

North American  
Environmental Report

2015



**HONDA**

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## Table of Contents

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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, 2014 and ended March 31, 2015 (FY15).

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### 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.

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### 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.

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### Data worksheet

[Click here](#) 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.

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## A Letter from the President & CEO

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**D**uring the past year, we have taken important steps in North America toward our vision to create a more sustainable future for our customers and society.

In the effort to reduce our environmental impact in this region, we are following what we call our “Green Path” direction. This concept includes efforts

to reduce energy use and emissions from our products, as well as from all of our activities in North America — from the ways in which we develop and manufacture products, to the means by which we transport, sell and service them.

Emissions of greenhouse gases (GHG) remain at the center of our vision for helping to address society’s energy and environmental concerns. In this regard, our company has set a challenging global goal — to halve our total company CO<sub>2</sub> emissions from year 2000 levels by year 2050. We continued to make progress toward this goal in fiscal year 2015.

To address this challenge, we are working aggressively to advance the fuel efficiency of our products in the near term, while advancing the market potential of alternative-energy technologies. This year, we expanded the use of more efficient direct-injected engine technology in several all-new models. And at the time of this report’s publishing, Honda launched our first small-displacement (downsized) turbo engine in North America that helps the 10th-generation Civic Sedan achieve an EPA highway fuel-economy rating of 42 miles per gallon. Next year, we will launch a new Honda fuel-cell vehicle in the United States that will later be followed by more electrified vehicles.

Our efforts for reducing GHG emissions and other environmental impacts extend to every facet of our operations. For example, in manufacturing, we have made major gains in more energy-efficient, low-waste and low-emissions production.

Despite short-term increases in several of these areas due to the startup of our eighth and newest auto plant in the region in Celaya, Mexico, we will continue to reduce the overall environmental impact of our manufacturing operations in North America with the expanded use of renewable energy, as well as our ongoing efforts to increase efficiency and eliminate waste.

In sales and service, we also are making progress, reducing the CO<sub>2</sub> emissions intensity of product and parts shipments to dealers and promoting “green dealer” practices. A growing number of our automobile dealers in America are taking this challenge and finding that they can reduce both energy use and operating costs with the adoption of more energy-efficient technology and business practices.

These examples represent the broad effort that we are making to pursue the Honda Environmental Vision that you will find detailed in this report. We view this report as integral to our effort to provide our customers and many stakeholders with a clear view of both our environmental impact and ongoing effort to reduce that impact.

We are very optimistic about our ability to innovate for improved environmental performance. We have more work to do, but our vision is clear and we have made an effort to share this vision with all Honda associates in North America. It is the passion and commitment of these associates that makes our dreams possible.

Thank you for your interest in Honda and our efforts to advance our environmental performance. I invite you to share your perspectives on our progress and on this report by filling out the online survey referenced in this report.

Sincerely,



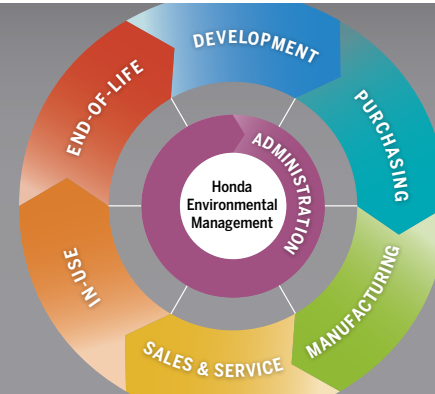
**Takuji Yamada**

President & CEO, Honda North America, Inc.  
Chairman, Honda North American Environmental Committee



## 2015 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 for reporting on the environmental impact of Honda products and business operations in North America.



CATEGORY	PRODUCT	FY15 RESULTS
Recyclability	Autos	<ul style="list-style-type: none"> <li>Maintained a 90% level of design recyclability.</li> </ul>
	Powersports and Power Equipment	<ul style="list-style-type: none"> <li>Maintained a 95% level of design recyclability.</li> </ul>
Substances of Concerns (SOCs)	Autos	<ul style="list-style-type: none"> <li>Continued efforts to eliminate PVC from automobile interiors.</li> <li>Continued phasing in the use of mercury-free display monitors.</li> </ul>
Fuel-efficient Technology	Autos	<ul style="list-style-type: none"> <li>Introduced the redesigned three-row Honda Pilot SUV, new HR-V subcompact crossover and new Acura TLX sports sedan, each utilizing more fuel-efficient powertrains, increased application of lightweight materials, reducing running resistance and body designs with optimized aerodynamic performance thus resulting in top-class fuel efficiency and collision safety performance.</li> </ul>



CATEGORY	PRODUCT	FY15 RESULTS
"Green Purchasing"	All Products	<ul style="list-style-type: none"> <li>Honda worked to advance its Supplier Greenhouse Gas Initiative, launched in FY11, and in FY15 saw a 46 percent increase in the number of suppliers reporting out greenhouse gas emissions data, on top of a 44% increase in FY14.</li> </ul>
"Green Logistics"	All Products	<ul style="list-style-type: none"> <li>Continued efforts to reduce CO<sub>2</sub> emissions and other environmental impacts from the shipment of parts and materials: more than 4,317 metric tons CO<sub>2</sub> emissions were avoided in FY15.</li> </ul>





## 2015 Executive Summary



CATEGORY	PRODUCT	FY15 RESULTS
CO <sub>2</sub> e Emissions	All Products	<ul style="list-style-type: none"> <li>CO<sub>2</sub>e emissions intensity of automobile production rose 1.2% for autos and 2.6% for powersports products, due in part to expanded operations, while emissions per unit of power equipment production fell 2.3% versus the previous fiscal year.</li> </ul>
Waste	Autos	<ul style="list-style-type: none"> <li>After three straight years of declines, solid waste per automobile rose 8.6% from year-ago results due primarily to inefficiency related to the startup of a new automobile manufacturing plant in Celaya, Mexico.</li> <li>Waste to landfill per automobile rose 879% from the previous fiscal year, due primarily to issues with the start of the new Celaya, Mexico plant, but was down 54.0% from the baseline year.</li> </ul>
Water		<ul style="list-style-type: none"> <li>Water use per automobile produced was up 2.8% from the previous year due to plant expansions and the startup of the new Celaya, Mexico plant.</li> <li>Industrial wastewater discharged from N.A. plants for each automobile produced was reduced for the fourth consecutive year, down 6.5% from the previous fiscal year and 14% from FY10 levels.</li> </ul>
VOC Emissions		<ul style="list-style-type: none"> <li>VOC emissions from auto-body painting were down slightly from the previous fiscal year to 14.1 g/m<sup>2</sup>, well below the company's targeted maximum of 20 g/m<sup>2</sup>.</li> </ul>



CATEGORY	PRODUCT	FY15 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. fell for the sixth consecutive year and are down 36.6% from the FY09 baseline.</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 have reduced the CO<sub>2</sub> emissions intensity of product shipments by 11.5% since FY10.</li> </ul>
Waste	Autos	<ul style="list-style-type: none"> <li>Ongoing efforts to reduce, reuse and recycle waste material resulted in 16,126 pounds of waste from U.S. parts warehouses being diverted from landfills in FY15, which is an increase of 2,666 tons from FY14.</li> </ul>
"Green Dealers"		<ul style="list-style-type: none"> <li>American Honda launched its "green dealer" award program with Honda and Acura automobile dealers in the U.S. in FY12 and has enrolled 293 dealers with 67 receiving Environmental Leadership Awards — an increase from 29 in FY14.</li> </ul>



## 2015 Executive Summary



CATEGORY	PRODUCT	FY15 RESULTS
CO <sub>2</sub> Emissions	Autos	<ul style="list-style-type: none"> <li>According to the U.S. EPA, the fuel economy of the company's MY14 U.S. vehicle fleet, at 27.6 mpg, was improved 0.7% versus MY13 results, and was 14.0% higher (better) than the U.S. auto industry average for MY14.</li> <li>According to the U.S. EPA, the adjusted composite CO<sub>2</sub> emissions of the company's MY14 U.S. automobile fleet, at 322 grams/mile, was reduced 0.6% versus MY13 results, and was 12.3% lower (better) than the U.S. auto industry average for MY14.</li> </ul>
	Powersports	<ul style="list-style-type: none"> <li>As measured by emissions test data, the fleet average fuel economy of Honda motorcycles sold in North America has been improved 49% versus MY00 results.</li> </ul>
Criteria Air Pollutants	Autos	<ul style="list-style-type: none"> <li>Emissions of criteria air pollutants (non-methane organic gases) from automobiles was down slightly from the previous model year (MY13).</li> </ul>
	Powersports	<ul style="list-style-type: none"> <li>In MY14, Honda substantially outperformed both U.S. EPA and CARB Tier 2 requirements for hydrocarbon (HC), nitrogen oxides (NOx) and carbon monoxide (CO) exhaust emissions, and also outperformed both EPA and CARB requirements for evaporative emissions and fuel permeation.</li> </ul>



CATEGORY	PRODUCT	FY15 RESULTS
Waste	E-waste, overstock and remanufactured parts	<ul style="list-style-type: none"> <li>39.1 million pounds of e-waste, warranty parts and overstock parts were diverted from landfills in FY15.</li> <li>Honda continued to increase its remanufactured parts offerings, adding seven new part numbers in CY14.</li> </ul>



CATEGORY	PRODUCT	FY15 RESULTS
"Green Building"	North American Facilities	<ul style="list-style-type: none"> <li>Honda has 13 buildings that have earned a "green building" certification under either the LEED or Green Globes certification programs.</li> <li>Honda installed a 1-megawatt solar array on the roof of its Windsor Locks, Connecticut parts distribution warehouse, anticipated to offset 576 tons of greenhouse gas emissions from the Connecticut Power and Light grid annually.</li> </ul>

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## Honda Environmental Vision

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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.”

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.

“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.

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.

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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.**

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## Environmental Management

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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.

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### 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.”

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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 "Green Dealer"	Environmental reporting

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## Key Practices

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### 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;
- systems for recycling products, components and manufacturing byproducts, in order to minimize landfill waste; and
- triple-checked vehicle emissions testing to assure automobile emissions compliance.

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

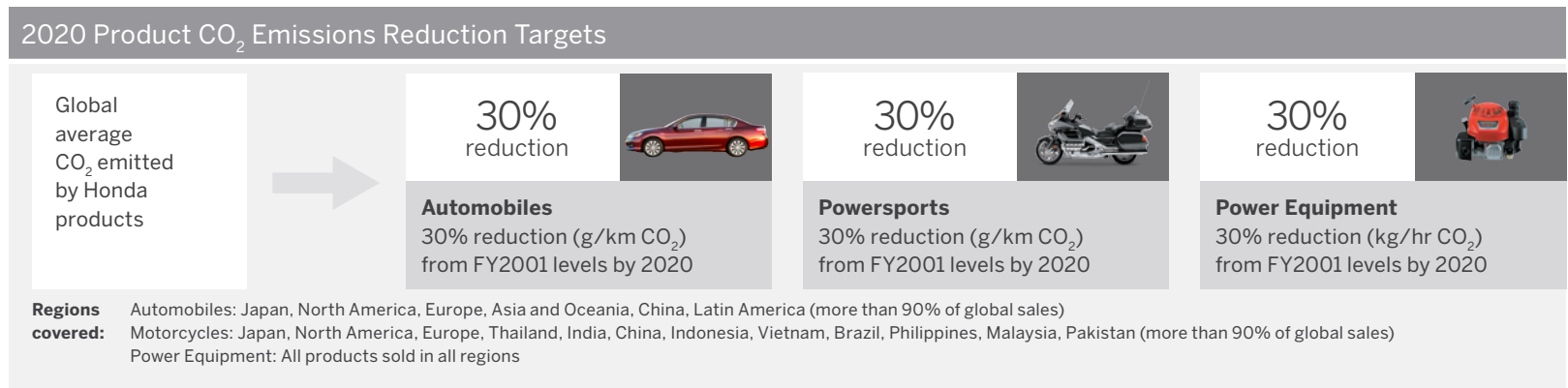
During the fiscal year that ended March 31, 2015, Honda had no environmental-related fines in North America.

## Addressing Global Climate Change and Energy Use

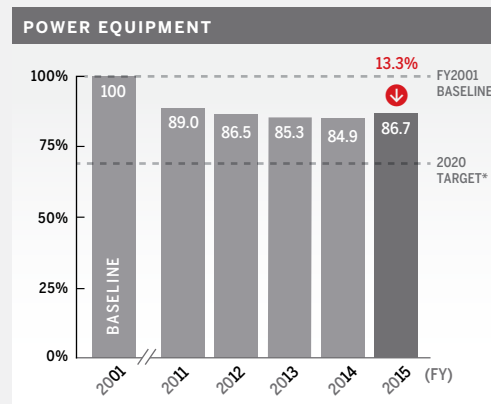
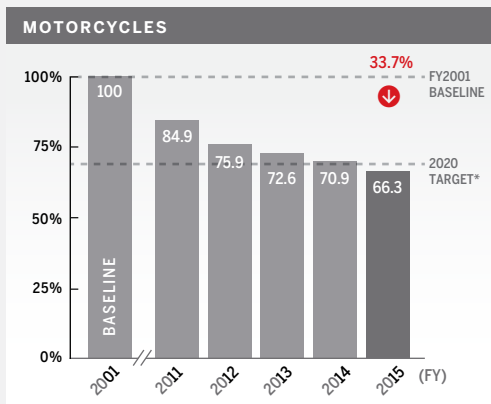
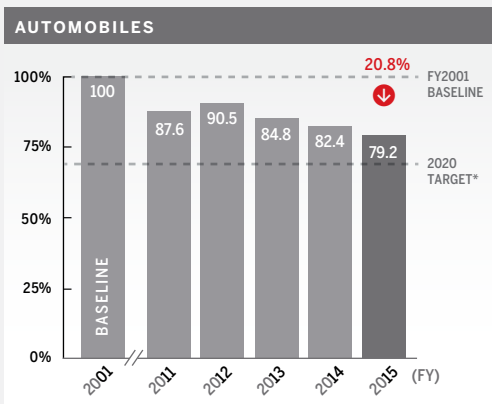
### 2020 Product CO<sub>2</sub> Emissions Reduction Targets

Reducing global 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 percent reduction in fleet average emissions of its automobiles, motorcycles and power equipment products, compared with FY2001 baseline levels.

Specifically, Honda aims to steadily reduce CO<sub>2</sub> emissions by progressively promoting three scenarios: (1) reducing emissions through increasing the efficiency of internal combustion engines; (2) reducing emissions by introducing environmentally innovative technologies and increasing energy diversity; (3) and eliminating emissions through the use of renewable energy and total energy management.



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



\* 30% reduction from FY2001 levels

## Honda's Approach to Climate Change Policy

Honda recognizes climate change as a serious environmental concern with significant consequences for all of society. For years, the company has been, and remains, firmly committed to mitigating climate change impacts throughout our broad array of corporate activities. While improving the fuel efficiency of our products is perhaps the most visible of these activities, significant efforts have been made to improve manufacturing and logistics activities as well.

Honda takes a portfolio approach in developing technologies to address climate change. By pursuing multiple pathways, Honda can

better address the environmental challenges of each market as well as the needs of individual consumers. Solving an environmental challenge as complex as global climate change requires concerted efforts by industry, government and consumers alike. 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
<b>Federal Fuel Economy (CAFE) and Vehicle Greenhouse Gas Emissions (GHG) Standards</b>	Honda was among the earliest supporters of, and was a signatory to, the White House initiatives to have one national program that harmonized 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, helps drive innovative ideas to reduce fuel consumption and carbon emissions. Any future changes made to CAFE and vehicle GHG standards should provide equitable treatment to all vehicle types and sizes.
<b>Incentives</b>	Incentives implemented by government entities can be constructive in stimulating nascent and expensive technologies, such as those used in fuel-cell vehicles, battery-electric vehicles and plug-in hybrid electric vehicles. 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, are proven to 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 original purpose of the carpool lanes, namely traffic congestion mitigation and air-quality improvement. The conversion of existing HOV lanes to High Occupancy Toll (HOT) lanes, or the construction of new HOT lanes, should maintain the same advanced technology incentives as are in place for HOV lanes in that state.



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

Public Policy Initiatives	Honda's Position
<p><b>Renewable Fuels</b> Biofuels, 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. Biofuels research continues to advance, as does the scientific understanding of both positive and adverse impacts of its use. Complex and vexing challenges related to biofuels use, such as indirect land use and "food versus fuel" impacts, are important considerations in assessing their broader social value. Compatibility with existing and future products, a viable distribution network and a refueling infrastructure are all critical considerations.</p> <ul style="list-style-type: none"> <li>• EPA's approval of a waiver allowing the sale of E15 was premature and does not meet the criteria detailed above. Specifically, given blends in excess of 10% are not inherently compatible with legacy vehicles, small engine products, and motorcycles, the government must assure that legacy fuels remain in the marketplace and provide for effective safeguards to prevent misfueling by consumers.</li> <li>• 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.</li> <li>• 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.</li> </ul>
<p><b>Macro-Economic Drivers</b></p>	<p>While regulatory mandates are one way of achieving reduced GHG emissions, a carbon tax or cap-and-trade program are market-based tools that may be more efficient in achieving a similar goal. Both approaches have precedent, but must be implemented in thoughtful ways that spread the burden equitably, avoid windfalls and are reasonable to administer.</p>
<p><b>California Air Resources Board (CARB) Zero-Emission Vehicle (ZEV) Mandate</b></p>	<p>The ZEV mandate requires automakers to sell zero-emission technology vehicles in California and nine other states that have adopted the standards. Because the 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. Basing a regulatory framework on environmental benefits rather than technology types would yield comparable social benefits, yet do so in a way that fosters creative engineering solutions for meeting our mid-century climate goals.</p> <p>In order to succeed, zero-emission vehicle 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.</p>

## 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 needs in the North American region in an effort to anticipate the effect of these needs 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 to ensure 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: precursors to smog (localized health effects), particulate matter (localized health effects and contributor to climate change) and carbon monoxide (local health effects). Virtually every combustion engine product Honda makes is regulated with respect to one or more of these impacts.<sup>1</sup></p>	<ul style="list-style-type: none"> <li>• Honda has aggressively met or exceeded emissions standards, frequently prior to regulatory requirements, and has worked cooperatively with regulatory agencies to continuously reduce harmful emissions.</li> <li>• While dramatic improvements have been made during the past 30 years and new priorities (such as climate change) have emerged, air-quality regulations continue to become more stringent. In 2014, the EPA set stringent new "Tier 3" emissions standards to harmonize with California's aggressive LEV III standards. Honda strongly supported this effort.</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, reliability, and affordability.</p>	<ul style="list-style-type: none"> <li>• Honda is focused on the issues of climate change (greenhouse gas emissions) and energy security 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 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 by leveraging our capabilities in the areas of fuel-efficient propulsion systems, reduced auxiliary loads, reduced running resistance (aerodynamics and lightweighting), and alternative-energy technologies.</li> </ul>

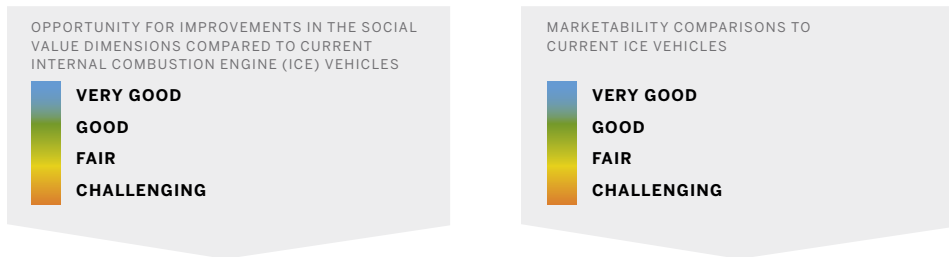
<sup>1</sup> Except for engines used in competition, and PE/Marine engines that are not regulated in Mexico.

