



ENVIRONMENT AND SAFETY

Honda established and announced the “Honda Environment Statement” in 1992, in which it announced that “as a responsible member of society whose task lies in the preservation of the global environment, Honda 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 count on a successful future not only for our company, but for the entire world.”

Based on this statement and Honda’s “Commitment to the Future” as one of the directions within Honda’s 2010 vision, we continue our focus on the contributions to safety and the environment. Honda fulfills this commitment through its ongoing development of safety technology, its development of technology aimed at reducing emissions, its corporate activism, and its focus on developing alternative forms of energy. The following is a review of Honda’s achievement in this area in fiscal 2004.

MOTORCYCLES

In the area of motorcycles, we made further progress in expanding the use of 4-stroke engines to achieve cleaner exhaust emissions. We have also made efforts to introduce new technologies to improve fuel economy and applied these technologies to small motorcycles.

Main targets for fiscal 2004 in Japan

- To expand the use of 4-stroke engines
- To improve the fuel economy of new models

Main achievements in fiscal 2004 in Japan

- Adopted 4-stroke engines for all models released in fiscal 2004 (4-stroke motorcycles as a percentage of all motorcycles manufactured by Honda: 89.5%)
- Improved the average fuel economy 30.5% for all models marketed in fiscal 2004

Achieving Cleaner Exhaust Gas

Targets

Up to fiscal 2005: To reduce total exhaust emissions of HC* to approximately 1/3 for new vehicles (compared with fiscal 1995)

** Total for Japan, the United States, the European Union and Thailand*

Progress

In fiscal 2004, HC emissions from new motorcycles were kept at 30.9% of the 1995 level, a 3.3 percentage point increase over the previous year’s level. HC emissions were maintained at about 1/3 of the 1995 level due to proper emission reduction measures and despite the fact that sales increased 15.2% (sales increased 45% in Thailand).

In Japan, HC emissions stood at approximately 16.2% of the 1995 level, approximately a 3 percentage point decrease from the previous year’s level, as sales of 4-stroke motorcycles accounted for roughly 90% of total sales in the domestic market.

Improvement in Fuel Economy

Targets

Up to fiscal 2005: To improve the average fuel economy* by approximately 30% (compared with fiscal 1995)

* Total average for Japan, the United State, the European Union, and Thailand

Progress

Honda expanded the use of 4-stroke engines in motorcycles not only in Japan but also overseas. As a result, the average fuel economy in fiscal 2004 improved 33.7% over that in 1995, and the improvement rate surpassed the target of 30%. The average fuel economy in Japan also improved 30.5% over the 1995 level. Honda announced earlier that its FI technology would be applied to 50cc motorcycles by 2005. In January 2004, we succeeded in marketing the *Smart Dio Z4*, which employs FI technology and has the smallest engine displacement for a mass-produced motorcycle in the world, in the domestic market.

AUTOMOBILES

Besides achieving cleaner exhaust gas and improved fuel economy for Honda automobiles, efforts are under way to develop products using alternative forms of energy.

Main targets for fiscal 2004 in Japan

- To increase the number of vehicles approved by the Ministry of Land, Infrastructure and Transport as "Ultra Low Emission Vehicles"
- To achieve earlier compliance with the 2005 exhaust emissions regulations of the Ministry of Land, Infrastructure and Transport
- To improve average fuel economy by category

Main achievements in fiscal 2004 in Japan

- Nine additional models were approved as "Ultra Low Emission Vehicles" (16 in total)
- Achieved compliance of all models with 2005 exhaust emissions regulations
 - Six models approved as vehicles with 75% lower emissions than the 2005 exhaust emissions standards
 - Fourteen models approved as vehicles with 50% lower emissions than the 2005 exhaust emissions standards
- Attained the fuel economy standards for fiscal 2010 by six categories among seven

Achieving Cleaner Exhaust Gas

Targets

- Up to fiscal 2005: To reduce the total exhaust emissions of HC and NOx by approximately 75% for new vehicles (compared with fiscal 1995)*¹
- Up to fiscal 2005: To have almost all Honda passenger vehicles approved as "Ultra Low Emission Vehicles" by the Ministry of Land, Infrastructure and Transport

Progress

In fiscal 2004, total exhaust emissions of HC and NOx for new automobiles were reduced approximately 83.7%, and the target for 2005 was attained.

- Total HC emission level: Reduced approx. 83.7% (compared with 1995)*²
- Total NOx emission level: Reduced approx. 83.7% (compared with 1995)*²
- The percentage of models approved as "Ultra Low Emission Vehicles"*³ by the Ministry of Land, Infrastructure and Transport increased from 10% (seven models, seven types) to 43% (16 models, 30 types).

