

## Environmental Performance

### **2020 Environment Initiative Plan (Fiscal 2016 Targets and Achievements)**

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Hino Motors has formulated its 2020 Environment Initiative Plan, comprised of goals and measures to implement over the period covering fiscal 2016 through 2020.

Under the plan, Hino Motors intends to carry out environmental management and measures to help promote low-carbon and recycling-oriented societies as priority tasks over the medium term, based on considerations of social trends and its main policies, including the Hino Credo and its CSR Policy.

As a manufacturer of commercial vehicles which supporting people's lives, Hino Motors hopes to help society develop more sustainably by supplying vehicles that it has designed with the environment in mind over the entire product lifecycle.

 Special Feature : Aiming to be a Company that Can Help Society Develop Sustainably ~Hino Motors Establishes its 2020 Environment Initiative Plan~



Designates priority tasks	Field	Item	Specific Action Items/Targets, etc.	Fiscal 2016 Achievements and Challenges for the future													
Building Low-carbon Society	Product development	Improve CO <sub>2</sub> emissions and fuel consumption performance of vehicles	<p><b>Develop technologies to meet world's top-class fuel efficiency standards</b></p> <ul style="list-style-type: none"> <li>Japan: Develop technologies to improve fuel efficiency to meet next round of regulations Improve the performance of hybrid vehicles</li> <li>United States: Develop technologies for enabling compliance with greenhouse gas emission regulations in 2020</li> <li>Europe: Develop technologies to improve fuel efficiency to meet next round of regulations</li> </ul>	Released new models of HINO Profia heavy-duty trucks and HINO Ranger medium-duty trucks. The HINO Profia now has 10% greater fuel efficiency than the 2015 fuel efficiency standards, while the HINO Ranger features 5% greater fuel efficiency. Produced a new model of its medium-duty bus with the release of the HINO Rainbow. Fuel efficiency standards for heavy vehicles are achieved on all models by adopting a mechanical automatic transmission and reducing truck weight with a newly developed body.													
		Promote the development of vehicles that run on clean energy	<p><b>Conduct R&amp;D on electric vehicles</b></p> <ul style="list-style-type: none"> <li>Plug-in hybrid vehicles: Conduct R&amp;D intended for making the technology feasible</li> <li>Fuel cell vehicles: Develop fuel cell vehicles and sell a limited number</li> <li>Electric vehicles: Conduct R&amp;D intended for commercializing electric trucks and buses</li> </ul> <p><b>Conduct research on technologies for enabling the use of alternative fuels</b></p> <ul style="list-style-type: none"> <li>Develop technologies that enable a switchover to biofuels and other alternative fuels</li> </ul>	Jointly developed fuel cell (FC) buses with Toyota Motor Corporation. The Toyota FC Bus will be used on bus routes operated by the Bureau of Transportation of the Tokyo Metropolitan Government.													
	Production and logistics	Initiatives for reducing CO <sub>2</sub> emissions in production activities	<p><b>Carry out initiatives for reducing CO<sub>2</sub> emissions on both a total and per-vehicle basis by introduce low-CO<sub>2</sub> production technologies, and reduce CO<sub>2</sub> through daily improvements</b></p> <ul style="list-style-type: none"> <li>Consider to exploit renewable energy and renewable energy</li> </ul> <p>■ Energy Derived CO<sub>2</sub></p> <table border="1" data-bbox="462 1186 857 1543"> <thead> <tr> <th>Region</th> <th>Item</th> <th>FY 2020 Target</th> </tr> </thead> <tbody> <tr> <td>Global</td> <td></td> <td>26% less than FY 2008</td> </tr> <tr> <td rowspan="2">Japan Group</td> <td rowspan="2">Emissions per unit yield</td> <td>24% less than FY 2008</td> </tr> <tr> <td>30% less than FY 2008</td> </tr> <tr> <td>Hino</td> <td>Emissions</td> <td>Fiscal 2020 output target X active mass</td> </tr> </tbody> </table> <p><b>Control emissions of other greenhouse gases besides CO<sub>2</sub></b></p>	Region	Item	FY 2020 Target	Global		26% less than FY 2008	Japan Group	Emissions per unit yield	24% less than FY 2008	30% less than FY 2008	Hino	Emissions	Fiscal 2020 output target X active mass	Steadily promoted the following goals at the CO <sub>2</sub> Reduction Working Group, which was launched to achieve 2020 goals. <ul style="list-style-type: none"> <li>■ Global Operations Reduced emissions per unit by 26% compared to FY2008</li> <li>■ Consolidated Companies in Japan Reduced emissions per unit by 25% compared to FY2008</li> <li>■ Hino Motors, Ltd Reduced emissions per unit by 32% compared to FY2008 Emissions of fiscal 2015 were 204 thousand tons HINO Motors will create technologies and formulate plans to achieve additional long-term goals (30–50 years)</li> </ul>
	Region	Item	FY 2020 Target														
Global		26% less than FY 2008															
Japan Group	Emissions per unit yield	24% less than FY 2008															
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	Make transportation more efficient and reduce CO <sub>2</sub> emissions in logistics	<p><b>Promote initiatives to reduce CO<sub>2</sub> emissions in logistics by improving efficiency of transportation.</b></p> <ul style="list-style-type: none"> <li>Shorten distribution routes between factories and improve shipping efficiency by using tractor-trailers and increasing transport loading rates</li> <li>Use more fuel-efficient vehicles</li> <li>Improve efficiency of vehicle parts shipments</li> </ul> <table border="1" data-bbox="462 1900 857 1948"> <thead> <tr> <th>Region</th> <th>Item</th> <th>FY 2020 Target</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Region	Item	FY 2020 Target				<ul style="list-style-type: none"> <li>■ Consolidated Companies in Japan Reduced emissions per unit of transport volume by 20% compared to FY2008 Further efforts to assess impact due to plant relocation and to promote emissions reduction activities.</li> <li>■ Overseas Operations Promoting reduction activities in each country</li> </ul>								
Region	Item	FY 2020 Target															