## Improving Fuel Efficiency and Reducing Greenhouse Gas Emissions

Honda has long pursued 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.

In terms of environmental impact, tailpipe emissions represent only a portion of a vehicle’s carbon emissions. Additional emissions result from the extraction, refining and transporting of fuel used by the vehicle. A well-to-wheels assessment is necessary to account 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</b>	VERY GOOD	FAIR	GOOD	VERY GOOD	VERY GOOD	VERY GOOD	VERY GOOD	<p>Honda is broadly applying advanced engine technology, including low-friction-engine features, variable valve timing, variable displacement and direct injection.</p> <p>Honda in 2012 began introducing an advanced line-up of efficient engines and transmissions that includes more efficient direct-injected engines, continuously variable transmissions (CVTs) and dual clutch transmissions. These powertrain technologies are part of Honda’s voluntary commitment to a 30 percent reduction in CO<sub>2</sub> emissions from its automobile, motorcycle and power equipment products by 2020, as compared to a FY2001 baseline level (see page 11).</p>
	<p>There remain significant opportunities to further improve the fuel efficiency of the gasoline internal combustion engine (ICE).</p> <p>Even with potential increases in vehicle miles travelled, fuel efficiency improvements directly correlate with reductions in both greenhouse gas emissions and petroleum use.</p> <p>Improved ICE presents the greatest short-to mid-term overall social benefit because of its existing high volumes and broad market acceptance.</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 cont'd**

	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>UNCERTAIN</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. Over a 17-year period, the company brought four generations of the Civic Natural Gas to the U.S. market, selling in excess of 16,000 natural gas-powered Civics to fleet and retail customers. Honda announced in June 2015 that it would discontinue sales of the Civic Natural Gas in the U.S. based on limited market demand. Honda continues to market natural gas vehicles in Asia, and Honda continues to evaluate the technology for its potential to address environmental issues.</p>
	<p>Natural gas is an abundant, inexpensive, domestic fuel.</p> <p>Since natural gas is a domestic alternative to petroleum, it is excellent for energy security.</p> <p>Recent research into the "well-to-tank" portion of natural gas emissions has raised concerns about the true "well-to-wheels" greenhouse gas benefits of natural gas vehicles. 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 light-duty 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>In mainstream products, particularly sedans and smaller vehicles, vehicle utility, such as cargo space, can be negatively 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>FAIR</b>	<p>Honda is actively developing advanced diesel engine technology and markets its technology in places such as Europe, where the technology is more appealing due to diesel fuel prices that are significantly lower than gasoline prices.</p>
	<p>Modern diesel engines can meet stringent emissions standards.</p> <p>Diesel contains 13% more carbon than gasoline, eroding some of the CO<sub>2</sub> emissions benefits of the engine's higher efficiency, 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 counterparts. In some markets outside North America, diesel fuel is much cheaper than gasoline, so the fuel savings can offset that cost. In North America, diesel fuel is usually 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 cont'd**

	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>Honda is urging the U.S. EPA to take steps to prevent the misfueling of small engine products and legacy vehicles with mid-level ethanol (greater than 10%).</p>
	<p>Depending upon their feedstocks, land use changes and production 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. There is concern about the volume of sustainable biofuels.</p> <p>From a policy perspective, prudence may suggest they be reserved for other forms of transportation that lack alternative options.</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 their lower energy content per gallon of fuel.</p>				
<b>Hybrid Electric Vehicles (HEVs)</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 technology to increase its efficiency and performance and, in 2013, Honda launched a new two-motor hybrid system for the Accord Hybrid. This new two-motor system helped the Accord Hybrid receive the highest EPA fuel economy rating of any five-passenger sedan in America. Acura, Honda's luxury automobile brand, is also marketing a version of its RLX flagship sedan using three-motor hybrid technology under the banner of Sport Hybrid Super-Handling All Wheel Drive (Sport Hybrid SH-AWD) and will apply a similar three-motor hybrid architecture to its new Acura NSX sports car, launching in 2016.</p> <p>In June 2015, Honda announced plans to expand the use of its highly efficient two- and three-motor hybrid systems to additional models, to include the launch of a redesigned Accord Hybrid in 2016 with a next-generation two-motor hybrid system that is more compact, powerful and fuel efficient.</p>
	<p>Hybridization can significantly increase fuel efficiency by utilizing the engine in its most efficient operating band, as well as 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 cont'd**

	Social Values			Marketability				Honda's effort
	AIR QUALITY	GHG REDUCTION	ENERGY SECURITY	INFRA-STRUCTURE	COST	FULL FUNCTION	APPEAL	
<b>Plug-In Hybrid Electric Vehicles (PHEVs)</b>	VERY GOOD	VERY GOOD	VERY GOOD	FAIR	CHALLENGING	VERY GOOD	VERY GOOD	<p>Honda gained significant market experience and customer feedback from its recent Accord Plug-In PHEV. Experience with that model is informing an upcoming new PHEV model slated to launch in the U.S. market by 2018.</p> <p>Together with other OEMs that make both PHEVs and BEVs, Honda has shown that PHEVs can have significant environmental benefits with a smaller battery pack than a BEV.</p>
<b>Battery Electric Vehicles (BEVs)</b>	VERY GOOD	VERY GOOD	VERY GOOD	CHALLENGING	CHALLENGING	CHALLENGING	VERY GOOD	<p>Honda was first to market an advanced battery electric vehicle in the U.S., the Honda EV Plus, between 1997 and 2003. The EV Plus used advanced NiMH batteries.</p> <p>Honda began leasing the Fit EV, with a 118 MPGe 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>Fit EVs are providing valuable technical, market and infrastructure feedback to Honda. Honda is offering lease extensions as well as used-vehicle leases when the MY13 and MY14 Fit EVs become available.</p> <p>Honda has initiated and/or joined several research projects investigating smart charging, energy grid services and other potential ancillary benefits of connecting EVs with the U.S. electric grid.</p>

**Improving Fuel Efficiency and Reducing Greenhouse Gas Emissions cont'd**

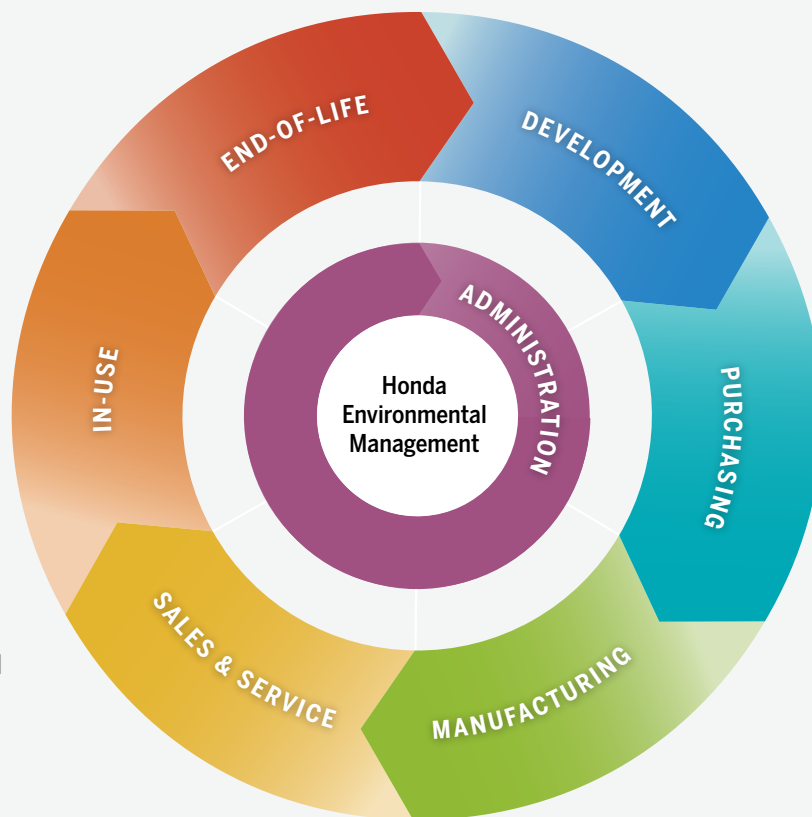
	Social Values			Marketability				Honda's effort
	AIR QUALITY	GHG REDUCTION	ENERGY SECURITY	INFRA-STRUCTURE	COST	FULL FUNCTION	APPEAL	
<b>Fuel Cell Electric Vehicles (FCVs)</b>	<b>VERY GOOD</b>	<b>VERY GOOD</b>	<b>VERY GOOD</b>	<b>CHALLENGING</b>	<b>CHALLENGING</b>	<b>VERY GOOD</b>	<b>VERY GOOD</b>	<p>Honda plans to launch a next-generation FCV in 2016 offering even greater range and utility than the previous generation fuel cell vehicle, the FCX Clarity.</p> <p>Honda is working to advance not only FCV 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>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> <p>In late 2014, Honda announced an investment of nearly \$14 million in FirstElement Fuel to further accelerate the network of public hydrogen refueling stations in California.</p>
	<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 hydrocarbons. Either of these two methods replaces petroleum.</p>			<p>The cost of fuel cell technology and the very limited refueling infrastructure remain significant barriers, though California has recently made a significant commitment to helping foster a fueling station network.</p> <p>Fuel cell vehicles deliver performance, utility, comfort, and driving range virtually on par with conventional gasoline-powered automobiles.</p>				

Technologies that apply to all vehicles, regardless of fuel or type of powertrain

	Social Values	Marketability	Honda's effort
<b>Reducing Running Resistance</b>	<p>Improved aerodynamic design, reduced tire rolling resistance, and lower vehicle mass can improve the fuel efficiency of any type of vehicle regardless of powertrain or energy source.</p> <p>This has a positive effect on both GHG reduction and petroleum consumption.</p>	<p>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.</p>	<p>Honda is continually researching new means of reducing vehicle running resistance while delivering on the performance, utility, and safety requirements its customers demand.</p> <p>All new Honda and Acura vehicles introduced over the past several years have used increasing amounts of high-strength lightweight steel and ultra-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 performance and customer value.</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.







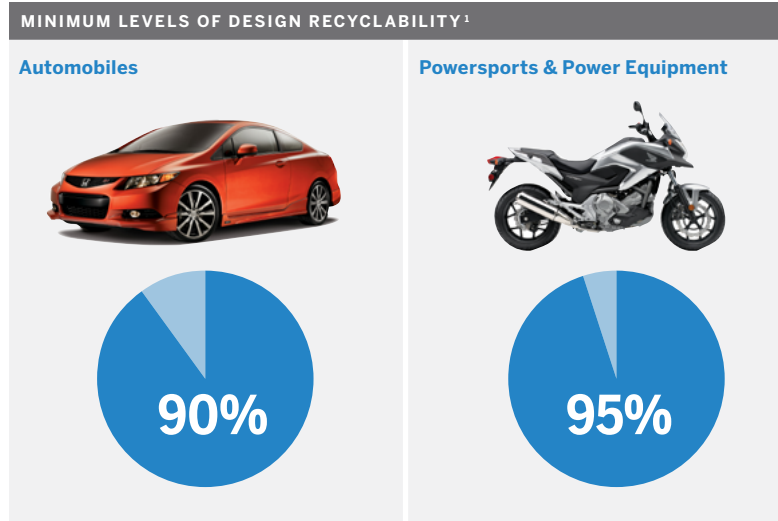
## Designing Products with the Environment in Mind

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 percent level of design recyclability<sup>1</sup> for all Honda and Acura automobiles, and a minimum 95 percent 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-percent 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.







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## Reducing PVC in Honda and Acura Automobiles

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Honda's goal is to have a PVC-free material construction for interiors on all of its vehicles. Through the end of FY15, vehicles with PVC-free interiors are the Honda Accord Coupe and Accord Sedan, Crosstour, Odyssey and CR-Z, and the Acura TL, RDX, MDX, ILX, and RLX. 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, quality and technical barriers present a challenge to its total elimination.

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## Air Quality/Cabin VOC

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In line with Honda's strategy to reduce the use of hazardous or potentially harmful substances in its products, Honda is also working to more adequately measure and predict levels of in-cabin VOCs.

- 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.
- Honda will continue its efforts to reduce cabin VOCs and to improve air quality in the cabins of all its vehicles



## New Automobile Concepts, Products, and Technologies Introduced in FY15

### 2016 Honda Pilot

The 2016 Pilot utilizes an all-new platform; a lighter weight, more aerodynamic body; a more efficient direct-injected engine and numerous friction-reducing technologies that result in an up to 2-mpg increase in EPA city and highway fuel economy ratings, while also achieving a top collision safety rating from the Insurance Institute for Highway Safety and an available front crash prevention system that earns a Superior rating. The development of the Pilot involved advanced new methods for testing and tuning vehicle aerodynamic performance and optimizing body construction to reduce weight while delivering top-level collision safety performance and other critical marketability objectives, such as cabin quietness and ride refinement.

Major engineering features and technologies designed to advance fuel efficiency include:

- Extensive use of lightweight materials, including a body composed of 61.5% advanced high-strength materials (with 21.3% ultra high-strength steel), to reduce vehicle weight by nearly 300 pounds compared to the outgoing model
- A V-6 engine that combines direct-injection, Honda's i-VTEC™ variable valve timing and lift control, and Variable Cylinder Management cylinder deactivation technology

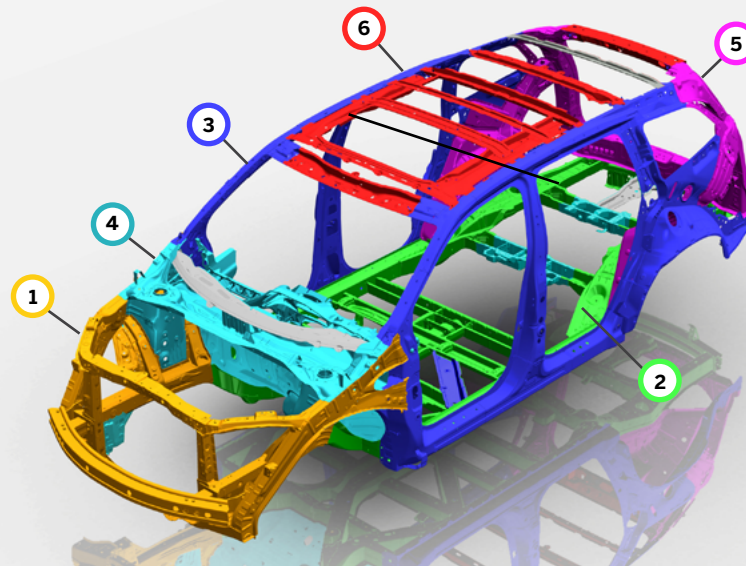


2016 Honda Pilot

- New six-speed and nine-speed automatic transmissions, applied to different trim levels, that more efficiently transmit power to the wheels

- A new, more sophisticated i-VTM4™ all-wheel-drive system that is 22 pounds lighter than the previous system and delivers improved drivability and all-weather performance
- Advanced computer simulations and wind-tunnel testing that result in a 10-percent improvement in aerodynamic efficiency versus the previous model

### 2016 Honda Pilot — Key Body Construction



- |                                |                                    |
|--------------------------------|------------------------------------|
| <b>1</b> ACE Body Construction | <b>4</b> Magnesium Hangar Beam     |
| <b>2</b> New 3-Bone Platform   | <b>5</b> Ridgid Tailgate Open Ring |
| <b>3</b> Reinforced Cabin      | <b>6</b> Roof Crush Prevention     |

[Learn more online](#)



## New Automobile Concepts, Products, and Technologies Introduced in FY15 cont'd

### 2016 Honda HR-V

The Honda HR-V, introduced in the spring of 2015, is a small and sporty crossover vehicle based on the same vehicle architecture of the company's popular Fit subcompact car. As with the Fit, the HR-V utilizes a center-mounted fuel tank that permits the second-row seat to fold completely flat to the floor, providing for a more versatile and spacious interior.



2016 Honda HR-V

- HR-V shares its powertrain with the Civic: a 1.8-liter i-VTEC™ engine mated to a continuously variable transmission (CVT) or 6-speed manual. Both the engine and CVT feature numerous friction-reducing technologies.
- Twenty-seven percent of the HR-V body is composed of ultra high-strength steel, reducing weight and aiding collision safety performance; HR-V targets the top crash safety ratings.
- With EPA fuel economy ratings of 28-mpg city and 31-mpg highway on CVT-equipped models, the HR-V launched with the highest fuel economy ratings in its competitive set.

### 2015 Acura TLX

In August 2014, Acura introduced the new TLX sports sedan, which offers customers the choice of 4-cylinder and V-6 engines. The TLX replaces both the TSX and TL models in the Acura sedan lineup, offering more performance and efficiency with greater refinement and advanced collision safety performance.

- Fifty-two percent of the body is composed of high-strength steels, 6 percent is aluminum and 2 percent is magnesium. The TLX body is more aerodynamically efficient, in part through a 15-percent reduction in frontal area compared to the outgoing TL sedan.
- The new direct-injected 4-cylinder i-VTEC™ engine is mated to an all-new 8-speed dual-clutch transmission that offers more power and torque while contributing to a 2-mpg gain in EPA city fuel economy ratings and a 4-mpg increase in EPA highway ratings versus the outgoing TSX.
- V-6-powered models feature direct injection, cylinder deactivation and idle stop, which shuts off the engine when the vehicle is stopped, such as at a stoplight. The new V-6 is mated to an all-new 9-speed automatic transmission that is 66 pounds lighter than the 6-speed transmission in the outgoing TL. EPA fuel economy ratings are improved by 1-mpg city and 5-mpg highway compared to the outgoing TL sedan.
- V-6-powered TLX models can also be equipped with a newly designed Super Handling All-Wheel Drive (SH-AWD) system that is 25 percent lighter than the previous system with a 2-percent reduction in aerodynamic drag. Models equipped with SH-AWD



2015 Acura TLX

offer a 3-mpg gain in EPA city fuel economy ratings and 5-mpg gain in highway fuel economy ratings.

