

# **Development & Dissemination of Environmentally Friendly Vehicles**

**(EFVs)**

**Kanji Nakayama**

**Director-General**

**Engineering and Safety Department  
Road Transport Bureau**

**Ministry of Land, Infrastructure and Transport  
(MLIT)**

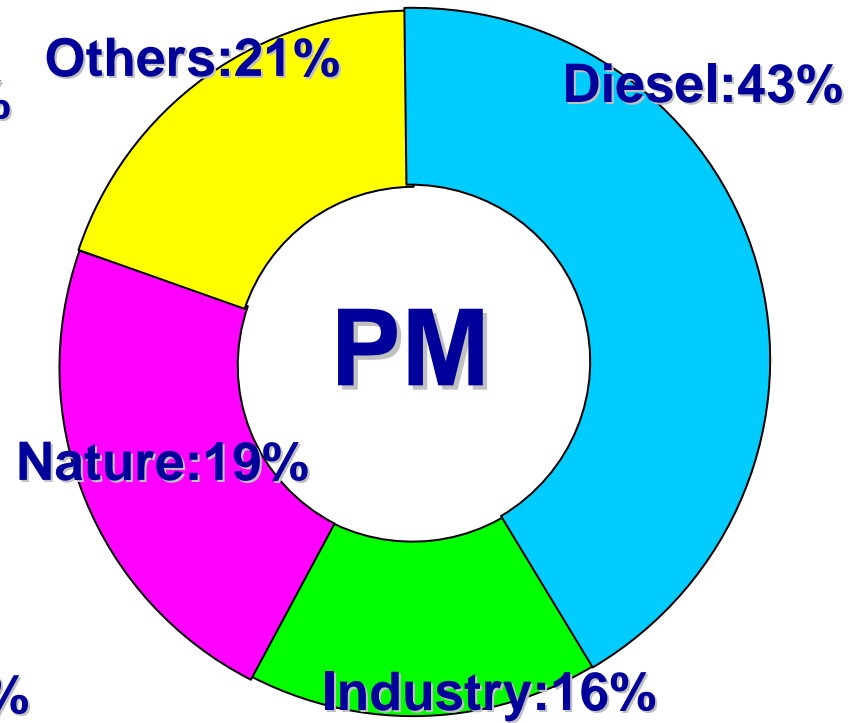
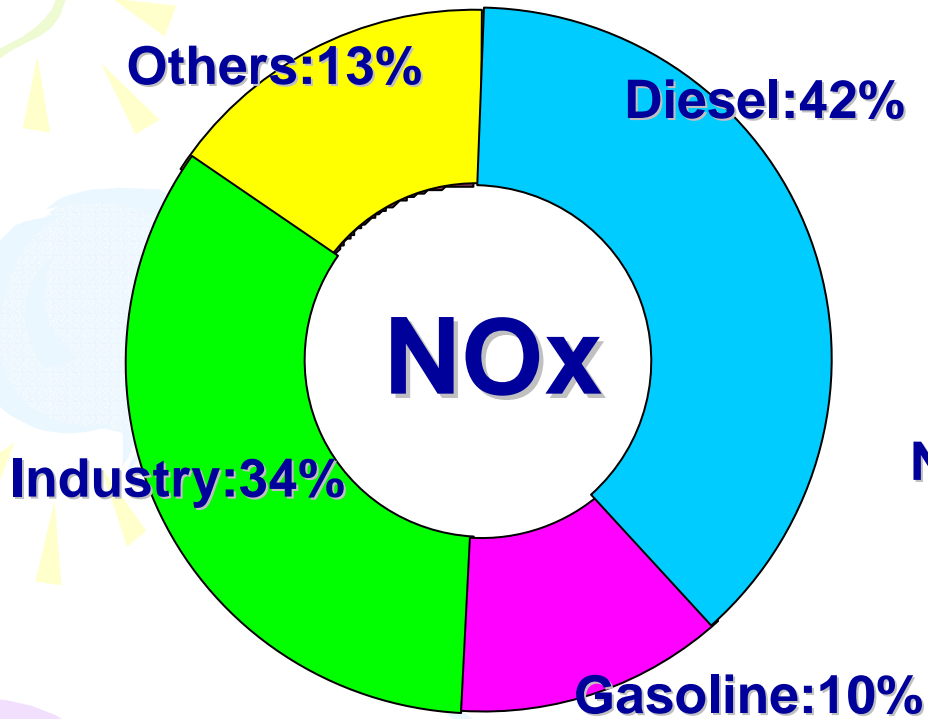
**January 28, 2004**