Designates priority tasks	Field	Item	Specific Action Items/Targets, etc.			Fiscal 2016 Achievements and Challenges for the future
			Japan Group	Emission per unit of transport	26% less than FY 2008	
			International	Set target and promote reduction measures according to the highest standards in each country		
	Sales and after-sales service	Initiatives for reducing CO <sub>2</sub> emissions in sales activities	<ul style="list-style-type: none"> <li>• Create and execute plan to reduce energy consumption per unit by at least 1% per year at Japanese sales offices;</li> <li>• Assist customers in reducing CO<sub>2</sub> emissions during driving through eco-driving seminars and other initiatives</li> </ul>			Achieved reductions by installing low-energy-consumption lighting and placing restrictions on air conditioning usage⇒ Decreased total energy consumption per unit by 1.3% compared to the previous fiscal year

Designates priority tasks	Field	Item	Specific Action Items/Targets, etc.	Fiscal 2016 Achievements and Challenges for the future														
Creation of Closed Loop Economy	Product development	Develop technologies that enable elimination of the use of scarce resources	<b>Reduce the amount of precious metals used in exhaust-cutting catalytic converters</b>	Excavated precious metal substitutes for gas emission reduction catalysts														
		Develop new vehicles with a higher ratio of recyclable components	<b>Initiatives to create assembled structures that are easy to disassemble</b>	Incorporated considerations for recycling and disassembly in the design of vehicle structural components and created manuals explaining disassembly Contributed to effective use of resources by reducing vehicle body weight.														
	Production and logistics	Reduce waste from production and logistics, and use resources effectively	<p><b>Adopt waste reduction technologies and promote waste reduction in regular improvement activities</b></p> <ul style="list-style-type: none"> <li>Facilitate more effective usage of resources by improving yield rates and managing the sources of waste</li> <li>Promote the usage of the Hino Motors Group's resource</li> </ul> <p>■ <b>Waste</b></p> <table border="1" data-bbox="618 722 1013 1010"> <thead> <tr> <th>Region</th> <th>Object</th> <th>Item</th> <th>FY 2020 Target</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Japan Group</td> <td rowspan="2">waste</td> <td>Generated per unit yield</td> <td>43% less than FY 2008</td> </tr> <tr> <td>Final disposal</td> <td>Zero ※</td> </tr> <tr> <td>International</td> <td colspan="3">Integrate waste reduction performance in management</td> </tr> </tbody> </table> <p>※ Definition of Zero: Landfill amount including ash after incineration is not more than 0.5%, compared with total waste including recyclable.</p>	Region	Object	Item	FY 2020 Target	Japan Group	waste	Generated per unit yield	43% less than FY 2008	Final disposal	Zero ※	International	Integrate waste reduction performance in management			<p>■ Consolidated Companies in Japan Reduced amount of waste generated per unit by 42% compared to FY2008 Achieved a final disposal rate of 0.17%</p> <p>We will continue reducing activities through each conference</p> <p>■ Overseas operations Set targets for waste matter in each country and proceeded to make reductions</p>
		Region	Object	Item	FY 2020 Target													
		Japan Group	waste	Generated per unit yield	43% less than FY 2008													
	Final disposal			Zero ※														
International	Integrate waste reduction performance in management																	
Initiatives for reducing water usage in production activities	<p><b>Promote activities for reducing water consumption in consideration of water supply conditions in each country and region where the Group operates</b></p> <ul style="list-style-type: none"> <li>Conserve water through actively introduce water-saving technologies and continual improvement</li> </ul> <p>■ <b>Water usage</b></p> <table border="1" data-bbox="618 1381 1013 1556"> <thead> <tr> <th>Region</th> <th>Item</th> <th>FY 2020 Target</th> </tr> </thead> <tbody> <tr> <td>Japan Group</td> <td>Water use per unit yield</td> <td>40% less than FY 2008</td> </tr> <tr> <td>International</td> <td colspan="2">Integrate water usage reduction performance in management</td> </tr> </tbody> </table>	Region	Item	FY 2020 Target	Japan Group	Water use per unit yield	40% less than FY 2008	International	Integrate water usage reduction performance in management		<p>■ Consolidated Companies in Japan Reduced water usage per unit by 39% compared to FY2008 Further water-saving equipment to be installed and recycling promoted.</p> <p>■ Overseas operations Set targets in each country and proceeded to make reductions</p>							
Region	Item	FY 2020 Target																
Japan Group	Water use per unit yield	40% less than FY 2008																
International	Integrate water usage reduction performance in management																	
Initiatives for reducing usage of packaging materials and use resources effectively	<p><b>Reduce usage of packing and shipping materials by making them returnable and more lightweight</b></p> <ul style="list-style-type: none"> <li>Enable use of returnable racks in more countries</li> <li>Improve methods of packing vehicle parts</li> </ul> <p>■ <b>Packaging Materials</b></p> <table border="1" data-bbox="618 1801 1013 1919"> <thead> <tr> <th>Region</th> <th>Item</th> <th>FY 2020 Target</th> </tr> </thead> <tbody> <tr> <td>Japan Group</td> <td>Use per unit of shipment volume</td> <td>57% less than FY 2008</td> </tr> </tbody> </table>	Region	Item	FY 2020 Target	Japan Group	Use per unit of shipment volume	57% less than FY 2008	<p>■ Consolidated Companies in Japan Reduced amount of packaging materials used per unit of shipment volume by 62% compared to FY2008 Further efforts to assess impact due to plant relocation and to promote emissions reduction activities.</p> <p>■ Overseas operations Promoting reduction activities in each country</p>										
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Japan Group	Use per unit of shipment volume	57% less than FY 2008																