[Learn more online](#)



## 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 initiated the Greenhouse Gas Initiative in FY11 to develop a more comprehensive picture of the challenges associated with tracking and reporting greenhouse gas emissions data in its supply chain. In FY15 Honda continued to work with suppliers to improve accuracy of data being reported, and also the achievement of energy reduction as a way to reduce emissions.

In FY15 Honda saw a 46-percent increase in the number of suppliers that reported Greenhouse Gas data to Honda. Increases came as more suppliers voluntarily reported, and as companies that had previously reported included sister facilities, and Honda requested additional suppliers to report their emissions. In FY2016 Honda expects see an additional 47-percent increase in the number of suppliers reporting their emission data. **This activity supports Honda’s goal of a 10-percent reduction target in the CO<sub>2</sub> emissions intensity of new-vehicle parts manufacturing in North America by 2020, compared to 2008 levels, when Honda began collecting this data.**

### Greenhouse Gas Reduction Results

Honda has seen a 4-percent reduction in reported CO<sub>2</sub> emissions from North American new-vehicle component suppliers since 2008. In 2014, suppliers reporting CO<sub>2</sub> emissions represented 84 percent of Honda’s total new-vehicle parts purchasing in North America.

### Environmental Purchasing Symposium

Honda hosted its fourth six-region environmental purchasing symposium in Ohio during FY15 in order to set clear, concise direction for suppliers globally. A key part of this meeting was to establish communicating with suppliers as “One Team, One Voice,” a slogan that represents the unified awareness and action among Honda’s purchasing divisions. This approach is an important step to assure the initiative is consistently communicated throughout the entire global supply chain.

## 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 FY15, through continued load planning, dynamic release of small orders and continuous freight volume evaluation, Honda significantly reduced truck miles and CO<sub>2</sub> emissions.

### Cube Utilization Efforts

ACTION	FY15 RESULTS	
	TRUCK MILES AVOIDED	CO <sub>2</sub> EMISSIONS AVOIDED
<b>Daily Load Planning</b> to ensure material arrives at required time while fully cubing trucks.	1,096,092 miles	1,705.70 metric tons
<b>Dynamic release</b> of small volume orders onto available trailer space.	199,794 miles	310.9 metric tons
<b>Pulling ahead</b> freight from non-aligned production days, collaborating non-OEM freight, and combining routes.	1,479,031 miles	2,300.70 metric tons

### Development of Alternative-Fuel Utilization in Honda Logistics

Honda has established a public on-site CNG fueling station adjacent to its Marysville, Ohio, auto plant to support the use of CNG trucks in local transportation routes. Trucks using this station can fuel locally and travel to and from pick-up sites using less than a tank of CNG to reduce overall CO<sub>2</sub> emissions by

approximately 25 percent for the affected routes. Because of the lack of an overall fueling infrastructure, Honda partnered with a service provider to install and operate a fueling station that opened the second quarter of FY2015.

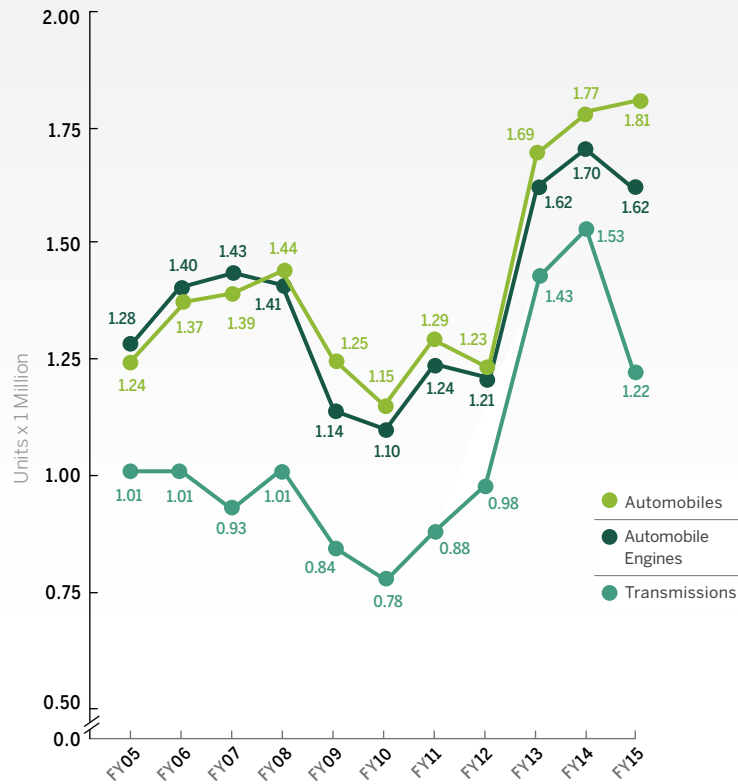




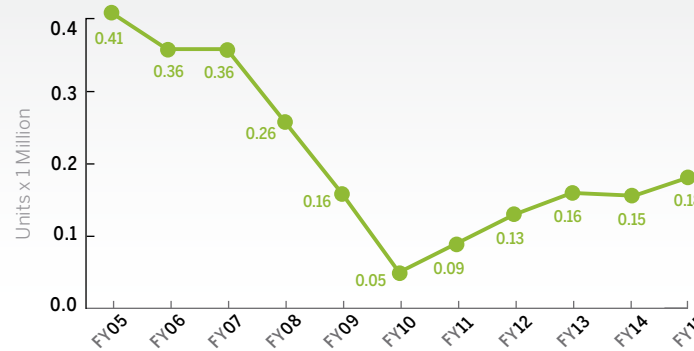
## Production Activity in North America

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

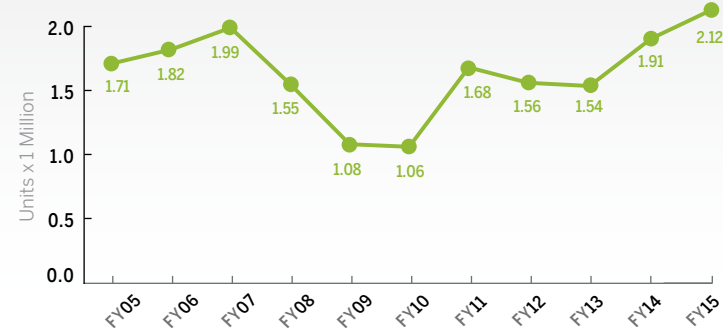
AUTOMOBILE PRODUCTION TOTALS



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. Fourteen of the 15 Honda plants operating and producing products for commercial delivery in North America at the end of FY15 were certified to the ISO 14001:2004 standard.

**Important note concerning this section:** The 2015 North America Environmental Report manufacturing data reports only data from the subsidiary operations in North America currently producing finished products (automobiles, power equipment products, and powersports products). Three additional manufacturing plants, those of Honda Aircraft Company Inc. and Honda Aero Inc., as well as the Performance Manufacturing Center, are not currently included because they have had no commercial product deliveries.



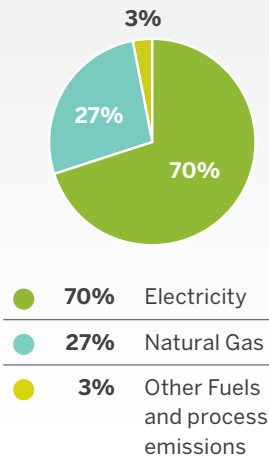
## CO<sub>2</sub>e Emissions

Approximately 97 percent of CO<sub>2</sub>e 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.

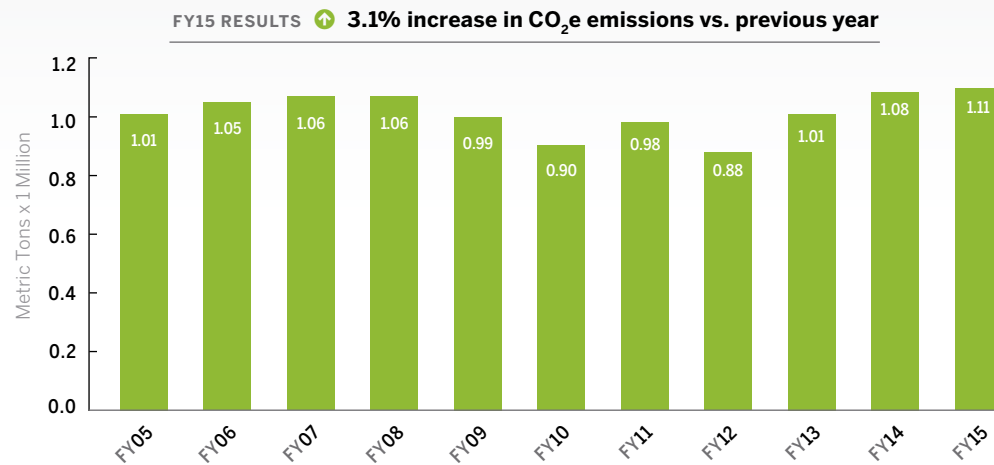
Despite efficiencies resulting from high utilization of auto plant production capacity in North America in FY15, greenhouse gas emissions intensity increased slightly due to ongoing expansion of plant operations and increasing automation. Powersports CO<sub>2</sub>e emissions intensity improved by two percent. Power equipment CO<sub>2</sub>e emissions intensity increased due to production efficiency challenges.

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

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



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



<sup>1</sup> Total CO<sub>2</sub>e emissions (from consumption of electricity and natural gas) include the 15 listed North American manufacturing operations.

**CO<sub>2</sub>e Emissions** cont'd

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

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

**FY15 RESULTS**

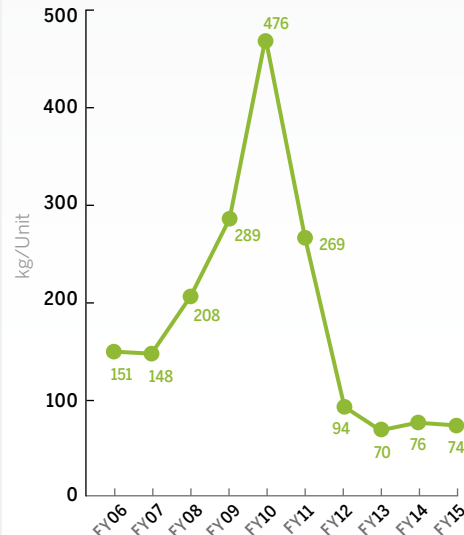
↑ **1.2% increase vs. previous year**



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

**FY15 RESULTS**

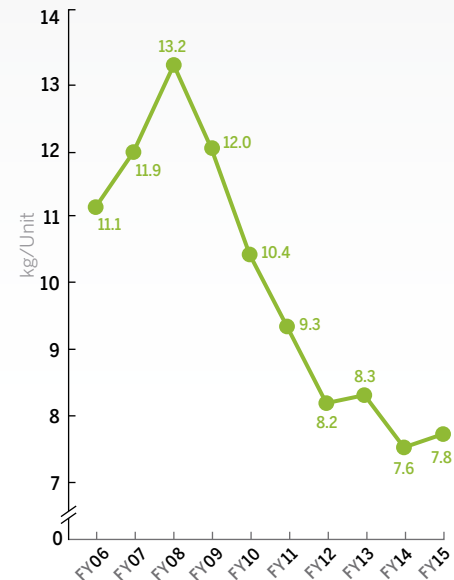
↓ **2.3% decrease vs. previous year**



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

**FY15 RESULTS**

↑ **2.6% increase vs. previous year**



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

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

<sup>3</sup> Electricity emission factors updated to eGRID2014 Version 1.0 year 2010 GHG Annual Output Emission Rates (U.S. plants); Climate Registry 2014 Default Emission Factors Table 14.2 (Canada plants); Programa GEI Mexico — Factor de emision electrico 2012 (Mexico plants).

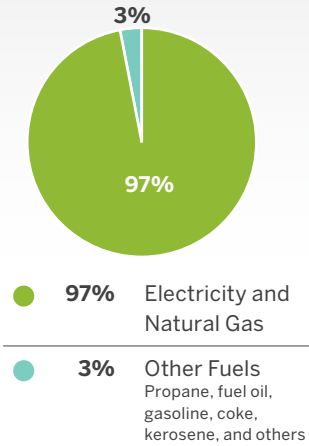
## Energy Use

Electricity and natural gas represent approximately 97 percent of total energy consumption by Honda's North American manufacturing plants. Auto manufacturing operations were able to maintain the energy intensity of auto manufacturing despite ongoing expansion

of plant operations and increasing automation. Total energy use increased slightly due to start-up of the new Celaya, Mexico, auto plant, existing plant expansion, increased automation and in-sourcing of manufacturing processes at multiple facilities.

### Energy Consumption

#### ENERGY USE BY SOURCE



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

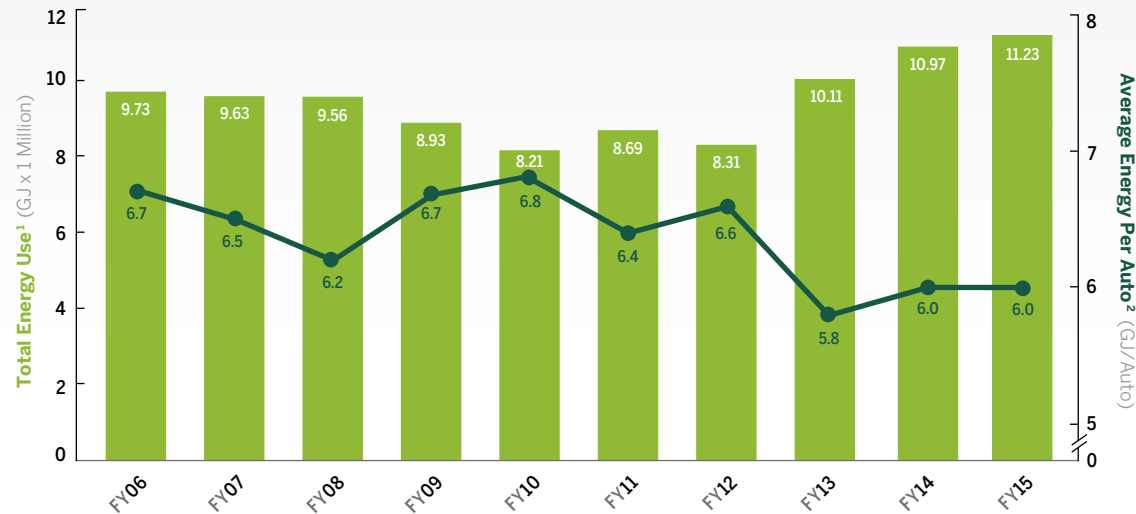
##### FY15 RESULTS

##### Total Energy Use:

⬆️ 2.3% increase vs. previous year

##### Energy Use Per Auto:

↔️ No change vs. previous year



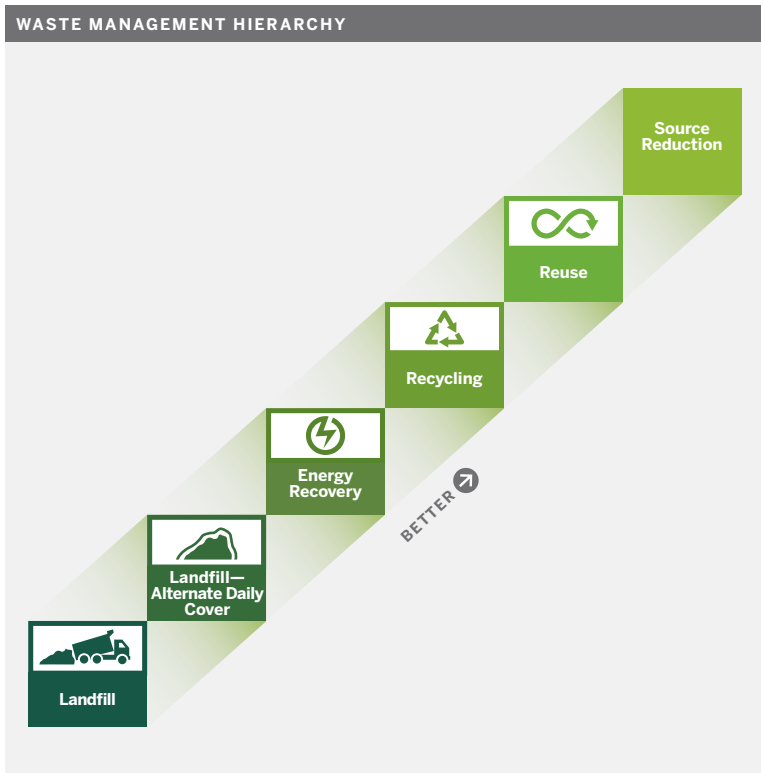
<sup>1</sup> Total energy use (from consumption of electricity and natural gas) includes all 15 North American auto, powersports and power equipment manufacturing operations.

<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 generation and total solid waste per unit of automobile production increased primarily due to inefficiency related to start-up of automobile production in Celaya, Mexico. Honda has created a hierarchy that ranks waste management methods based on environmental preference (see illustration below). Use of 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.



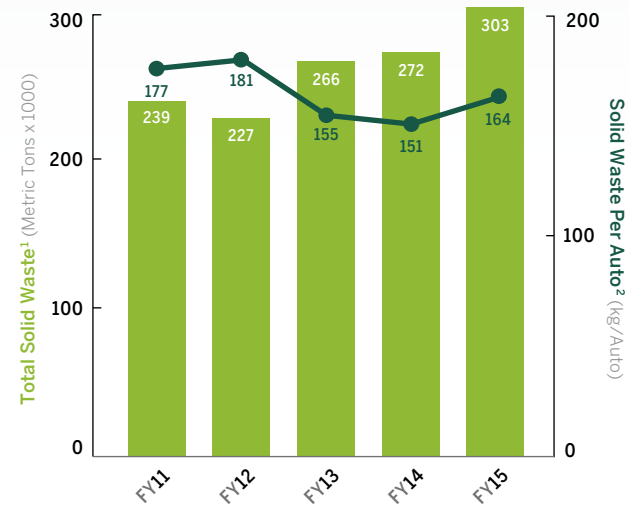
## Waste from Manufacturing Operations

### TOTAL SOLID WASTE FROM MANUFACTURING IN NORTH AMERICA

#### FY15 RESULTS

**Total Solid Waste:**  
↑ 11.4% increase  
vs. previous year

**Solid Waste Per Auto:**  
↑ 8.6% increase  
vs. previous year



<sup>1</sup> Total waste includes the 15 listed North American manufacturing facilities operating in FY15 and includes all auto-related manufacturing operations; it does not include powersports and power equipment production operations. Beginning with FY12 data, waste at the Guadalajara, Mexico plant is allocated between automobile and motorcycle production based on sales value.