# Contents

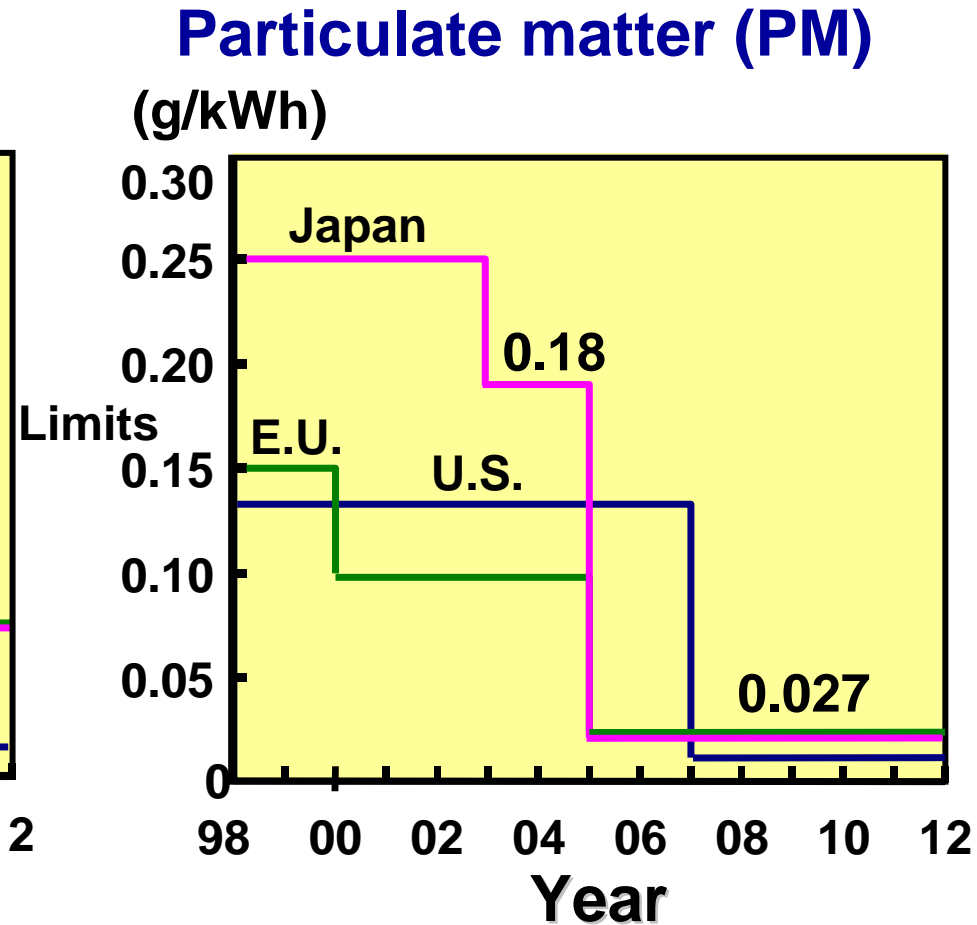
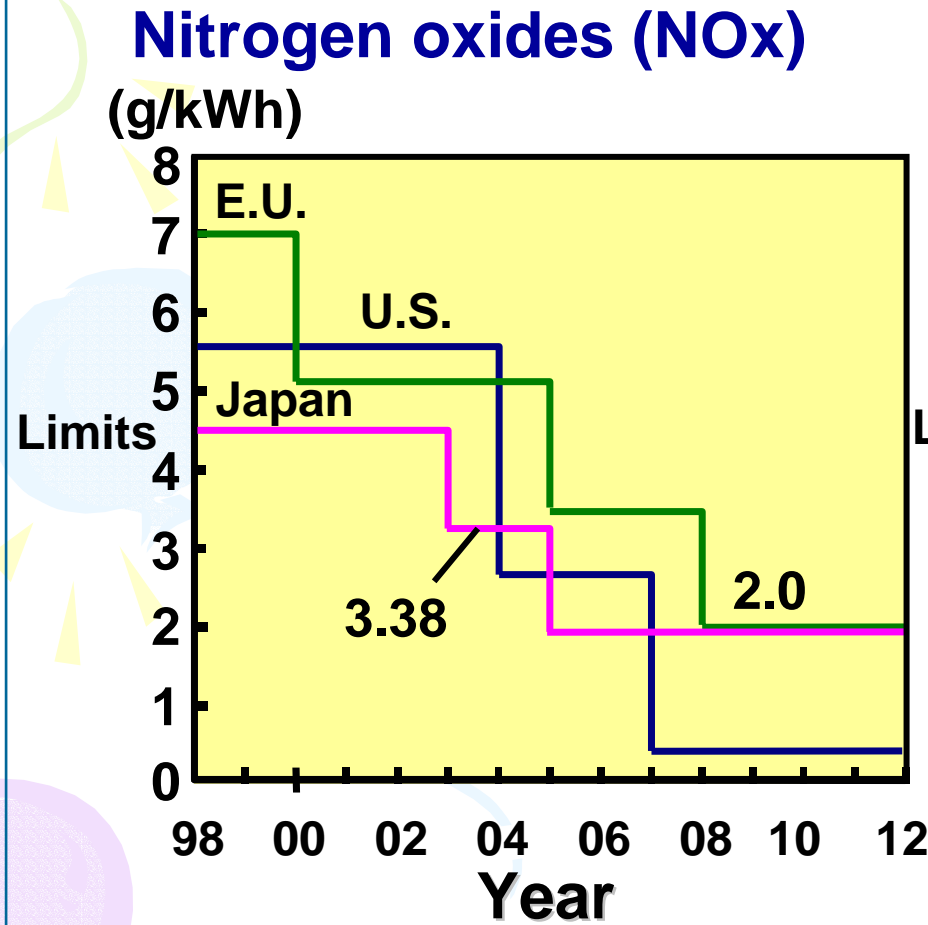
1. **Current Status & Countermeasures concerning Air Pollution**
2. **Current Status & Countermeasures concerning Global Warming**
3. **Countermeasures for the Development & Promotion of New Technologies**
4. **Conclusion**