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			International Calculate the amount of packaging materials used and expand activities to reduce them	

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Environmental Conservation & Creation of Society Coexisting in Harmony with Nature	Product development	Reduce gas emissions to help improve urban air quality in each country and region	<p><b>Introduce vehicles with lower gas emissions to help improve urban air quality in each country and region</b></p> <ul style="list-style-type: none"> <li>Japan: Release vehicles to the market that comply with Japan's 2016 exhaust emission regulations Research and develop new technologies to comply with new exhaust regulations starting in 2016</li> <li>United States: Bring vehicles to market that comply with US13, and Develop vehicles that comply with U.S. exhaust emission standards effective from 2016</li> <li>Europe and developed countries: Develop and release vehicles to the market that comply with EURO 6 exhaust emission standardsIn</li> <li>general: Introduce low-emission vehicles (EURO4 or 5 level)</li> </ul>	Released new models of the HINO Profia heavy-duty trucks and HINO Ranger medium-duty trucks. These trucks' new engines employ technology that reduces two-stage supercharging and frictional resistance. They conform to 2016 gas emission regulations thanks to further improvements in their after-treatment systems. Released small-duty trucks with improved performance. A model compliant with 2016 gas emission regulations was also added to the lineup.													
		Further reduce the use of environmentally harmful materials	<p><b>Collect and manage information on increasing regulations in each country where the Group operates, and take the lead in switching to alternative materials</b></p>	Collected and managed all material data including that for unregulated substances.													
	Production and logistics	Reduce substances that impact the environment in production activities (VOC)	<p><b>Promote reduction of VOCs through constant improvement</b></p> <ul style="list-style-type: none"> <li>Reduce the use of painting materials and thinners in vehicle painting work</li> </ul> <p>■ <b>Body Painting</b></p> <table border="1"> <thead> <tr> <th>Region</th> <th>Item</th> <th>FY 2020 Target</th> </tr> </thead> <tbody> <tr> <td>Hino</td> <td>VOC Emissions per surface area painted</td> <td>Less than 22 grams of VOCs per square meter of painted surface area</td> </tr> <tr> <td>International</td> <td colspan="2">Broaden initiatives for reducing emissions of VOCs</td> </tr> </tbody> </table> <p>■ <b>Other Paintings</b></p> <table border="1"> <tbody> <tr> <td>Hino</td> <td>Set annual reduction targets on a per-vehicle basis every year</td> </tr> <tr> <td>Japan/Intl.</td> <td>Integrate VOCs reduction performance in management</td> </tr> </tbody> </table>	Region	Item	FY 2020 Target	Hino	VOC Emissions per surface area painted	Less than 22 grams of VOCs per square meter of painted surface area	International	Broaden initiatives for reducing emissions of VOCs		Hino	Set annual reduction targets on a per-vehicle basis every year	Japan/Intl.	Integrate VOCs reduction performance in management	<p>■Hino Motors, Inc. Achieved 18 grams of VOCs per square meter of painted surface area Promote initiatives relating to renovation plan for painting equipment and facilities and continued efforts to reduce volatile organic compounds (VOC) through constant improvements.</p> <p>■ Overseas Operations Currently compiling results</p> <p><b>Other Painting-related Initiatives</b></p> <p>Further efforts to assess the current status of other components and implementation of detailed study into items for reduction.</p>
		Region	Item	FY 2020 Target													
	Hino	VOC Emissions per surface area painted	Less than 22 grams of VOCs per square meter of painted surface area														
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Social contribution	Implement biodiversity preservation activities locally at factories in every region where the Group operates	<p><b>Promote initiatives based on biodiversity guidelines</b></p> <ul style="list-style-type: none"> <li>Carry out regular activities in consideration of the unique ecosystems surrounding the factories in each country and region (including forest conservation and protection of local habitats)</li> <li>Undertake environmental conservation initiatives together with local residents and children</li> </ul>	Carried out initiatives in consideration of ecosystems surrounding workplaces incountries worldwide -Hino- Weed clearing in Ome City -Koga- Weeding using goats -USA- Clean-up along the Ohio River Further efforts to spread awareness of the Guidelines within the Company and promote related activities.														