<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 Guadalajara, Mexico plant 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 percent of all operating waste — for all North American auto, powersports and power equipment manufacturing operations. This goal was achieved from FY11 to

FY14; however, landfill waste increased to 4.5% of all operating waste in FY15 due in large measure to issues related to the start of production operations at the Celaya, Mexico auto plant.

Honda Zero Waste to Landfill Initiative

LANDFILL WASTE FROM MANUFACTURING FACILITIES IN NORTH AMERICA

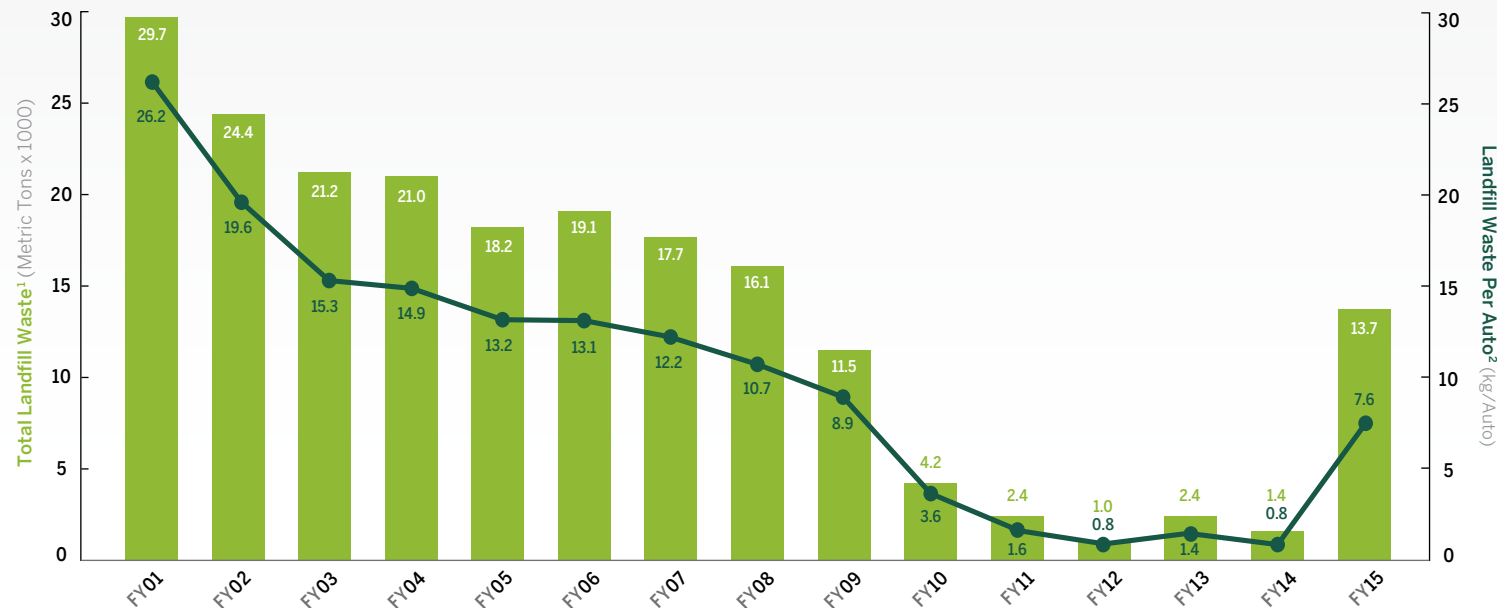
FY15 RESULTS

Total Landfill Waste:

- ⬇️ 54% decrease vs. baseline (FY01)
- ⬆️ 879% increase vs. previous year

Landfill Waste Per Auto:

- ⬇️ 71% decrease vs. baseline (FY01)
- ⬆️ 850% increase vs. previous year



<sup>1</sup> Total landfill waste includes all 15 North American auto, powersports and power equipment 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.

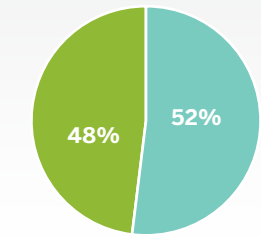


## Water Use

Honda's North American plants continued to strive to improve water efficiency. In FY15, total water use and auto water use intensity increased slightly due to increased comfort cooling requirements from building expansions and the impact from start-up of the Celaya, Mexico auto plant.

### Water Use

#### WATER USE BY SOURCE



- 52% Purchased from Local Utilities
- 48% Direct Ground Water Withdrawal

#### WATER USE IN NORTH AMERICAN MANUFACTURING FACILITIES

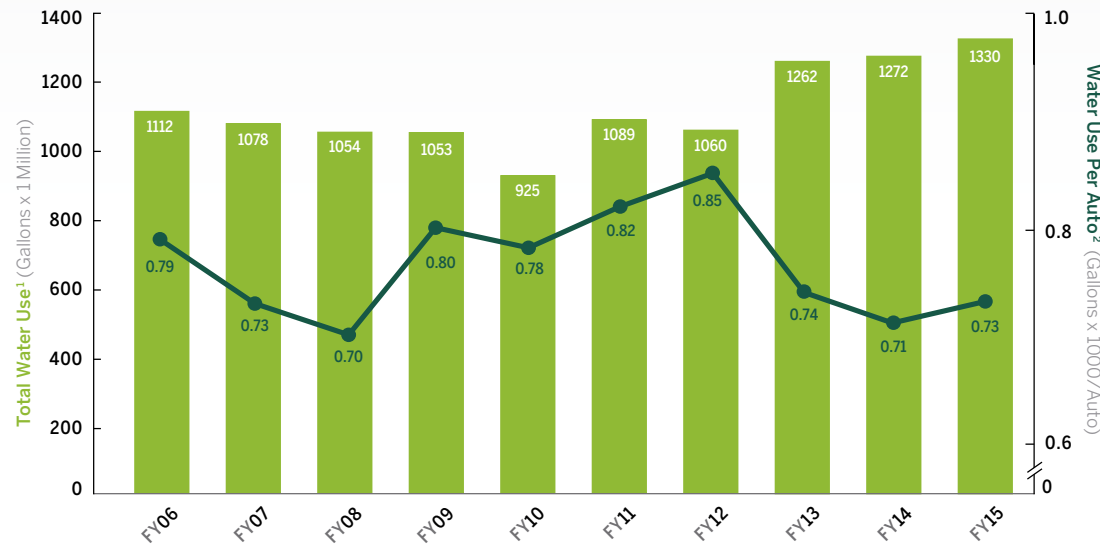
##### FY15 RESULTS

##### Total Water Use:

↑ 4.6% increase vs. previous year

##### Water Use Per Auto:

↑ 2.8% increase vs. previous year



<sup>1</sup> Total water use includes all 15 North American auto, powersports and power equipment 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

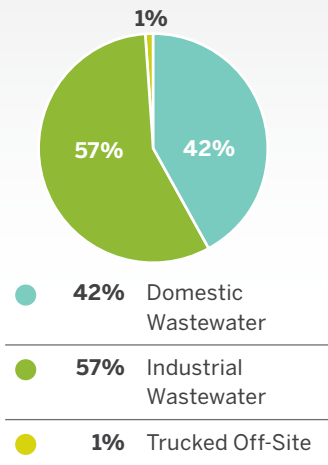
Domestic wastewater is generated from the use of restrooms, water fountains, cafeteria operations, and air conditioning related to associate (employee) comfort. Industrial wastewater is generated primarily from painting, surface treatment, and machining operations. Plants that generate industrial wastewater pre-treat the wastewater 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. About 1 percent of wastewater is trucked off-site for treatment.

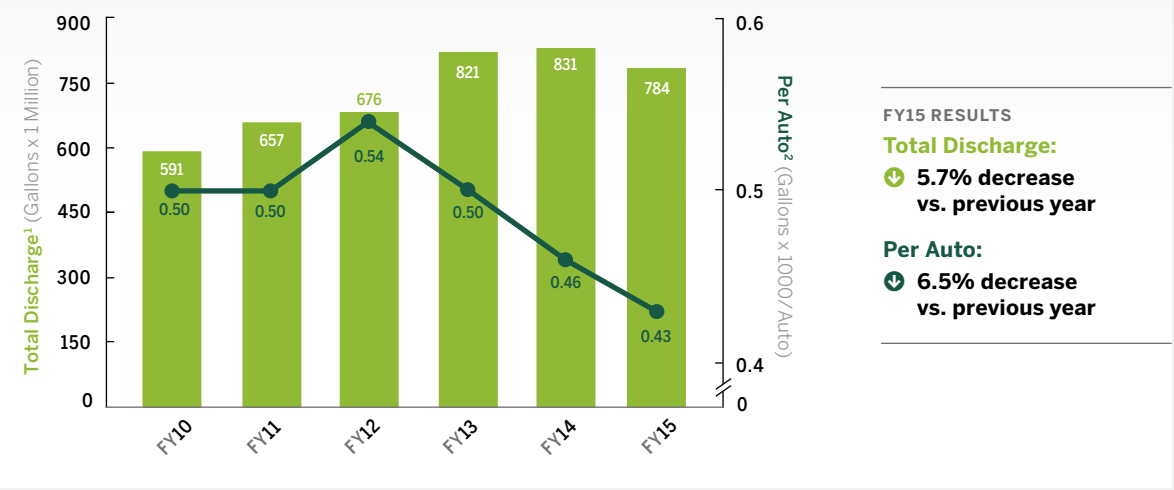
Manufacturing plants also discharge wastewater directly to local waterways under National Pollutant Discharge Elimination System (NPDES) permits. These permits allow the discharge of storm water associated with industrial activities, water plant lime sedimentation basin discharge, cooling tower blow down and air conditioning condensate discharge. The NPDES permits set contaminant limits and mandate periodic sampling and reporting.

Wastewater Discharge and Disposal

WASTEWATER DISCHARGED FROM N.A. MANUFACTURING FACILITIES



INDUSTRIAL WASTEWATER DISCHARGED FROM NORTH AMERICAN MANUFACTURING FACILITIES



**FY15 RESULTS**  
**Total Discharge:**  
 ↓ 5.7% decrease vs. previous year  
**Per Auto:**  
 ↓ 6.5% decrease vs. previous year

<sup>1</sup> Total wastewater discharged includes all 15 North American auto, powersports and power equipment 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 U.S. federal and state and Canadian provincial government requirements. Honda factories are routinely inspected for compliance with legal requirements.

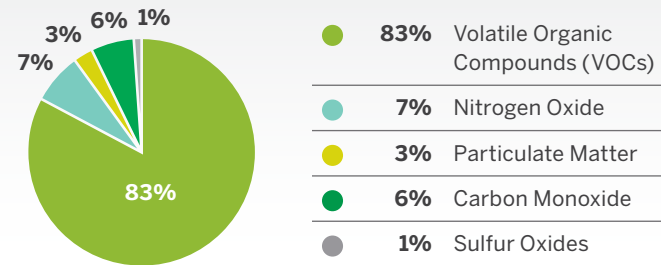
### VOC Emissions from Auto Body Painting

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 2014 were well below the company’s targeted maximum of 20 g/m<sup>2</sup>.

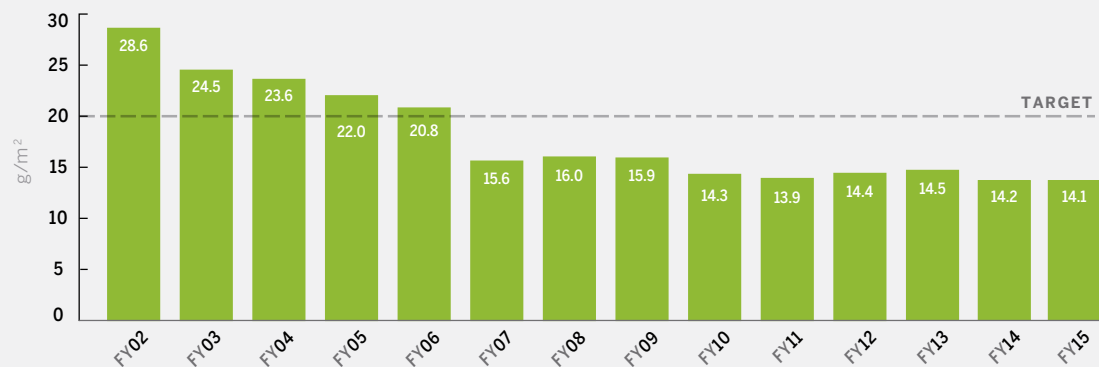
## Air Emissions

In calendar year 2014, Honda’s North American manufacturing plants released approximately 4,400 metric tons of criteria air pollutants. Overall, 83 percent 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



### FY15 RESULTS

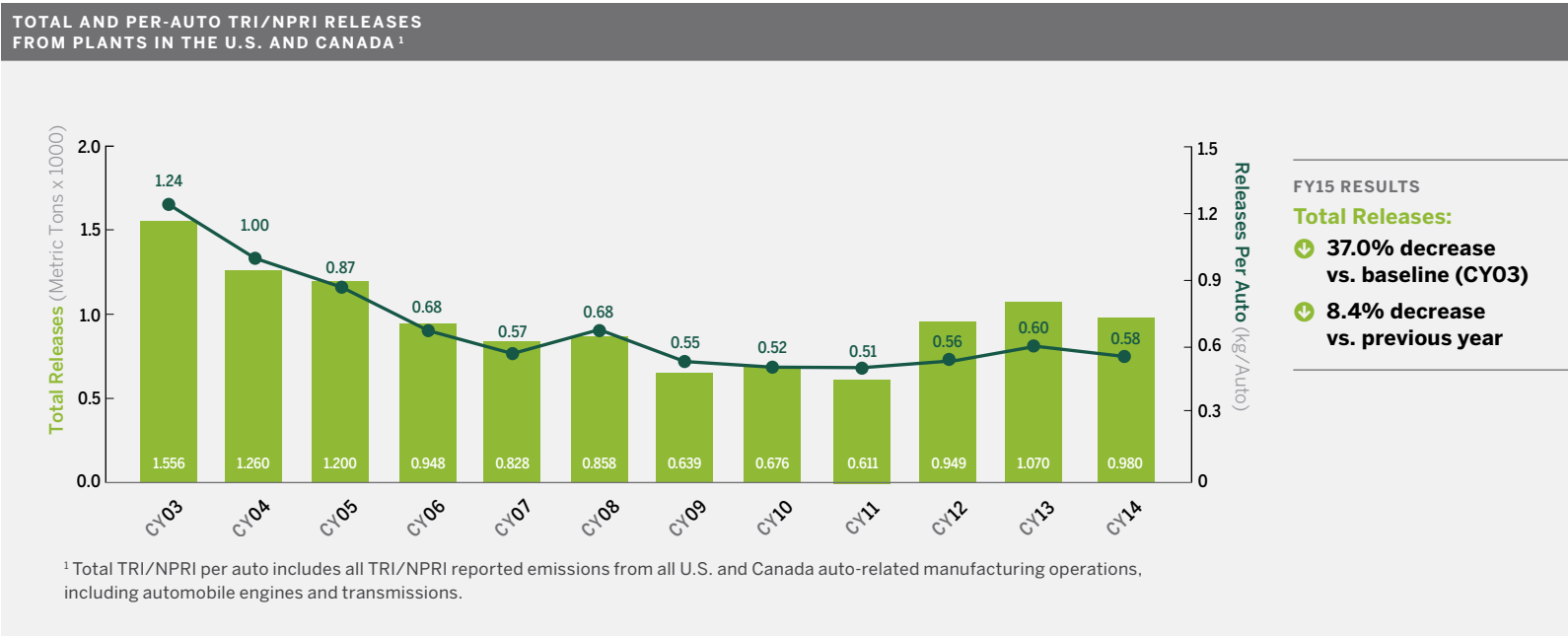
↓ **0.07% decrease vs. previous year**

Note: VOC emissions do not include emissions from the new auto plant in Celaya, Mexico.





## Chemical Releases



Honda has reduced its total Toxic Release Inventory (TRI) and National Pollutant Release Inventory (NPRI) emissions by about 37 percent since calendar year 2003, despite significant expansions in production capacity. Automobile-specific TRI/NPRI emissions per unit of production were reduced about 53 percent in the United States and Canada in the same period.

### 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.

## Honda Facility Environmental Upgrades

Honda continuously seeks ways to improve energy management and to implement environmentally responsible processes in all of its manufacturing plants. From incorporating the latest technologies into construction and expansion plans, to discovering new solutions to production challenges in existing facilities, Honda challenges each of its manufacturing facilities to find practical and impactful ways to decrease their environmental footprints. In addition, three North American manufacturing plants earned an Energy Star rating from the U.S. Environmental Protection Agency.

### Ohio

Associates at the Marysville and East Liberty auto plants installed energy-saving LED lighting in several locations including assembly departments, service center work bays, parking lots, entranceways and purchasing areas. The new lights use 35 percent less electricity while providing as much as 20 percent more light — saving 1.5 million tons of CO<sub>2</sub> per year from the reduced power usage alone.

Honda's Performance Manufacturing Center in Marysville, Ohio, which will build the Acura NSX sports car, installed high-efficiency hot-water heaters and a variable-speed drive motor for its HVAC system to reduce energy usage. A enthalpy wheel to reduce energy on the HVAC systems in locker rooms was also installed.

The Marysville, Ohio, auto plant, which builds the Honda Accord, Acura TLX and Acura ILX, installed a hydrogen fueling station that has allowed the facility to begin use of tow motors and forklifts powered by hydrogen fuel cells. In the initial stage of the project, 51 of these vehicles exchanged their propane-powered motors for hydrogen, eliminating the emissions produced by the propane fuel. The introduction of the hydrogen-powered vehicles has eliminated 1,350 metric tons of CO<sub>2</sub> emissions per year from the facility.

The Honda Support Office, located in Marysville, also incorporated direct-fired boilers into water-heating systems.

### Canada

Honda's manufacturing plants in Alliston, Ontario, which build Civic, increased insulation and improvements to its HVAC systems to reduce energy usage. The plants also installed energy-saving LED lighting.

### Indiana

Honda's plant in Greensburg, Indiana, which builds Civic, made large gains in reducing energy usage by implementing an off-shift energy program. The program surpassed its electric-usage-reduction target by 3.6 million kilowatt hours and surpassed its natural-gas-usage-reduction target by 50,000 Mcf.

Additionally, the plant's wastewater management system, as well as changes to the chemical makeup of its painting process, reduced the discharge of nickel from the plant by 50 percent and has cut paint sludge by more than 25 percent. The plant has also benefitted from the expanded use of energy-saving LED lighting.



