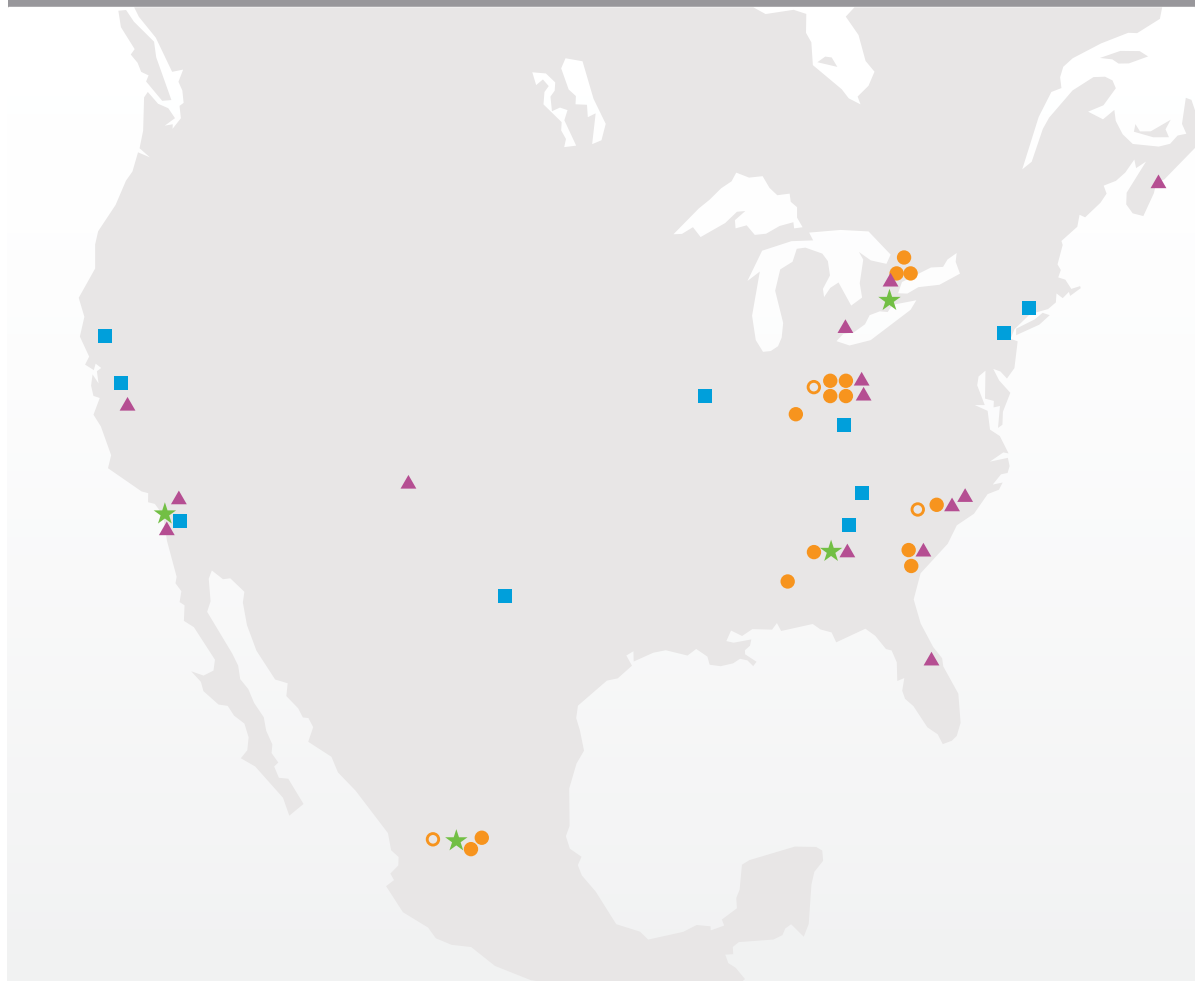
Construction begins on Honda Smart Home US on the campus of the University of California, Davis, showcasing Honda's vision for sustainable, zero-carbon living.



## North American Corporate Profile

Honda develops, manufactures, sells, and services a diverse range of automobile, power equipment, and powersports products in North America. This is Honda's single largest market for the production and sales of Honda and Acura automobiles. As such, Honda's North American region plays a critical role in the company's global effort to reduce its environmental impact, particularly in automobile production and in-use CO<sub>2</sub> emissions.

### Key North American Locations



### Capital Investment

More than \$21 billion

### Employment

Approximately  
33,000 associates




### Parts Purchases

More than \$17.5 billion  
in parts and materials  
purchased annually  
from more than 600  
North American  
original equipment  
suppliers

#### MAP LEGEND

- Major Manufacturing Facilities
- Major Manufacturing Facilities (under development)
- ▲ Research and Development Centers
- Parts Centers
- ★ Sales and Marketing Headquarters

**Additional Information**

	United States	Canada	Mexico
Additional information on Honda and Acura products can be found at:	  <a href="http://www.honda.com">www.honda.com</a>	  <a href="http://www.honda.ca">www.honda.ca</a>	  <a href="http://www.honda.com.mx">www.honda.com.mx</a>
Honda companies covered in this report:	American Honda Motor Co., Inc. American Honda Finance Corp. Honda North America, Inc. Honda of America Mfg., Inc. Honda Manufacturing of Alabama, LLC Honda Power Equipment Mfg., Inc. Honda of South Carolina Mfg., Inc. Honda Transmission Mfg. of America, Inc. Honda Manufacturing of Indiana, LLC Honda Engineering North America, Inc. Honda R&D Americas, Inc. Honda Trading America Corp. Honda Precision Parts of Georgia, LLC Honda Aircraft Company, Inc. Honda Aero, Inc.	Honda Canada, Inc. Honda of Canada Mfg., a division of Honda Canada, Inc. Honda R&D Americas, Inc. (Canada) Honda Canada Finance, Inc. Honda Trading Canada, Inc.	Honda de Mexico, S.A. de C.V.

All trademarks, trade names, service marks, and logos referenced herein belong to their respective companies. All images contained herein are either owned by American Honda Motor Co., Inc., or used under a valid license. It is a violation of federal law to reproduce these images without express written permission from American Honda Motor Co., Inc., or the individual copyright owner of such images. Specifications, features, illustrations, and equipment shown in this report are based upon the latest information available at the time of document release. Although descriptions are believed to be correct, accuracy cannot be guaranteed.

©2013 American Honda Motor Co., Inc.