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Environmental Management	Management	Strengthen and promote group environmental management	Japan/Intel.: Activities to ensure No.1 of environmental performance in each country and region Comply with environmental laws in each country and region, and enhance activities to prevent environmental risk	The Company's activities are listed below. Issued periodic reports on environmental performance and improvement initiatives at group companies in and outside Japan Made progress in eco-factory initiatives at group companies in and outside Japan Compiled list of requests and created diagnostic tools in order to launch environmental management systems (EMS) diagnosis at overseas production sites. Achieve further improvements by holding interactive seminars and workshops to improve capabilities
		Promote environmental activities in collaboration with business partners (Our suppliers)	Suppliers: Compliance with laws by suppliers, and enhance management of substances that impact the environment contained in parts, raw materials, secondary materials, production equipment, etc. Request for environmental performance activities	Suppliers Began improving and employing in-house chemical management systems to account for stricter global chemical substance regulations
		Promote environmental activities in collaboration with business partners (Dealers and distributors)	<ul style="list-style-type: none"> <li>Sales in Japan: Promote environmental activities by sales companies via each Environmental Management System.</li> <li>Sales outside Japan: Grasping the burden on the environment and act continually to raise awareness of the environment</li> </ul>	<ul style="list-style-type: none"> <li>Consolidated subsidiaries in Japan Implemented environmental activities at 222 dealers across Japan to facilitate related improvements and upgrades Certified two more dealers as Eco-Management Dealers, bringing the total to 221 nationwide</li> <li>Overseas Sales Operations Shared environment-related data monthly with overseas sales offices Held events to promote environmental awareness during World EnvironmentMonth in June</li> </ul>
		Improve global human resources development and training programs	<b>Systematically implement environmental education and awareness training programs for every employee</b>	The Company's activities are listed below. Implemented online environmental education, carried out graded training programs, and provided education and tests on ISO internal environmental audits Designed graded training courses Conducted an environmental awareness survey Distribution of president message to employee and affiliated companies. Held environmental exhibitions and presented various awards Implemented an in-house eco-point system and presented related awards Continue to actively promote initiatives that boost environmental awareness, including the planning of participatory events for employees.
		Actively disclose environmental information and enhance communication	<ul style="list-style-type: none"> <li>Enhance provision of information on product environmental technologies in each country and region (e.g. exhibiting at expos)</li> <li>Continually publish CSR reports and other documents in each country and region, and publish at more sites</li> <li>Enhance environmental communication in each country and region</li> </ul>	The Company's activities are listed below. Exhibited Hino Motors' new fuel-efficient engines and introduced the Company's environmental technologies at the Automotive Engineering Exposition. Four subsidiaries worldwide issued CSR reports Carried out interactive events with community residents at subsidiaries around the world Continue to actively engage in information provision outside the company