# Ratio of Exhaust Emissions in Metropolitan Area



# Emission Regulations in the World: Today and Future

## - Heavy-duty vehicles (GVW>3.5t) -



Low-sulfur diesel needed to meet 2005 regulations

# Sulfur Regulation for Diesel Fuel

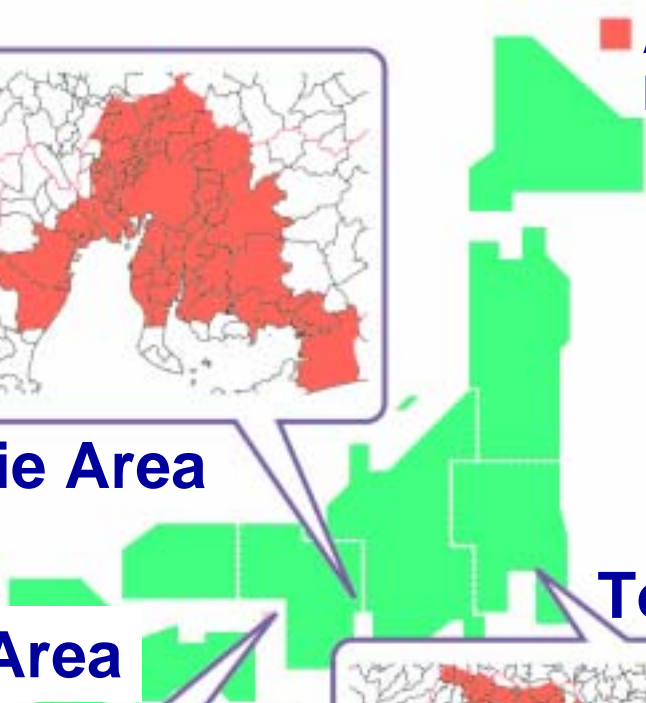


# Designated Areas under the Amended Motor Vehicle NOx·PM Act

■ Area designated for NOx/PM countermeasures