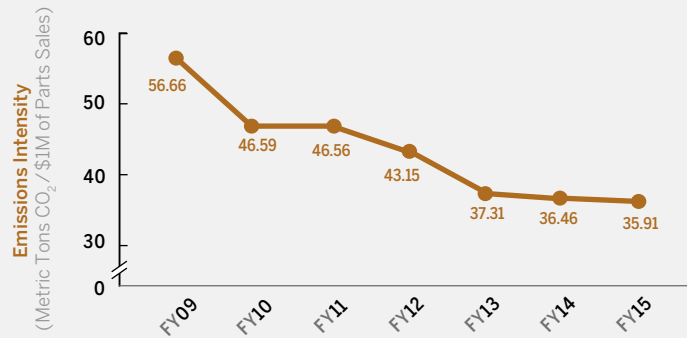
Honda Manufacturing of Indiana monitors its energy use in real time to identify equipment that can be turned off during breaks or between production shifts to meet energy-use targets.



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

American Honda aspires to become a leader in the environmental arena by taking on bold challenges to reduce CO<sub>2</sub> emissions through efforts to use more fuel-efficient trucks, shift more cargo from truck to rail, more efficient packing of tractor trailers and the reengineering of 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.

CO<sub>2</sub> EMISSIONS INTENSITY OF U.S. SERVICE PARTS SHIPMENTS



**FY15 RESULTS**

↓ **36.6% reduction in emission intensity of parts shipments vs. baseline (FY09)**

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

#### Convert Trucks to Natural Gas

Honda continued to test the conversion of trucks to natural gas for domestic routes. Six natural gas-powered tractors were put into service in FY15. This resulted in a reduction in CO<sub>2</sub> emissions of 100 MT in FY15.

↓ **100 metric tons of CO<sub>2</sub> reduction in FY15**

#### Green Fleet Expansion

Honda continued to increase its green fleet for daily parts delivery with newer, more fuel-efficient models in FY15. 190 of 207 of the daily delivery fleet were replaced with more efficient models from 2012–2014. In FY15, 10 trucks were replaced with the higher-efficiency trucks.

↓ **599 metric tons reduction in FY15**

#### Long-Term Natural Gas Project

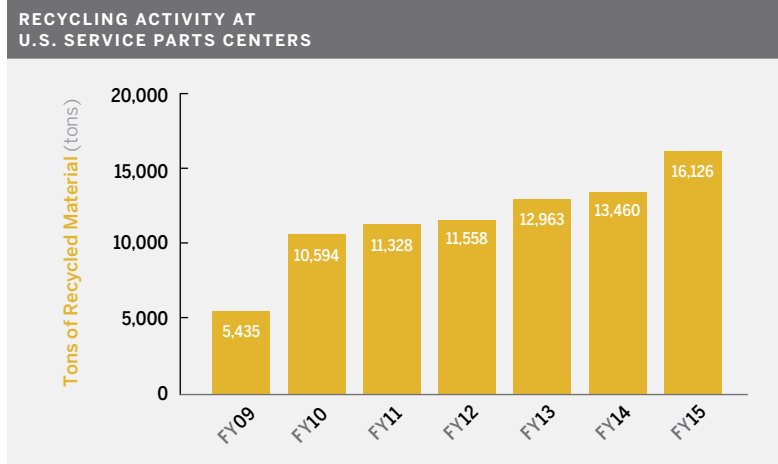
A cross-functional team has been testing the potential of implementing natural gas delivery trucks at American Honda's parts distribution centers to further minimize the environmental impact of parts shipments.



## 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 Honda's nine service parts distribution centers in the U.S. resulted in 16,126 tons of packaging and shipping material being diverted from landfill in FY15.

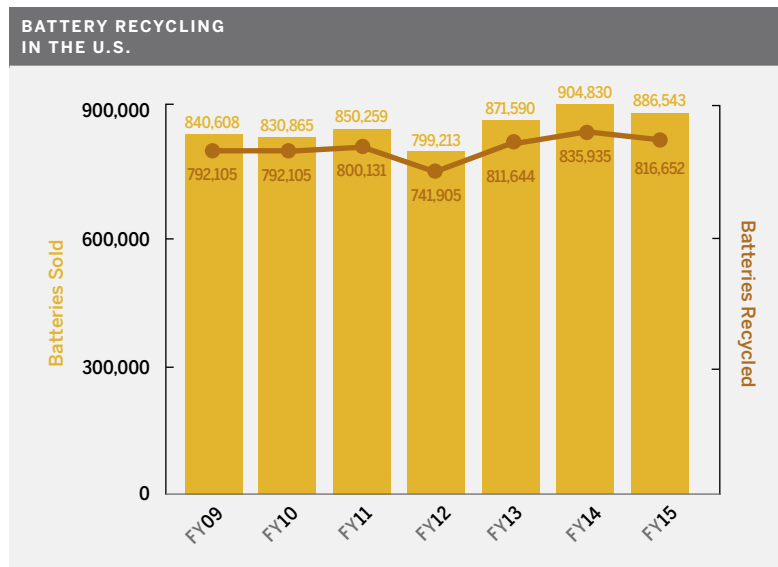
Through the use of NH Circles (Quality Circles) and associate efforts, all nine U.S. parts centers achieved zero waste to landfill for the first time, in May 2014, and in four months during the full fiscal year 2015, ended March 31, 2015.



## Recycling Improvements

### 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.



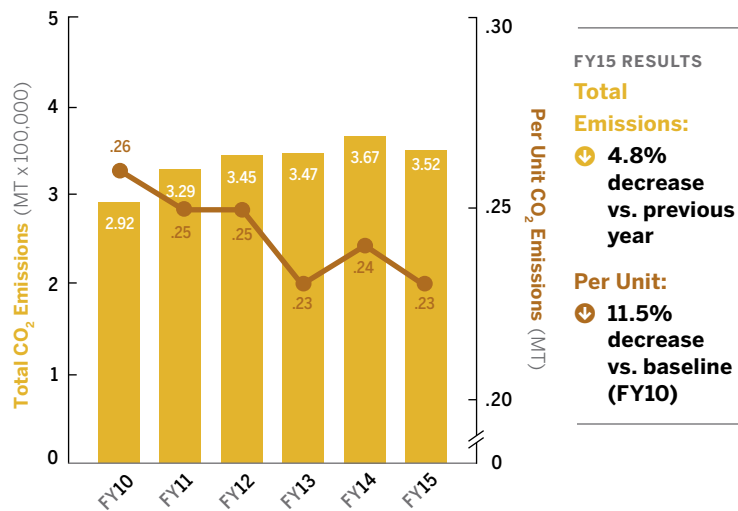


## Sales and Distribution of Honda Products

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 FY12, Honda has reduced the CO<sub>2</sub> emissions intensity of automobile shipments in the U.S. by 8 percent.

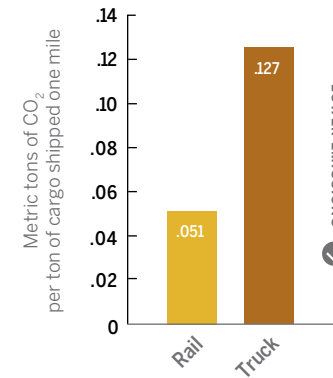
### Modal Efficiency

CO<sub>2</sub> EMISSIONS INTENSITY OF AUTOMOBILE SHIPMENTS IN THE U.S.



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

The vast majority of Honda and Acura automobiles are moved by train. In FY15 70.0 percent of all Honda and Acura automobiles manufactured in the U.S. or arriving at U.S. ports were transported by train, down from 82.2 percent in FY14, 80.5 percent in FY13 and 79.5 percent in FY12. This reduction in rail percentage was a result of the continued shortage of rail equipment in the pooled railcar fleet, Honda's increasing reliance on trucking, and the additional truck shuttles required to offset congestion at origin locations.



#### More Fuel-Efficient Trucks

100 percent of American Honda's U.S. vendor fleet of car-hauling trucks was EPA SmartWay Transport certified in 2015. This is consistent with the 100 percent result reported in 2014 and 2013.



#### Honda Employs AutoMax Railcars

In 1998, Honda participated in an industry task force with other shippers and railroads to develop a new technology railcar for the new millennium. Of the designs considered, the AutoMax was the only one

to reach full production. In 1998 Honda partnered with BNSF to place the first order for this equipment. In 1999, 100 percent of the BNSF AutoMax were used in Honda service. 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. 21 percent of vehicles moved by rail in FY15 were transported on AutoMax cars, down slightly from the 25 percent of vehicles moved by rail in FY14, the 24 percent of vehicles transported in FY13 and the 37 percent in FY12. Variations are due to increased product shipments, the limited supply of AutoMax railcars and the increasing use of AutoMax equipment by other shippers.



## Honda and Acura ‘Green Dealer’ Program



American Honda launched a ‘Green Dealer’ program in FY12 to help independently owned and operated Honda and Acura automobile dealers in the U.S. reduce their environmental impact. The program recognizes

dealers who implement recommended sustainable practices with three award levels — Silver, Gold and Platinum. The award criteria are based on a verified reduction in energy use and a rigorous points system that incorporates environmental improvement measures. Professional engineers evaluate dealerships’ environmental performance and recommend strategies for reducing their environmental impact.

At the end of FY15, 293 U.S. Honda and Acura dealers were enrolled in the program and 67 received an award. Improvements made at these dealerships resulted in a total annual reduction of 7,500 tons of CO<sub>2</sub>. Additionally, the program was extended to motorcycle and power equipment dealers. To establish Honda’s leadership in dealership sustainability, the 93-page Honda “Green Dealer” Guide was created. This guide synthesizes three years of program development, providing a blueprint for reducing both operating costs and energy use in auto dealerships. The guide will be updated as necessary to reflect new technology advancements.

Honda's Green Dealer Guide and a list of U.S. dealers who have earned the Honda or Acura Environmental Leadership Award are listed on [greendealer.honda.com](http://greendealer.honda.com).

### The program offers three achievement levels:

#### Award Criteria<sup>1</sup>



	SILVER AWARD	GOLD AWARD	PLATINUM AWARD
<b>Existing Facilities</b> (more than 3 years old)	30 points 10% energy use reduction	45 points 30% energy use reduction	60 points 50% energy use reduction
<b>Recent Facilities/ Renovations</b> (less than 3 years old)	40 points	55 points	70 points
<b>New Builds</b>	Based on Environmental Leadership Design Guidelines for Honda Dealership Image Program <sup>4</sup>		

*Fast Track to Platinum — LEED certification by U.S. Green Building Council<sup>2</sup> or “Electric Grid Neutral”<sup>3</sup>*

<sup>1</sup> Full program details and energy reduction requirements subject to change as the program changes and grows. <sup>2</sup> U.S. Green Building Council is not affiliated with American Honda Motor Co., Inc. <sup>3</sup> “Electric Grid Neutral” = When averaged over a year, a dealership uses zero net grid electricity by offsetting its grid electric use with on-site renewable generation. <sup>4</sup> Award is based on existing energy-efficiency measures only since energy reduction cannot be measured.





## Honda and Acura 'Green Dealer' Program cont'd



Green roof at Headquarter Honda in Clermont, Florida

### Sharing our dream with others

To benefit society, the Honda "Green Dealer" Guide was released to the public, intended to help dealers across all brands and commercial buildings with similar energy needs. The Honda "Green Dealer" Guide is a roadmap to reducing energy and saving money: Honda and Acura dealers enrolled in the program cut their cumulative annual operating costs by over \$800,000.

By releasing the guide, Honda hopes to initiate industry-wide sustainability. Based on program data, if a 10 percent energy savings was achieved at the approximately 17,000 new car dealerships across all brands throughout America, 800,000 tons of CO<sub>2</sub> could be eliminated annually.

Honda and Acura dealers who received the Environmental Leadership Award for verified energy reductions implemented numerous environmental best practices such as:

- replacing lighting with LEDs
- installing motion sensors that turn lights off when not in use
- replacing older air conditioning and heating systems with more energy-efficient equipment
- setting thermostats at optimal temperatures when the dealership is closed
- installing solar panels
- adding rainwater collection systems, and planting native vegetation to reduce irrigation water use

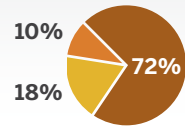


## Automobiles

### Fuel Efficiency

According to the latest government research, approximately three quarters of a typical vehicle's life-cycle GHG emissions occurs during in-use operation. As fuel economy continues to improve, the relative impact of manufacturing will climb.

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



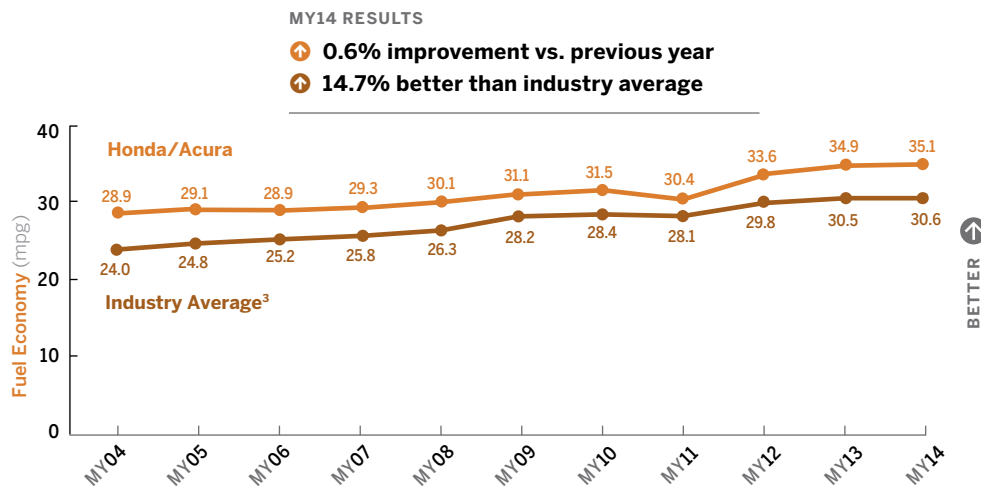
- 72% Product In-Use
- 18% Upstream Fuel Production
- 10% Product Manufacturing

<sup>1</sup> Source: Argonne National Laboratory's GREET2\_2012 life-cycle emissions model. Results shown for a 25 mpg conventional gasoline vehicle.

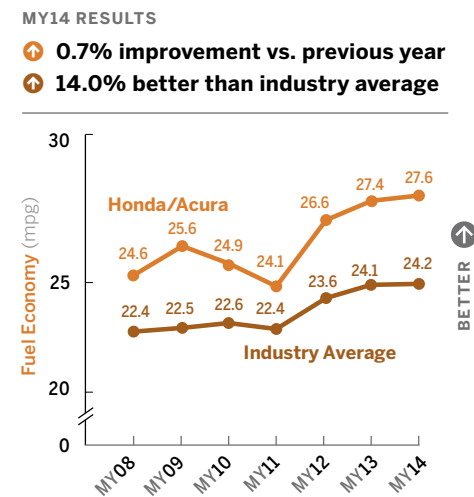
### Corporate Average Fuel Economy (CAFE) and EPA "Window-Label" Fuel Economy

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.

#### U.S. CAR AND LIGHT TRUCK FLEETWIDE UNADJUSTED FUEL ECONOMY BY MODEL YEAR<sup>2</sup>



#### U.S. CAR AND LIGHT TRUCK FLEETWIDE ADJUSTED FUEL ECONOMY<sup>2</sup> BY MODEL YEAR<sup>3</sup>



<sup>2</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>3</sup> Source: U.S. Environmental Protection Agency: Light-Duty Automotive Technology, Carbon Dioxide Emissions, and Fuel Economy Trends: 1975 through 2014, published October 2014



Automobiles cont'd

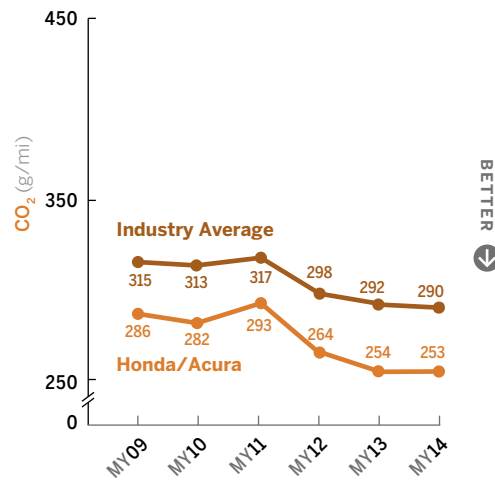
Fleetwide CO<sub>2</sub> Emissions of U.S. Automobiles

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. CAR AND LIGHT TRUCK FLEETWIDE UNADJUSTED COMPOSITE CO<sub>2</sub> EMISSIONS BY MODEL YEAR<sup>1</sup>

MY14 RESULTS

- ↓ 0.4% reduction vs. previous year
- ↑ 12.8% better than industry average

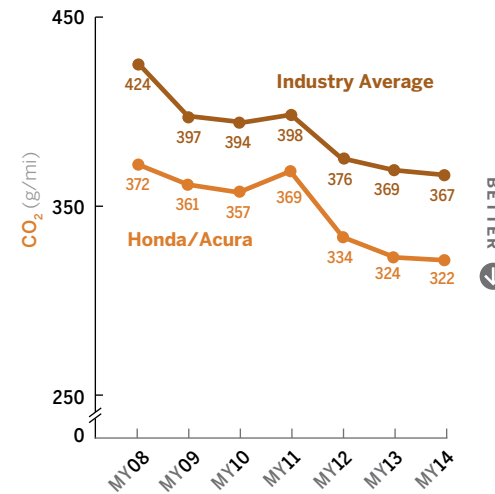


<sup>1</sup> Source: U.S. Environmental Protection Agency: Light-Duty Automotive Technology, Carbon Dioxide Emissions, and Fuel Economy Trends: 1975 through 2014, published October 2014 (Table 4.5)

U.S. CAR AND LIGHT TRUCK FLEETWIDE ADJUSTED COMPOSITE CO<sub>2</sub> EMISSIONS BY MODEL YEAR<sup>2</sup>

MY14 RESULTS

- ↓ 0.6% reduction vs. previous year
- ↑ 12.3% better than industry average



<sup>2</sup> Source: U.S. Environmental Protection Agency: Light-Duty Automotive Technology, Carbon Dioxide Emissions, and Fuel Economy Trends: 1975 through 2014, published October 2014 (Table 4.3)

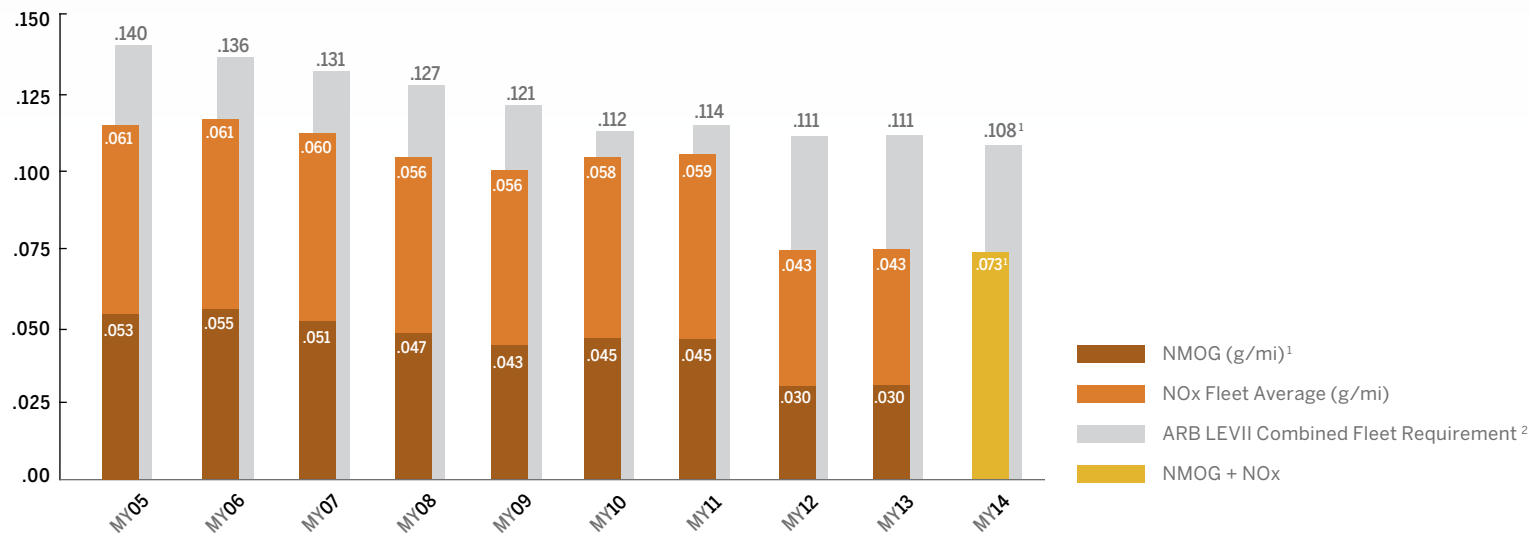


## Automobiles cont'd

### Tailpipe Emissions

Non-methane organic gases (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.

