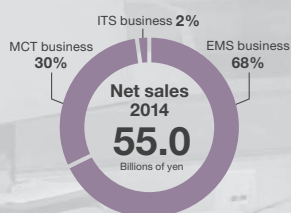
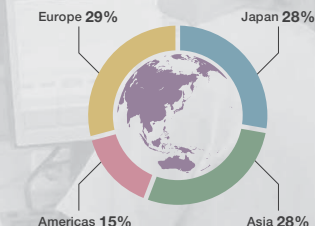


# Automotive Test Systems

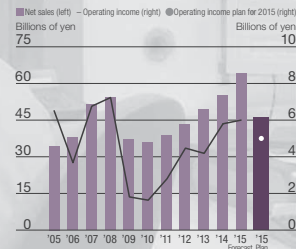
Sales breakdown



Sales breakdown by region



Net sales and operating income



## Providing a powerful support to the automotive development

HORIBA's automotive EMS (Emission Measurement Systems) are adopted by national certification bodies throughout the world, commanding an installed base market share of 80%. HORIBA provides complete test and measurement solutions for automotive development, such as test systems for chassis, engines, power trains, and brakes to major global automotive manufacturers. Customers find HORIBA test systems to be indispensable tools developing new technologies required to meet rising global fuel economy and emission standards. HORIBA test systems find applications in the development of conventional gasoline and diesel engines, hybrid electric power trains, alternative fuel engines, and electric vehicles. We expect the increasing demand for automotive test systems to drive growth in our business.

## 2014 results and 2015 forecasts Investing to achieve higher production efficiency and expand the MCT business

EMS sales increased in 2014, thanks to an increase in automotive manufacturers' R&D investment globally and the weakening of the Japanese yen. Both sales and operating income increased year-on-year, due to improvement in profitability of the MCT (Mechatronics) business, in addition to the high-margin EMS business.

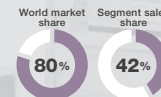
In 2015, we are expecting automotive manufacturers to continue to increase their investments. In addition, automotive component manufacturers tend to increasing their investments in technology development, leading to an expansion of the market for HORIBA products. Against this background, we project a significant increase in MCT sales, and plan to

## Major products and market shares

NOTE: Market shares quoted are estimates by HORIBA.

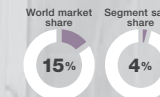
### Emission measurement systems

These systems continuously and simultaneously measure a wide range of gaseous and particle components in emission gases over a broad range of concentrations. They are widely used in R&D and engine/vehicle certification in the automotive industry.



### Driveline test systems

The driveline is an extremely important part of the overall powertrain that transmits energy from engines or motors to the vehicles' tires. HORIBA's driveline test systems will use the latest simulation technology for a wide range of powertrain and driveline testing applications. HORIBA's strength is demonstrated by providing flexible systems based on custom and open solutions.



further improve profitability by sales volume increase and cost reduction. At the same time, we are expecting to incur a one-time relocation expense related to HORIBA BIWAKO E-HARBOR, our new integrated development and production facility, in which construction is scheduled to be completed in the autumn of 2015. As a result, we are projecting a modest increase in operating income on a significant sales gain.

development. HORIBA, with its broadening MCT product portfolio is able to provide automotive manufacturers with more comprehensive measurement systems via integration of EMS and MCT products, within its open and custom test automation systems. Following our unique open and custom test systems approach, a strong commitment to new product development and leveraging our core analytical know-how, HORIBA expects to meet increasing customer demand for comprehensive, integrated solutions and continuously grow sales and enhance profitability.

## The advantage of comprehensive, integrated solutions

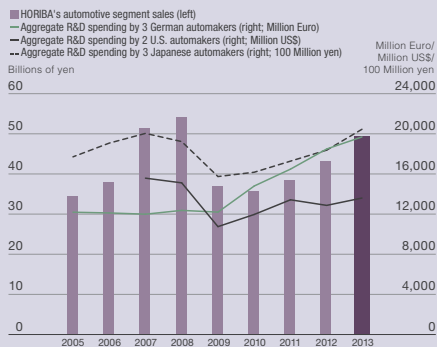
The global MCT market, which includes test systems for chassis, engines, power trains, and brakes, is worth over ¥150 billion in annual sales and is anticipated to continue growing on the strength of rising demand for automotive

## HORIBA'S automotive business

HORIBA aims to expand sales and improve profit by focusing investments in emissions measurement systems and powertrain & driveline test systems.

HORIBA business divisions	Gasoline & diesel	Hybrid	Electric	Market size (Billions of yen)
EMS business	Emissions measurement			40 -50
MCT business	Engine performance tests			100 -120
	Vehicles, wind tunnel balances, brake tests			15 -20
	Drivelines tests			30 -40
ITS business	Safety and ITS			10 -15

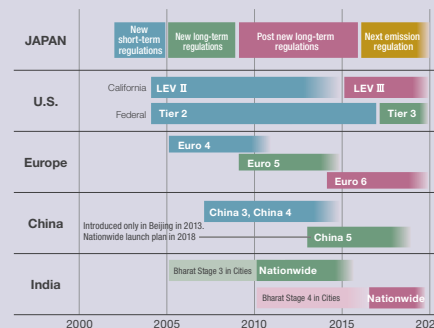
## HORIBA's Automotive Test Systems segment sales and major automakers' R&D spending



Source: HORIBA's survey based on companies' disclosed materials

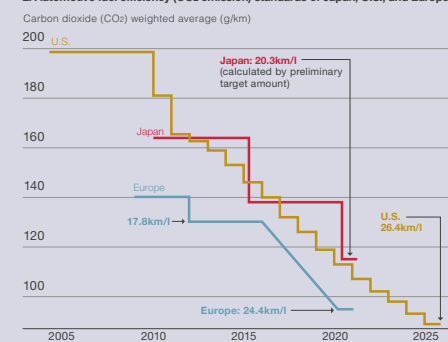
## Trend of automobile-related regulations

### 1. Progression of emission standards by region/country



Sources: HORIBA's survey based on materials of the Ministry of Economy, Trade and Industry; Ministry of Land, Infrastructure, Transport and Tourism; Japan Automotive Manufacturers Association Inc.; and others

### 2. Automotive fuel efficiency (CO<sub>2</sub> emission) standards of Japan, U.S., and Europe



Sources: HORIBA's survey based on materials of the Ministry of Economy, Trade and Industry, Japan Automotive Manufacturers Association Inc., and others