On October 1, 2003, a new low emission vehicle approval scheme under the 2005 exhaust emissions standards was introduced. Therefore, Honda made all models comply with the 2005 exhaust emissions standards by March 2004. Six models (12 types) were approved as "★★★★ low emission vehicles" 4, and 14 models (26 types) were approved as "★★★ low emission vehicles."

Improvement in Fuel Economy

Targets

- Up to fiscal 2005: To achieve the new fuel efficiency standards of Japan for fiscal 2010 for all weight categories
- Up to fiscal 2005: To improve the average fuel economy approximately 25% (compared with fiscal 1995)*

* Targets in Japan

Progress

Honda has achieved the above standards in six out of seven weight categories.

Average fuel economy was improved approximately 35% (compared with fiscal 1995)* and achieved the objective for 2005 (improvement in average fuel economy by approximately 25%) consecutively for two years from fiscal 2003.

* Average fuel economy in Japan (for gasoline-powered vehicles)

SAFETY

New Crash Compatibility Body Frame Structure

Honda recently developed a crash compatibility body frame structure that uses the engine compartment to efficiently disperse and absorb collision energy during a vehicle-to-vehicle collision, thus significantly improving self-protection while also reducing aggressivity toward other vehicles. We first used this new technology in the all-new *Life minicar*, released in September 2003. During future full model changeovers, all vehicles built on new platforms will be equipped with the new crash compatibility body frame structure.

POWER PRODUCTS

For power products, our environmental commitment was made in anticipation of stringent regulations in advance, in focusing on cleaner exhaust gases, and improved fuel economy in all product areas.

Main targets for fiscal 2004 in Japan

- To comply with stringent regulations in advance
- To improve the fuel economy for new product models

Main achievements in fiscal 2004 in Japan

- Achieved compliance with future regulations for all models released in fiscal 2004
- Improved fuel economy 20% for the *BF150* outboard engine

Achieving Cleaner Exhaust Gas

Targets

Up to fiscal 2005: To reduce the average exhaust emissions* of HC and NOx by approximately 30% for new products (compared with fiscal 1995)

* Average emission levels worldwide

Progress

We were able to achieve an approximate 30% reduction in average HC and NOx emission levels in fiscal 2002. In fiscal 2004, we succeeded in realizing an approximate 36% reduction by continuously taking the measures described.

Improvement in Fuel Economy

Targets

Up to fiscal 2005: To improve the average fuel economy approximately 30% (compared with fiscal 1995)

Progress

We were able to improve the average fuel economy approximately 25% by the end of fiscal 2004.

FUEL CELL VEHICLES

First in the World to Lease to Private Sector Corporations

In July 2003, Honda became the first automaker in the world to deliver a fuel cell vehicle, the *FCX*, to a private sector company. Since December 2002, when shipments of the *FCX* began in Japan and the United States, we have delivered five vehicles in Japan (including to the aforementioned company), five in Los Angeles and two in San Francisco.

Honda FC Stack

In October 2003, we announced the development of Honda FC Stack, a remarkably compact, next-generation fuel cell stack that delivers high performance, yet operates at temperatures as low as minus 20°C. It is the world's first fuel stack to feature a stamped metal separator structure

and newly developed electrolyte membranes. The *FCX* fuel cell vehicle, equipped with the Honda FC Stack, was certified in September 2003 by the Japanese Ministry of Land, Infrastructure and Transport. Since then, we have begun full-scale testing to confirm the vehicle's cold-start abilities and driving performance. A Honda FC Stack-equipped *FCX* took the role of lead car in the 80th Tokyo-Hakone Ekiden relay race in January 2004.

The Honda FC Stack offers much more than high output and excellent cold starts. By replacing many special materials with more readily available materials, Honda has developed a next-generation fuel cell stack with a view to volume production and the ultimate need to recycle fuel cell vehicles.

GREEN FACTORIES

Goals for Fiscal 2004

Honda's fiscal 2004 goal was to achieve an energy unit target of 21.9 CO₂ tons per ¥100 million, a 20.4% reduction from 1990 levels.

Progress Report

In fiscal 2004, Honda reported an energy unit of 22.3 CO₂ tons per ¥100 million, down 18.9% from 1990 levels.

*1. To give greater impetus to the use of "Low Emission Vehicles", the Ministry of Land, Infrastructure and Transport of Japan instituted this approval system. "Low Emission Vehicles" with HC and NOx emission levels below the 2000 exhaust emissions standards are classed into three categories for approval.

25% lower than the standards: "Good"
50% lower than the standards: "Excellent"
75% lower than the standards: "Ultra"

*2. This is a new approval scheme established by the Ministry of Land, Infrastructure and Transport to accelerate the diffusion of "Low Emission Vehicles". "Low Emission Vehicles" with HC and NOx emission levels below the 2005 exhaust emissions standards are classified into two categories for approval.

50% lower than the standards: ★★★
75% lower than the standards: ★★★★