FLEET AVERAGE NMOG VS. ARB FLEET REQUIREMENT (CALIFORNIA)



<sup>1</sup> Source: NMOG reports submitted to the California Air Resources Board by Honda.

<sup>2</sup> Standards in MY2014 are for NMOG + NOx. Prior to MY2014, only a NMOG standard was applicable. Estimated NMOG + NOx levels are shown here for comparison purposes only.



## Powersports Products

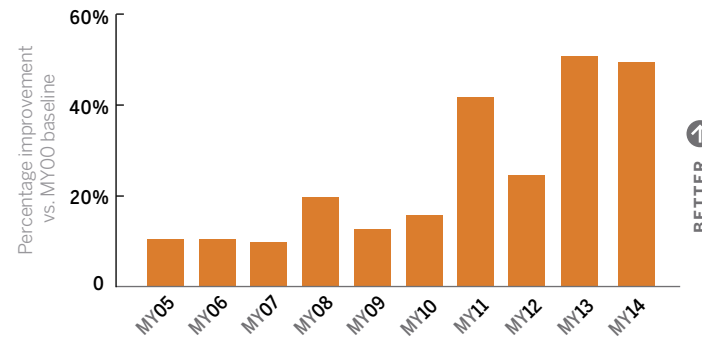
### Fuel Efficiency

Since 2000, Honda has achieved a 49 percent improvement in the fleet-average fuel economy of motorcycles sold in North America,<sup>1</sup> primarily through the expanded use of programmable electronic fuel injection (PGM-FI) and changes in its model mix to smaller, more fuel-efficient products.

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

##### MY14 RESULTS

↑ **49% 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.

Powersports Products cont'd

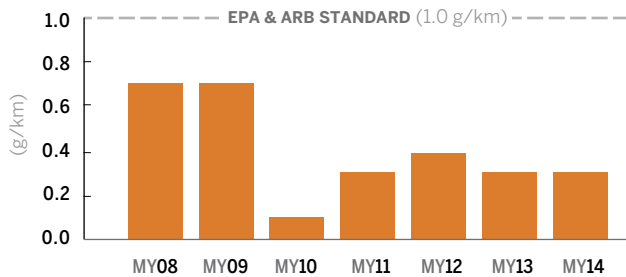
Tailpipe Emissions for Motorcycles, All-Terrain Vehicles (ATVs) and Utility Vehicles (UTVs)

In model year 2014, 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>

MY14 RESULTS

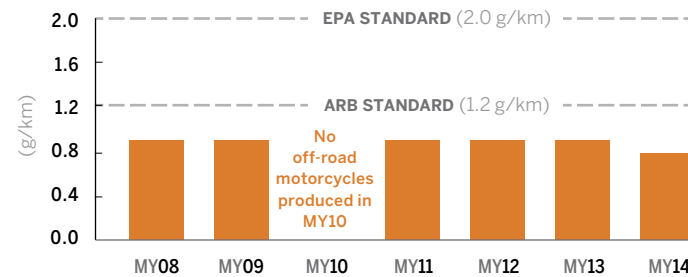
➔ No change from baseline results (MY08)



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

MY14 RESULTS

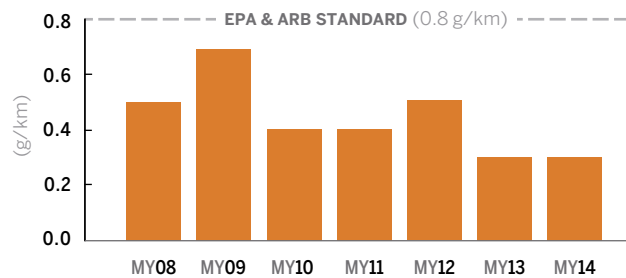
⬇️ 11% decrease from baseline (MY08)



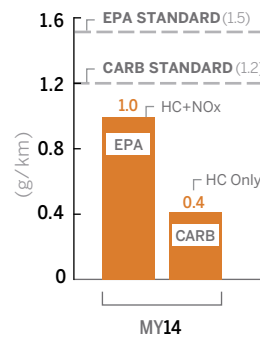
CLASS III MOTORCYCLE FLEET HC AND NO<sub>x</sub> EMISSIONS<sup>1</sup>

MY14 RESULTS

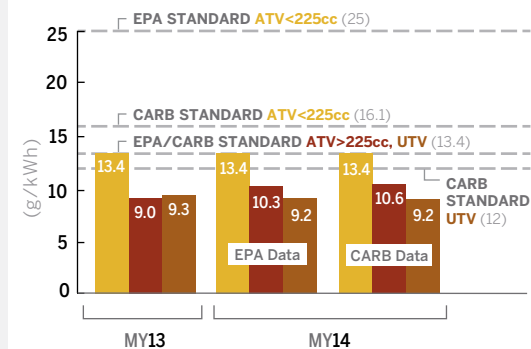
➔ No change from baseline results (MY08)



CHASSIS DYNO CERTIFIED ATV & UTV EMISSIONS<sup>1,2</sup>



ENGINE DYNO CERTIFIED ATV & UTV EMISSIONS (HC+NO<sub>x</sub>)<sup>1,2</sup>



KEY  
■ ATV <225cc    ■ ATV >225cc    ■ UTV    ■ All ATV

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

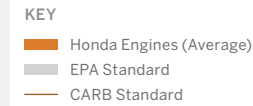
<sup>2</sup> Prior to MY14, Honda exclusively used the EPA and CARB's alternate engine dynamometer method for ATV and UTV certification. Starting with MY14, the EPA required the phase-out of the alternate certification method for ATVs and UTVs (except those under 100cc) and the transition to chassis dynamometer certification. The MY14 phase-in requirement was for 50% of the ATV and UTV fleet.



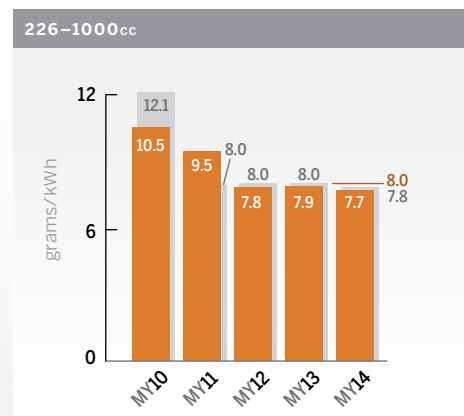
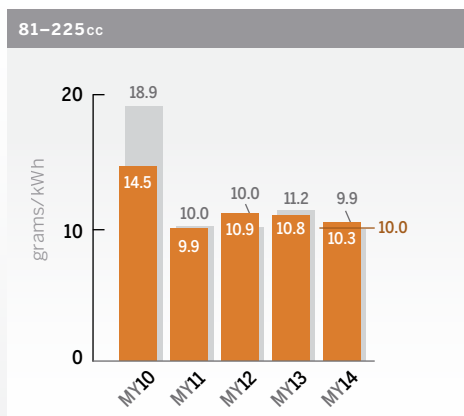
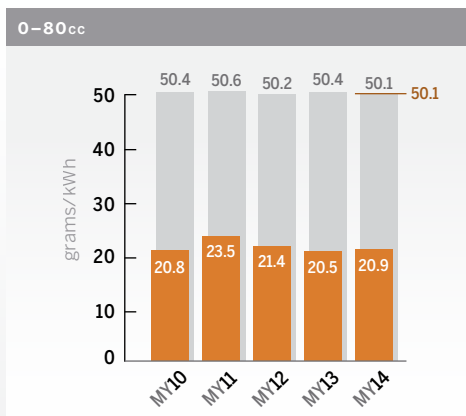
## Power Equipment Products

### Criteria Air Pollutants for Honda Engines Sold in the U.S.

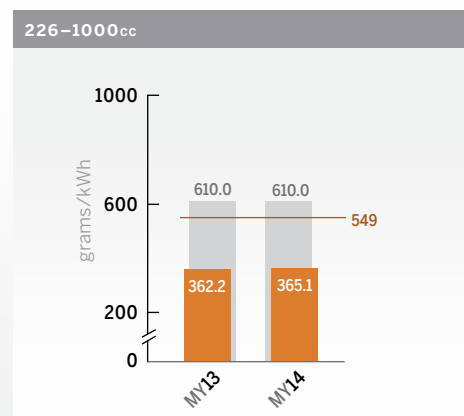
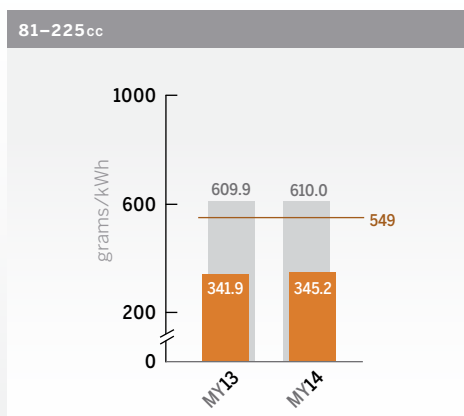
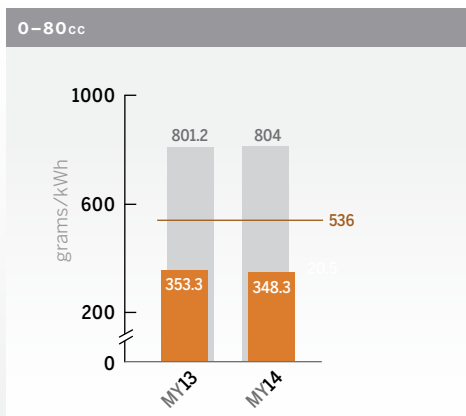
Honda achieves emissions substantially below U.S. EPA standards for 0-80cc engines due to its use of advanced, 4-stroke engine technology with multi-position carburetors. Honda's 81-225cc engines are slightly above the stringent standard implemented in 2012 but are compliant through the use of credits. 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.



#### FLEET AVERAGE: HC+NO<sub>x</sub> EMISSIONS



#### FLEET AVERAGE: CO EMISSIONS



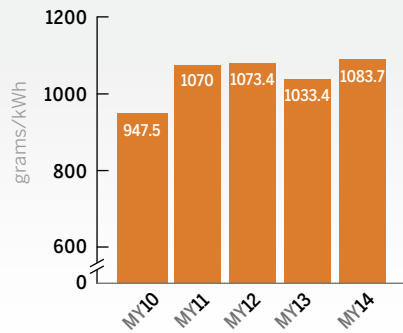


## Power Equipment Products cont'd

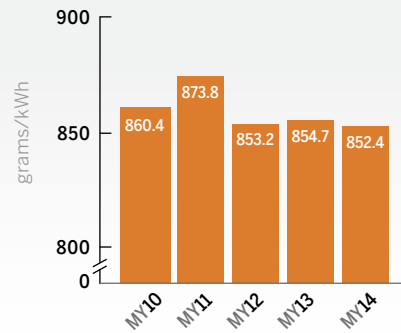
### Emissions for Marine Engines Sold in the U.S.

#### FLEET AVERAGE: CO<sub>2</sub> EMISSIONS

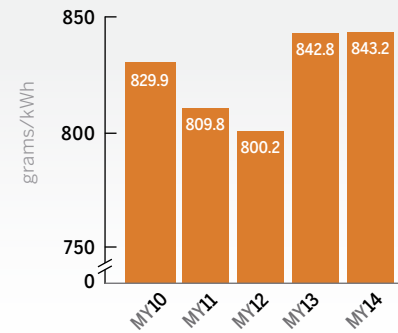
##### 0-80cc



##### 81-225cc



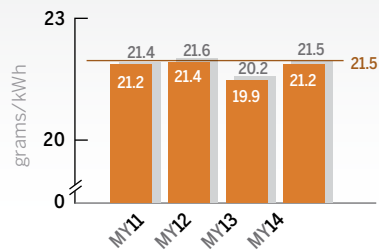
##### 226-1000cc



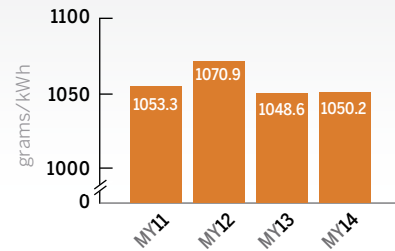
### Criteria Air Pollutants for Marine Engines Sold in the U.S.

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

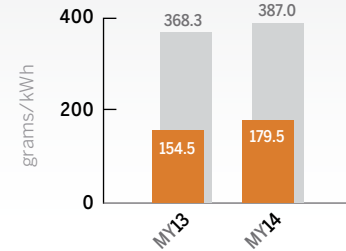
#### FLEET AVERAGE: HC+NO<sub>x</sub> EMISSIONS (MARINE)



#### FLEET AVERAGE: CO<sub>2</sub> EMISSIONS (MARINE)



#### FLEET AVERAGE: CO EMISSIONS (MARINE)



#### KEY

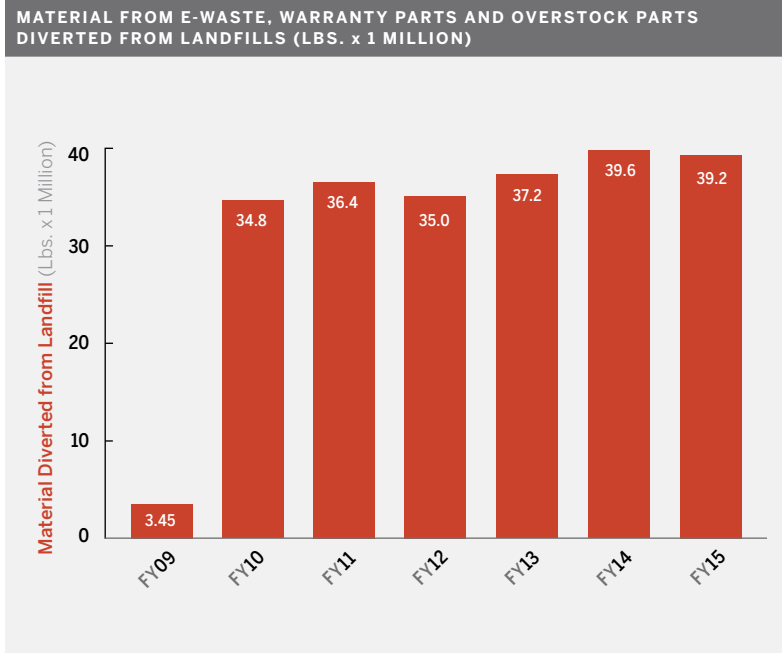
- Honda Engines (Average)
- EPA Standard
- CARB Standard



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

Honda's program for recycling overstock service parts utilizes the same procedures that are in place for regulated materials, such as universal or hazardous waste. Codes are assigned and used, 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. Parts that do not require further failure analysis 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 percent of service parts have been coded for this special handling.

**FY15 Result:** 39.2 million pounds of recyclable material from electronic waste, warranty parts and overstock service parts were diverted from landfills.

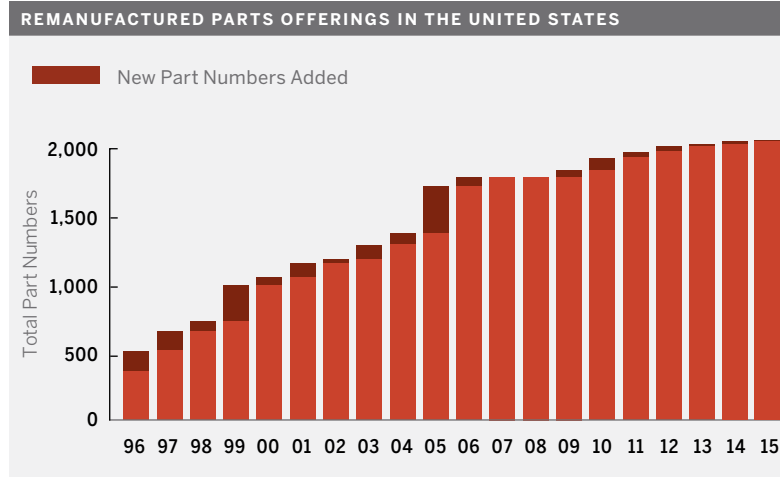




## Expansion of Honda's Remanufactured Parts Program

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. During the past two decades, Honda has greatly expanded the number of remanufactured parts it offers to consumers.

**FY15 Result:** Honda introduced seven new remanufactured parts offerings.



## Aluminum and Steel Wheels

Honda has operated a core charge program in the U.S. for aluminum wheels and, in FY13, 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.

**FY15 Result:** Honda collected 70,000 wheels, including 43,800 aluminum wheels (839,850 pounds) and 26,200 steel wheels, using this program.





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## Catalytic Converters

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Catalytic converters, which are used for emissions control on all automobiles, contain platinum group metals (PGMs), which are extremely valuable. Recycling catalytic converters 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.

**FY15 Result:** Honda recycled 505,404 catalytic converters.

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## Recycling Rare Earth Materials from Hybrid Batteries

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Honda recycles nickel-metal hydride (NiMH) 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 NiMH batteries, reducing the need

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

**FY15 Result:** Honda recycled 24,459 nickel-metal batteries.








## 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.

Over the past two decades, Honda has received environmentally responsible building certifications put forth by LEED (Leadership in Energy & Environmental Design), Energy Star, and Green Globes. Honda now has 12 LEED-certified green buildings in North America — the most of any automaker in the region — and one facility that has earned a Three Globe rating from Green Globes.

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



LEED CERTIFIED BUILDINGS			
FACILITY	CERTIFICATION	DETAILS	
 <b>Honda Financial Services Southeast Regional Office</b>	Gold Jun 2012	<p>82 percent of construction debris (47 tons) was diverted from landfill.</p> <p>Low mercury lamps in all light fixtures result in a 40 percent reduction in energy use for lighting.</p> <p>Forced-air hand dryers in restrooms reduce carbon footprint for this activity by 70 percent.</p> <p>90 percent of the facility's equipment meets Energy Star requirements.</p> <p>A "green cleaning" program reduced exposure to potentially harmful chemical compounds.</p>	
 <b>Honda Engineering America Powertrain Division</b>	Silver version 2.2 Jul 2011	<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>	
 <b>Honda Canada Headquarters Facility</b>	Gold Jul 2011	<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 percent (compared to previous facility).</p> <p>Use of locally sourced materials and 75 percent reuse or recycling of waste materials during construction phase.</p>	
 <b>Honda Manufacturing of Indiana Welcome Center</b>	Certified Nov 2010	<p>The first LEED-certified building in Indiana's Decatur County, the nearly 23,000-square-foot facility purchases 100 percent green power, utilized wood certified by the Forest Stewardship Council, and provides designated parking for fuel-efficient vehicles.</p>	
 <b>Honda R&amp;D Americas Marine Engine Research Facility</b> Grant-Valkaria, FL	Gold Mar 2010	<p>5 percent of the two-acre site (adjacent to Intracoastal Waterway) converted to permanent conservation easement to help protect and preserve local wetlands and wildlife.</p> <p>Reduced area covered by invasive/exotic species and replaced them with beneficial native vegetative species.</p>	




**Green Building Initiatives** cont'd

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

**LEED CERTIFIED BUILDINGS** cont'd

FACILITY	CERTIFICATION	DETAILS
 <b>Honda Financial Services Mid-Atlantic Facility</b> Wilmington, DE	CI Gold Oct 2009	Ultra-low-flow lavatory and kitchen fixtures, high-efficiency fluorescent fixtures, and more than 90 percent of the office appliances are Energy Star rated.
 <b>American Honda Northwest Regional Facility</b> 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. World Headquarters</b> Greensboro, NC	Gold Dec 2008	Uses steel wall panels with almost 35 percent 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 Midwest Consolidation Center</b> Troy, OH	Gold Apr 2008	Reflective roof and energy-efficient lighting. Second-floor mezzanine constructed from wood certified by the Forest Stewardship Council.
 <b>American Honda Data Center</b> Longmont, CO	Silver version 2.2 Apr 2008	First LEED Version 2.2 Silver-certified data center in the United States.
 <b>Honda R&amp;D Americas Central Plant</b> Raymond, OH	Gold Apr 2008	Rainwater-supplied low-flow toilets. Biodiesel-powered emergency generator. Ice chiller system that reduces peak energy demand from air conditioning by as much as half.
 <b>Honda R&amp;D Americas Acura Design Studio</b> Torrance, CA	Gold Mar 2008	Use of reclaimed water for toilets and irrigation. High-efficiency, displacement ventilation system.

**GREEN GLOBES CERTIFIED BUILDINGS**

FACILITY	CERTIFICATION	DETAILS
 <b>Honda Aircraft Company Maintenance and Repair Facility</b>	Three Globes Oct 2013	LED lighting with occupancy and daylight sensors, wood certified by the Forest Stewardship Council; and a special exhaust system for hazardous material areas to reduce VOC emissions.

## Environmental Business Development Office

Honda's Environmental Business Development Office (EBDO) was established in 2011 to identify new business opportunities at the intersection of transportation, energy and the environment, and to support the development and adoption of Honda's alternative-fuel vehicles. EBDO's programs have successfully helped Honda and its customers reduce CO<sub>2</sub> emissions, which contribute to climate change.

### Honda's Partnership with SolarCity Makes Solar Power Affordable

In FY15, Honda and SolarCity, the nation's largest residential solar installer, deployed a \$50 million investment fund aimed at making solar power more affordable and available to Honda and Acura customers in the United States. This latest investment fund followed in the footsteps of two earlier investments — a \$50-million fund deployed in FY14 and a \$65-million fund deployed in FY13.

Over the course of the three-year partnership, Honda and SolarCity have helped deploy more than 4,500 solar arrays on residential and commercial rooftops across the United States.

### Residents Move into Honda Smart Home US

Since it was commissioned in March 2014, interest in Honda Smart Home US has been continuous and widespread. The project has been covered by more than 100 publications internationally, reaching more than five million people and helping spark people's imaginations for future low-carbon living and mobility.

In the fall of 2014, Susan O'Hara, Stuart Bennett and their 9-year old twin daughters became the Honda Smart Home US's first residents. O'Hara is the executive director of the Center for Cooperative Research and Extension Services for School (CRESS) in the School of Education at UC Davis. Bennett is an actuary for California's public employee health and retirement plan system, CalPERS.

In addition to providing feedback directly to Honda engineers on the home's advanced technology systems, including the circadian-friendly

LED lighting, which respects the body's natural clock and rhythm, the occupants are providing valuable data that researchers from Honda and UC Davis will use to evaluate the home's experimental technologies. In a nod to open innovation, the data will also be published on the project's website — [www.hondasmarthome.com](http://www.hondasmarthome.com).

"There is simply not a lot of data accessible to researchers on zero net energy building performance," explains Michael Koenig, Honda Smart Home US project leader. "By publishing all of the mechanical and architectural drawings, materials and energy performance data, we're hoping to accelerate innovation in the green building space and encourage others to pick up where we've left off."

The home has caught the attention of more than just press. Earlier this year, California Governor Jerry Brown and First Lady Anne Gust visited the home for a meeting with Susan, Stuart and Honda EBDO representatives.



From left to right: Governor Jerry Brown with Stuart Bennett, Susan O'Hara and their twin daughters.



## Environmental Business Development Office cont'd

### Adopting Renewable Energy in Support of CO<sub>2</sub> Reduction Goals

In FY15, EBDO conducted a widespread evaluation on the cost effectiveness of solar power at corporate facilities across the United States. As a result of this analysis, several large-scale projects are in various stages of development, including a 1-megawatt (MW) AC solar photovoltaic system that was installed in FY15 at American Honda's Windsor Locks, Connecticut parts distribution facility.



5,000 high-efficiency photovoltaic panels on Honda's Windsor Locks, Connecticut parts distribution facility.

The 400,000-square-foot parts center distributes nearly two million parts to 175 Honda and Acura dealers throughout the northeast each month. The new rooftop solar array is composed of nearly 5,000 high-efficiency photovoltaic panels, making it the largest solar system deployed by Honda in North America to date. The array is anticipated to generate more than 50 percent of the site's total electricity needs, and will bring immediate and long-term cost savings to Honda — an expected \$3.5 million over the 25-year lifespan of the array.








“This project provides clean, reliable electricity while reducing operating costs immediately and over the long term,” said Ryan Harty, Manager, Environmental Business Development Office for American Honda.

The 1.4 gigawatt-hours that will be generated by the system in its first year of operation would power an average U.S. home for over 100 years. On an annual basis, the system is expected to offset an estimated 576 tons of greenhouse gas emissions in Connecticut Light and Power's region.

## 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
<b>Alabama PALS (People United Against A Littered State)</b> Montgomery, Alabama USA <a href="http://www.alpals.org">www.alpals.org</a>	A partnership of state and local governments, civic groups, law enforcement, businesses and industry aimed at educating and fighting against littering. 
<b>Alabama Environmental Council</b> Birmingham, Alabama USA <a href="http://www.aeconline.org">www.aeconline.org</a>	A statewide, non-profit group engaging citizens toward sustainable living and stewardship of the environment. The council organizes and empowers Alabamians to preserve the environment in a manner that is mindful of current and future generations. It also educates and advocates for environmentally sustainable policies and practices and is an effective and respected environmental voice for its stakeholders and others. The group operates the oldest drop-off recycling center in the state.  
<b>Aquarium of the Pacific</b> Long Beach, California USA <a href="http://www.aquariumofpacific.org">www.aquariumofpacific.org</a>	Honda has been a founding sponsor of the Aquarium since 1998 and has helped support a wide variety of educational programs, including sponsoring the Blue Cavern, the aquarium's 3-story, 142,000-gallon signature exhibit that features animals from the waters off Southern California and Baja, some of which were collected by the aquarium using boats powered by Honda Marine engines. 
<b>Allen Brooks Nature Centre</b> Vernon, British Columbia, Canada <a href="http://www.abnc.ca">www.abnc.ca</a>	The Nature Centre provides visitors a first-hand opportunity to see and learn about the Okanagan's unique and diverse natural heritage through views, information, programs and displays of the region's natural areas. Honda Canada supports the 'Nature on the Go' program at the Nature Centre with a \$5,000 grant. 
<b>Aullwood Audubon Center</b> Dayton, Ohio USA <a href="http://www.aullwood.org">www.aullwood.org</a>	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 local school children. 
<b>Birmingham Zoo</b> Birmingham, Alabama USA <a href="http://www.birminghamzoo.com">www.birminghamzoo.com</a>	The Birmingham Zoo's mission is 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. 













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## Environmental Community Activities

Environmental Education <small>cont'd</small>	
ORGANIZATION	FOCUS OF INVOLVEMENT
<b>Boy Scouts of America — National Headquarters</b> Irving, Texas USA <a href="http://www.scouting.org">www.scouting.org</a>	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. 
<b>Boy Scouts — Simon Kenton Council</b> Columbus, Ohio USA <a href="http://www.skcbbsa.org">www.skcbbsa.org</a>	Boy Scouts provides a program that builds character and provides a solid foundation to learn leadership skills and build character. Honda supports the Council's World Conservation summer program focused on recycling, wildlife conservation, water and soil conservation and renewable energy.  
<b>Clean Fuels Ohio</b> Columbus, Ohio USA <a href="http://www.CleanFuelsOhio.org">www.CleanFuelsOhio.org</a>	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>The Columbus Zoo &amp; Aquarium</b> Powell, Ohio USA <a href="http://www.columbuszoo.org">www.columbuszoo.org</a>	The mission of the Columbus Zoo is to lead and inspire by connecting people and wildlife. Honda's grant supported the Safari Africa region, which revolves around a cohesive theme of conservation and environmental education.  
<b>DelDot — Adopt-A-Highway Program</b> Bear, Delaware USA <a href="http://www.delnet.gov/information/community_programs_and_services/adopt_a_hwy/">http://www.delnet.gov/information/community_programs_and_services/adopt_a_hwy/</a>	The Mid Atlantic Region adopted a 3-mile stretch of roadway in Delaware to help keep clean. Associates volunteer 2-3 hours, three times a year to help clean up trash on the side of the roadway. 
<b>Dayton Foundation</b> Dayton, Ohio USA <a href="http://www.daytonfoundation.org/operationcherrytree.html">www.daytonfoundation.org/operationcherrytree.html</a>	The Dayton Foundation created Operation 1,000 Cherry Trees to symbolize the Japanese people's gratitude for America's response to the tsunami and to strengthen the ties of friendship between the two countries. 
<b>Earth Day Columbus Festival</b> Columbus, Ohio USA	In celebration of Earth Day, Honda provided its associates with an opportunity to destroy their information securely, donate gently used items for reuse, and safely dispose of hazardous household waste. 
<b>Earth Day Indiana Festival</b> Indianapolis, Indiana USA <a href="http://www.earthdayindiana.org">www.earthdayindiana.org</a>	Earth Day Indiana educates people on the needs of their environment and ways they can help protect the environment, conserve natural resources, and live a more sustainable lifestyle. 
<b>Earth Rangers</b> Woodbridge, Ontario, Canada <a href="http://www.earthrangers.com">www.earthrangers.com</a>	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.  

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## Environmental Community Activities

Environmental Education <small>cont'd</small>	
ORGANIZATION	FOCUS OF INVOLVEMENT
<b>Flat Rock YMCA Camp</b> St. Paul, Indiana USA <a href="http://www.flatrockymca.org">www.flatrockymca.org</a>	Flat Rock YMCA provides kids camping opportunities with safe, value-centered, and educational experiences out-of-doors.   
<b>Friends of Cedar Bog Nature Preserve</b> Urbana, Ohio USA <a href="http://www.cedarbognp.org">www.cedarbognp.org</a>	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 grant to support the Bog's Education Center operations. 
<b>Green Resource Center for Alabama</b> Homewood, Alabama USA <a href="http://www.mygreenbirmingham.com/greenguide/the-green-resource-center-of-alabama/">www.mygreenbirmingham.com/greenguide/the-green-resource-center-of-alabama/</a>	The Green Resource Center for Alabama (GRCA) serves as a clearinghouse for people and businesses looking for information about energy efficiency; offering programs and events that bring together people who are interested in sustainable living, development and design; and presenting ideas to community leaders and policy-makers that help protect and conserve Alabama's natural resources. 
<b>The Greening of Detroit</b> Detroit, Michigan USA <a href="http://www.greeningofdetroit.com">www.greeningofdetroit.com</a>	Through the Shaping Environmental and Nutrition Science Education (SENSE) program, students in grades 4-8 make four annual trips to Rouge Park, exploring habitats, planting trees and conducting water quality monitoring activities, learning the importance of preserving and restoring local ecosystems. The Greening also partners with K-12 schools, providing resources and tools needed to build a school garden and help teachers develop age-appropriate interdisciplinary curriculum focused on the sciences, nutrition education and the local food system in Detroit. 
<b>Happy Hollow Camp</b> Indianapolis, Indiana USA <a href="http://www.happyhollowcamp.net">www.happyhollowcamp.net</a>	Happy Hollow provides programs focusing on outdoor education to financially disadvantaged youth.  
<b>Jameson Camp</b> Indianapolis, Indiana USA <a href="http://www.jamesoncamp.org">www.jamesoncamp.org</a>	Jameson Camp's mission is to enrich the lives of Indiana's youth by inspiring them to discover their strengths.  
<b>Keep Haralson Beautiful</b> Haralson County, Georgia USA	The mission of Keep Haralson Beautiful is to encourage sustainable environmental practices in Haralson County through public education and community-based programs.  
<b>Lincoln Park Zoological Society</b> Chicago, Illinois USA <a href="http://www.lpzoo.org">www.lpzoo.org</a>	The Young Researchers Collaborative (YRC) program offers professional development workshops to teachers to help them gain inquiry-based teaching skills to engage more than 1,700 middle school students in authentic zoo research projects that explore animal behavior and ecology studies. Zoo educators visit each classroom three times and students attend two zoo field trips, collecting data using iPads and customized zoo apps and then showcase their research findings in a culminating event. 

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## Environmental Community Activities

Environmental Education <small>cont'd</small>	
ORGANIZATION	FOCUS OF INVOLVEMENT
<b>Living Classrooms</b> Washington, D.C. USA <a href="http://www.livingclassrooms.org">www.livingclassrooms.org</a>	Living Classrooms Foundation strengthens communities and inspires young people to achieve their potential through hands-on education and job training, using urban, natural, and maritime resources as "living classrooms." 
<b>Northeast Parent and Child Society</b> Schenectady, New York USA <a href="http://www.neparentchild.org">www.neparentchild.org</a>	Honda supports the Green Construction and Energy Efficiency career track where young adults 18-24 learn about various forms of energy, construction math and building sciences and apply lessons learned towards a "gut rehab" and weatherizing homes — progressing towards earning technical industry-recognized certifications in green energy. 
<b>Ohio Wildlife Center</b> Powell, Ohio USA <a href="http://www.ohiowildlifecenter.org">www.ohiowildlifecenter.org</a>	This center is dedicated to fostering awareness and appreciation of Ohio's native wildlife through rehabilitation, education and wildlife health studies. Honda's grant supports a summer wildlife day camp program for youth.  
<b>Pee Dee Research and Education Center (Clemson University)</b> Pickens, South Carolina USA <a href="http://www.clemson.edu/public/rec/peedee">www.clemson.edu/public/rec/peedee</a>	Pee Dee Research and Education partners with Clemson University to provide 100 acres of land to grow switchgrass to be used for biofuel research and development. 
<b>Pinelands Preservation Alliance</b> Southampton, New Jersey USA <a href="http://www.pinelandsalliance.org">www.pinelandsalliance.org</a>	The Pinelands Preservation Alliance is the only nonprofit organization dedicated solely to the protection and preservation of New Jersey's Pine Barrens ecosystem. The Alliance seeks wide public awareness by providing advocacy and educational programs designed to protect the Pinelands for future generations. 
<b>ReNEW Reinventing Education</b> New Orleans, Louisiana USA <a href="http://www.renewschools.org">www.renewschools.org</a>	The Wetland Warriors program restores and preserves protective lands throughout New Orleans. Summer camps are offered to middle school students while older teens receive job training opportunities focused on coastal restoration engineering and construction in hopes of increasing their interests in green careers. 
<b>Ruffner Mountain Nature Preserve</b> Birmingham, Alabama USA <a href="http://www.ruffnermountain.org">www.ruffnermountain.org</a>	The Ruffner Mountain Nature Preserve includes 1,036 acres of protected land in one of the largest privately managed urban nature preserves in the U.S. RMNP offers K-12 environmental educational programs, day camps, a variety of public programs and visitor access for more than 30,000 people each year. 
<b>Student Recycle Program – Florence School District 4</b> Timmons ville, South Carolina USA <a href="http://www.florence4.k12.sc.us">www.florence4.k12.sc.us</a>	Encourages recycling methods or practices.  





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## Environmental Community Activities

Environmental Education <small>cont'd</small>	
ORGANIZATION	FOCUS OF INVOLVEMENT
<b>Wildlife and Industry Together (W.A.I.T.)</b> <b>South Carolina Wildlife Federation</b> Columbia, South Carolina USA <a href="http://www.scwf.org/index.php/education-programs/habitats/wait">http://www.scwf.org/index.php/education-programs/habitats/wait</a>	W.A.I.T.™ is designed to encourage corporate landowners to integrate wildlife habitat needs 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.  
<b>Zero Waste Conference</b> Orilla, Ontario, Canada	This regional 'zero waste' conference promoted the 3Rs. HCM contributed financial support and sent their facility waste specialist to speak about Honda's success with reducing waste.  













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## Environmental Community Activities

Environmental Preservation and Restoration	
ORGANIZATION	FOCUS OF INVOLVEMENT
<p><b>Alabama Clean Water Partnership</b> Alabama USA www.cleanwaterpartnership.org</p>	<p>The Alabama Clean Water Partnership (ACWP) is a coalition of public and private individuals, companies, organizations, and governing bodies working together to protect and preserve water resources and aquatic ecosystems throughout the state.</p> <p></p>
<p><b>American Chestnut Foundation Alabama Chapter</b> Birmingham, Alabama USA www.acf.org</p>	<p>The goal of the American Chestnut Foundation is to restore the American chestnut tree to our eastern woodlands to benefit our environment, our wildlife, and our society. The American Chestnut Foundation is restoring a species and, in the process, creating a template for restoration of other tree and plant species. In celebration of Earth Day, HMA volunteers planted over 50 American chestnut trees and helped irrigate chestnut tree farms to assist with conservation efforts.</p> <p> </p>
<p><b>Beach-Clean-Up South Carolina Department of Parks, Recreation &amp; Tourism</b> Columbia, South Carolina USA www.discoverouthcarolina.com</p>	<p>Honda associates and South Carolina DNR utilized Honda (Patent Pending) Rake/Sand Screen Equipment to support beach clean-up efforts for Myrtle Beach State Park.</p> <p>  </p>
<p><b>Clean Sweep of the Great Miami River</b> Troy, Ohio USA www.greatmiamirivercleanup.org</p>	<p>Clean Sweep of the Great Miami River promotes environmental quality, protection, and beautification of the Great Miami River from Indian Lake to the Ohio River. Honda Community Action Team volunteers worked together with Protecting Our Water Ways by removing debris from a section of the river bank and bike path in July 2014. American Honda's monetary contribution assisted with tire recycling, trash disposal, and canoe rental.</p> <p> </p>
<p><b>Colonel Francis Beatty Park</b> Matthews, North Carolina USA www.francisbeattypark.com</p>	<p>Honda associates volunteered in clean-up efforts to support the local community park.</p> <p></p>
<p><b>Freshwater Land Trust</b> Birmingham, Alabama USA www.freshwaterlandtrust.org</p>	<p>The Freshwater Land Trust (FWLT) is a nonprofit that works to conserve and connect lands that are critical for the protection of rivers and streams and that provides recreational opportunities for the community. FWLT has helped protect more than 10,000 acres in Central Alabama and is one of the largest owners of private nature preserves in the state of Alabama.</p> <p> </p>
<p><b>Gladys Porter Zoo</b> Brownsville, Texas USA www.gpz.org/ridley.htm</p>	<p>Honda provides products for use by researchers protecting the endangered Kemp's ridley sea turtle.</p> <p></p>












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## Environmental Community Activities

Environmental Preservation and Restoration <small>cont'd</small>	
ORGANIZATION	FOCUS OF INVOLVEMENT
<b>Gulf Restoration Network</b> New Orleans, Louisiana USA <a href="http://www.healthygulf.org">www.healthygulf.org</a>	Gulf Restoration Network is committed to uniting and empowering people to protect and restore the natural resources of the Gulf Region. The Gulf of Mexico will continue to be a natural, economic, and recreational resource that is central to the culture and heritage of five states and several nations. The people of the region will be stewards of this vital but imperiled treasure and assume the responsibility of returning the Gulf to its former splendor. 
<b>Half Moon Bay State Beach Restoration</b> Half Moon Bay, California USA	Projects focus on removing invasive, non-native plants which create habitat for the native plant species that are at the base of the food chain for coastal wildlife. 
<b>Indian Lake Watershed Project</b> Logan, Ohio USA <a href="http://www.indianlake.com/watershed/watershed.htm">www.indianlake.com/watershed/watershed.htm</a>	Honda is a dues-paying member of the Indian Lake Watershed Project. Cash contributions are also provided to support the dredging and weed harvesting on Indian Lake and annual fundraising activities. The Indian Lake Watershed Project (ILWP) is a nationally recognized project that has made significant water quality improvements during its 24-year existence and strives to leave a lasting legacy of clean water for future generations to enjoy the camaraderie of their family and friends for years to come. 
<b>Keep Florence Beautiful/ Adopt A Highway</b> Florence, South Carolina USA <a href="http://www.cityofflorence.com">www.cityofflorence.com</a>	Associates volunteer to clean up 2.4 miles of road 3 times a year near the Honda facility. We also provided a cash contribution and provide volunteers annually to support the City of Florence on selected roads for the "Great American Clean-up" campaign.  
<b>Keep Logan Co. Beautiful (KLCB)</b> Bellefontaine, Ohio USA <a href="http://www.logancountyrecycles.com">www.logancountyrecycles.com</a>	The Keep Logan County Beautiful Committee (KLCB) focuses on these and other environmental concerns: recycling, resource reduction, energy conservation, energy alternatives, conservation, zero waste strategies, green buildings, green purchasing, and greenhouse gas reduction.  
<b>Living Lands &amp; Waters</b> East Moline, Illinois USA <a href="http://www.livinglandsandwaters.org">www.livinglandsandwaters.org</a>	Living Lands & Waters is a non-profit dedicated to the protection, preservation and restoration of the natural environment of the nation's major rivers and their watersheds, and 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 to walk out their kingdom-driven life through Youth Mentoring, Small Group Discipleship, and a Brotherhood of Men programs. Honda associates volunteered clearing debris, clearing trails and improving roads with organization.  
<b>Mecklenburg County Parks and Recreation</b> Charlotte, North Carolina USA <a href="http://www.charmeck.org/mecklenburg/county/ParkandRec/Pages/default.aspx">www.charmeck.org/mecklenburg/county/ParkandRec/Pages/default.aspx</a>	Helped the Mecklenburg County Park & Recreation and the Partners for Parks Foundation build a playground in memory of the students and teachers lost at the Sandy Hook Elementary School shooting in Newtown, Connecticut. Helped with construction to complete the project. 



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## Environmental Community Activities

Environmental Preservation and Restoration <small>cont'd</small>	
ORGANIZATION	FOCUS OF INVOLVEMENT
<b>Miami County Parks</b> Troy, Ohio USA <a href="http://www.miamicountyparks.com">www.miamicountyparks.com</a>	MCP works to recreate native habitats once existing in Miami County in the county parks including Hobart Urban Nature Preserve. In conjunction with Arbor Day, Honda Community Action Team volunteers planted 20 native trees purchased by Honda and built protective fences around them at Lost Creek Reserve in April 2014.  
<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>	This organization is dedicated to promoting responsible off-highway vehicle 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.   
<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, 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 and volunteer efforts support 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>	The mission of the Nature Conservancy is to preserve the plants, animals, and natural communities that represent the diversity of life on earth by protecting the lands and waters they need to survive. Honda has supported the Ohio Chapter's establishment of the Big Darby Creek Headwaters Nature Preserve, stewardship, and volunteer programs.  
<b>Ohio Environmental Council</b> Columbus, Ohio USA <a href="http://www.ohioenvironmentalcouncil.org">www.ohioenvironmentalcouncil.org</a>	The mission of the Ohio Environmental Council is to secure healthy air, land, and water for all who call Ohio home, helping individuals, communities, and businesses go green, save money, and live healthier. Honda sponsors the Council's annual Green Gala. 
<b>Ohio Fuel Cell Coalition</b> Elyria, Ohio USA <a href="http://www.fuelcellcorridor.com">www.fuelcellcorridor.com</a>	The Ohio Fuel Cell Coalition is a united group of industry, academic, and government leaders working collectively to strengthen Ohio's fuel cell industry and to accelerate the transformation of the region to global leadership in fuel cell technology. Honda sponsors the Coalition's annual Fuel Cell Symposium. 

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-  PRODUCT DONATION
-  ASSOCIATE VOLUNTEER
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## Environmental Community Activities

Environmental Preservation and Restoration <small>cont'd</small>	
ORGANIZATION	FOCUS OF INVOLVEMENT
<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.usda.gov/sbnf/">www.fs.usda.gov/sbnf/</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>Simon Kenton Pathfinders</b> Urbana, Ohio USA <a href="http://www.simonkentonpathfinders.org">www.simonkentonpathfinders.org</a>	The mission of the Simon Kenton Pathfinders is to assist in the development, installation and maintenance of a shared-use path in Champaign and Logan counties. Honda's grant supported the development of the Urbana -Bellefontaine connector, which is the continuation of the Simon Kenton Trail to Bellefontaine from the City of Urbana.  
<b>South Carolina Environmental Excellence Program — SCEEP DHEC Office</b> Columbia, South Carolina USA <a href="http://www.scdhec.gov/sceep">www.scdhec.gov/sceep</a>	The SCEEP Advisory Committee oversees the SC Environmental Excellence Program and works with the State to reach goals for waste reduction and recycling. Honda associates speak at local events and conferences to encourage participation and share best practices to promote environmental stewardship in the community. 
<b>South Simcoe Streams Network</b> New Tecumseth, Ontario, Canada	South Simcoe Streams Network works to improve the water quality and fish and wildlife habitat through floodplain creation and riverbank stabilization. 
<b>Specialty Vehicle Industry Association</b> Irvine, California USA <a href="http://www.svia.org">www.svia.org</a>	This organization promotes the safe and responsible use of all-terrain vehicles through rider training programs and public awareness campaigns.   
<b>Tigers for Tomorrow</b> Atalla, Alabama USA <a href="http://www.tigersfortomorrow.org">www.tigersfortomorrow.org</a>	This exotic animal park and rescue preserve is a "last stop" for exotic animals, which will live the rest of their lives at the park. 
<b>Trees Ontario/Forest Recovery Canada</b> Toronto, Ontario, Canada <a href="http://www.treesontario.ca">www.treesontario.ca</a>	For every piece of Honda power equipment sold from April through July, Honda and its associate volunteers plant a tree.  
<b>Trex</b> Winchester, VA <a href="http://www.trex.com">www.trex.com</a>	Through the Bags to Benches Program, Honda associates of the Mid-Atlantic Region collected 40,500 plastic bags as part of a recycle program. The plastic bags were donated to Trex, which in turn made a composite bench. 

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## Environmental Technology Milestones 1972 – 1999



**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.



## Environmental Technology Milestones 2000 – 2005



### 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.

### 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 first 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) V-6 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.



## Environmental Technology Milestones 2006-2012



### 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.

### 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 percent 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 percent.

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 millions units.

## Environmental Technology Milestones 2013-2015



### 2013

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

The 2014 Accord lineup is named "Green Car of the Year®" by *Green Car Journal*.

2014 Accord Hybrid, featuring the two-motor system from Honda's Earth Dreams™ Technology powertrain series, receives the highest 5-door sedan EPA highway fuel economy rating of 50 mpg.

The Honda FCEV Concept debuts at the Los Angeles International Auto Show, expressing a potential styling direction for Honda's next-generation fuel cell electric vehicle, launching in the U.S. and Japan in 2016. American Honda joins H2USA partnership to promote fuel cell electric vehicles and infrastructure.

American Honda installs a stationary fuel cell producing one megawatt of power to serve the power needs of its 1.12 million-square-foot Torrance, California campus.

Honda establishes world's first process to reuse rare earth metals from nickel-metal hydride batteries in new nickel-metal hydride batteries for hybrid vehicles.

Honda and SolarCity® establish partnership to make solar power more affordable and available with the creation of a \$65 million fund to finance solar projects by Honda and Acura customers and other consumers.

### 2014

Honda Smart Home US "living laboratory" opens in Davis, California, showcasing Honda technologies that enable zero net energy living and transportation.

Honda R&D Americas opens hydrogen-refueling station on its Torrance, California campus to demonstrate enhanced fueling protocol developed by Honda, which reduces fueling times by as much as 45 percent.

Rossi Honda in Vineland, New Jersey, an early participant in Honda's "green dealer" program, becomes the first U.S. auto dealer to achieve "Electric Grid Neutral" status, producing as much or more energy from renewable sources as it draws from public utilities.

Honda Transmission Manufacturing of America installs two power-producing wind turbines at its Russels Point, Ohio, plant, where the turbines are anticipated to provide upwards of 10 percent of the plant's electricity needs.

Honda expands its "Green Dealer" program to the company's U.S. Powersports and Power Equipment dealers while making public its 93-page "Green Dealer" guidebook for additional dealers to follow Honda's lead in reducing their environmental impact.

Honda partners with FirstElement Fuel, providing \$13.8 million in financial assistance to build additional hydrogen refueling stations throughout California.

Honda joins with eight other automakers and 15 utilities to demonstrate a standards-based, open-grid integration platform for plug-in electric vehicles (PEVs).

### 2015

Honda and SolarCity renew their partnership with a new fund expected to finance \$50 million in solar projects.

Honda opens a Compressed Natural Gas (CNG) fueling station adjacent to its Marysville, Ohio, auto plant to promote the use of natural gas-powered trucks for delivery of parts to Honda plants in the area.

The Marysville and East Liberty, Ohio, automobile manufacturing plants earn U.S.EPA's ENERGY STAR certification for the ninth consecutive year, while the company's Greensburg, Indiana plant achieved the designation for the third consecutive year.

The Honda FCV Concept makes its North American debut at the 2015 North American International Auto Show showcasing the styling evolution of Honda's next fuel cell vehicle.

Honda installs its first hydrogen fuel cell forklifts in North America at its Marysville, Ohio, auto plant to eliminate 1,350 metric tons of CO<sub>2</sub> emissions per year from the facility.

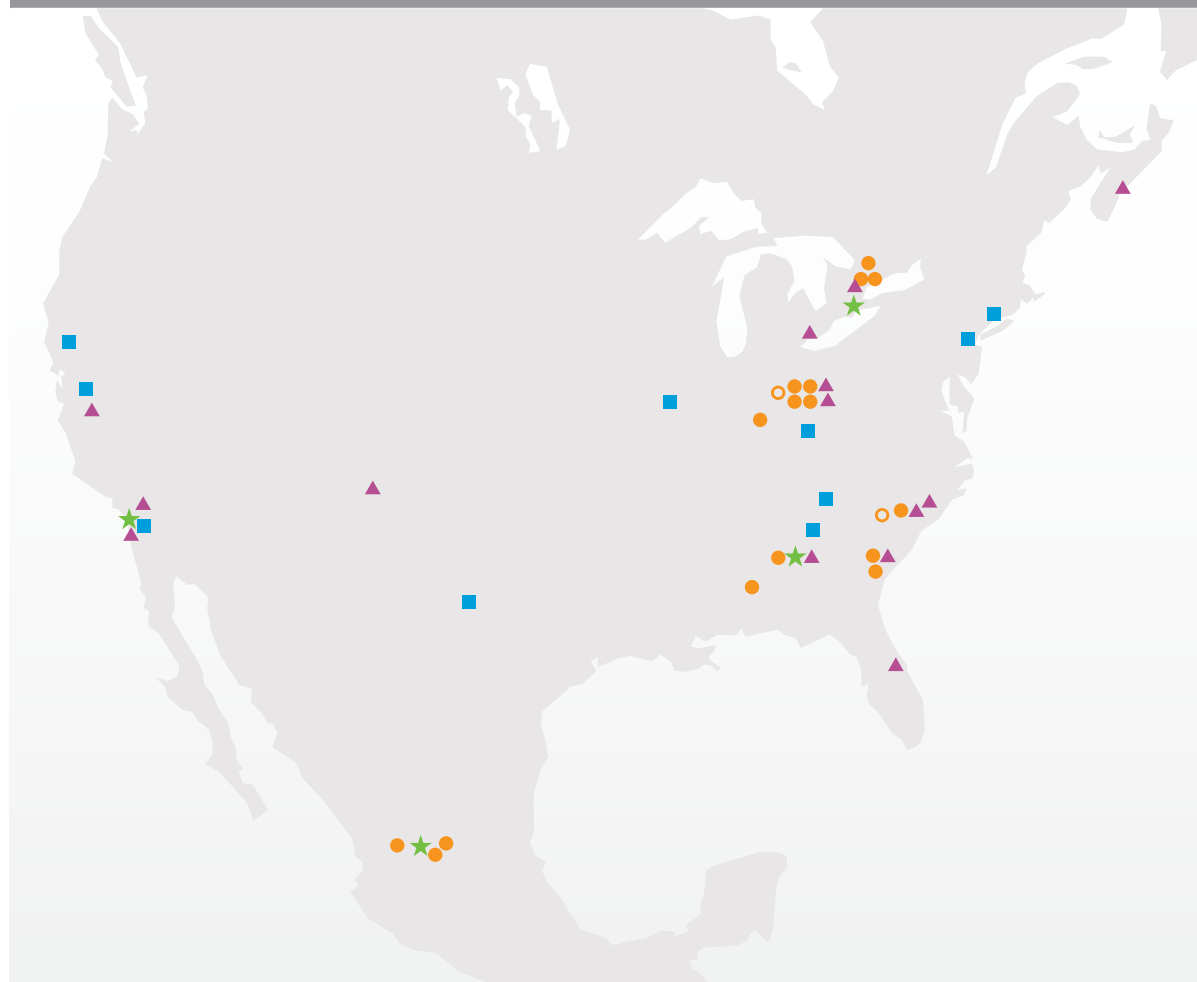
## North American Corporate Profile

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.

71

2015 NORTH AMERICAN  
ENVIRONMENTAL REPORT

### Key North American Locations



### Capital Investment

More than \$21 billion

### Employment

Approximately  
33,000 associates


### Parts Purchases

More than \$25 billion  
in parts and materials  
purchased annually  
from more than 650  
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 about 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:	<ul style="list-style-type: none"> <li>American Honda Motor Co., Inc.</li> <li>American Honda Finance Corp.</li> <li>Honda North America, Inc.</li> <li>Honda of America Mfg., Inc.</li> <li>Honda Manufacturing of Alabama, LLC</li> <li>Honda Power Equipment Mfg., Inc.</li> <li>Honda of South Carolina Mfg., Inc.</li> <li>Honda Transmission Mfg. of America, Inc.</li> <li>Honda Manufacturing of Indiana, LLC</li> <li>Honda Engineering North America, Inc.</li> <li>Honda R&amp;D Americas, Inc.</li> <li>Honda Trading America Corp.</li> <li>Honda Precision Parts of Georgia, LLC</li> <li>Honda Aircraft Company, Inc.</li> <li>Honda Aero, Inc.</li> </ul>	<ul style="list-style-type: none"> <li>Honda Canada, Inc.</li> <li>Honda of Canada Mfg., a division of Honda Canada, Inc.</li> <li>Honda R&amp;D Americas, Inc. (Canada)</li> <li>Honda Canada Finance, Inc.</li> <li>Honda Trading Canada, Inc.</li> </ul>	<ul style="list-style-type: none"> <li>Honda de Mexico, S.A. de C.V.</li> </ul>

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