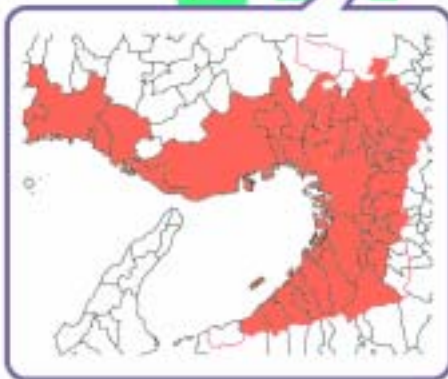


**Aichi/Mie Area**



**Tokyo Metropolitan Area**

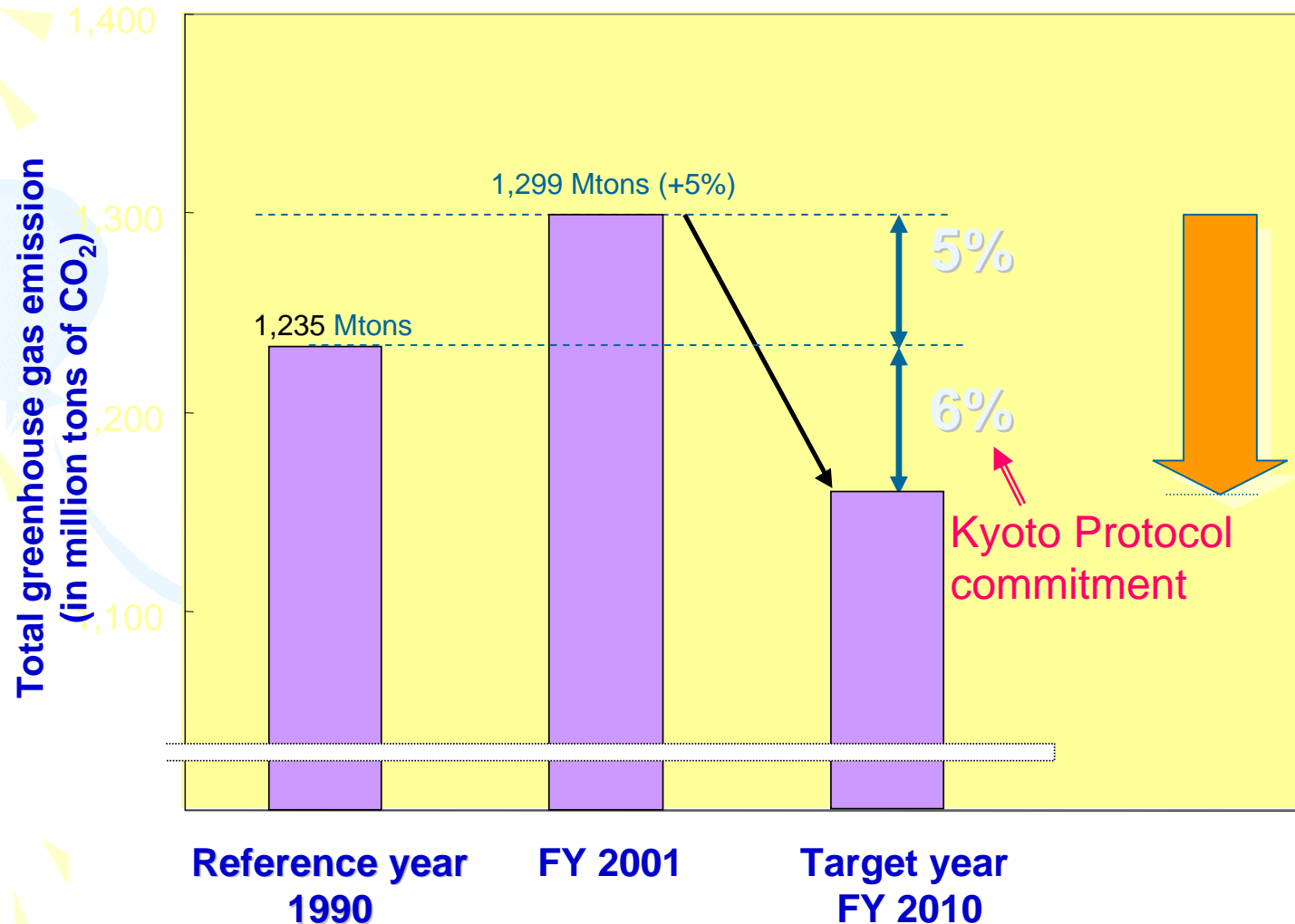
**Osaka/Hyogo Area**



# GREENHOUSE GAS EMISSIONS IN JAPAN

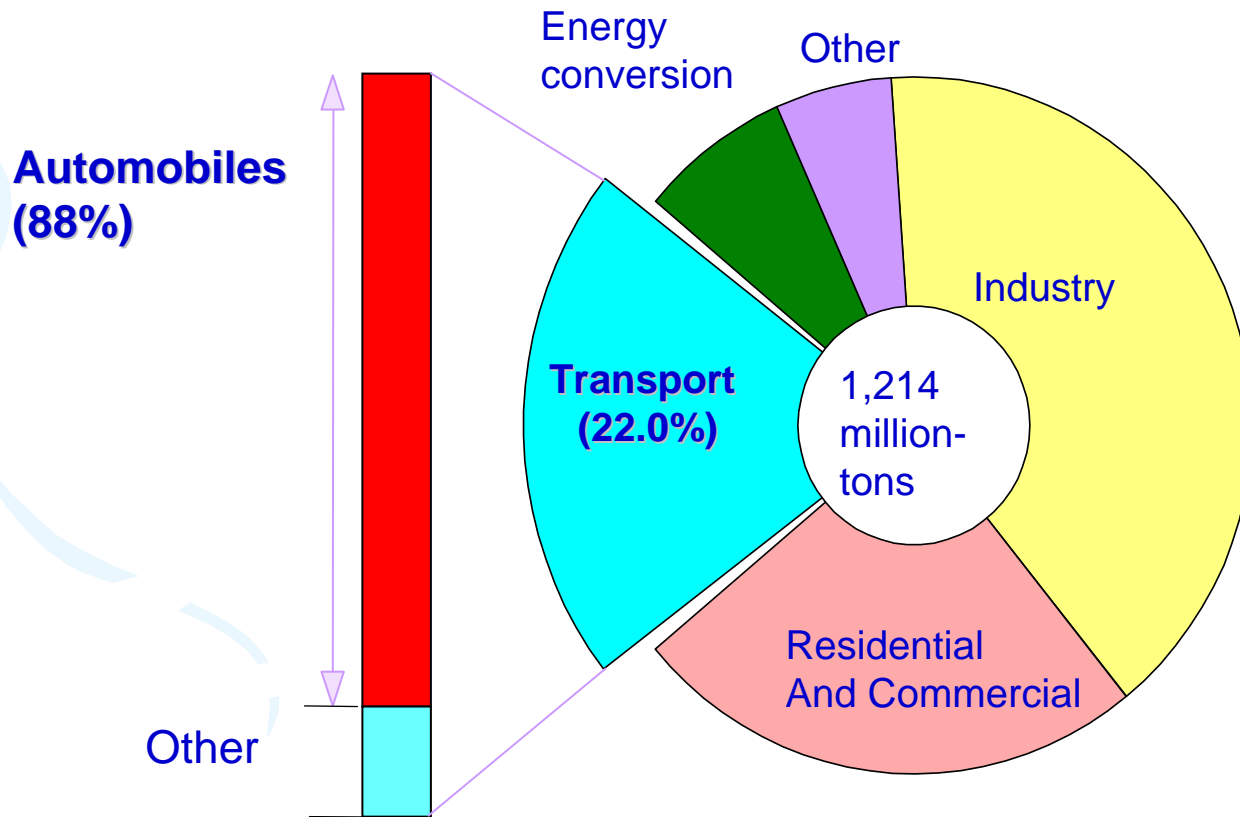
1,299 Million-tons of CO<sub>2</sub> Emitted in FY2001, Up 5.2% Over 1990

→ To achieve the committed 6% reduction, we must reduce 11% of GHG between 2001 and 2010.



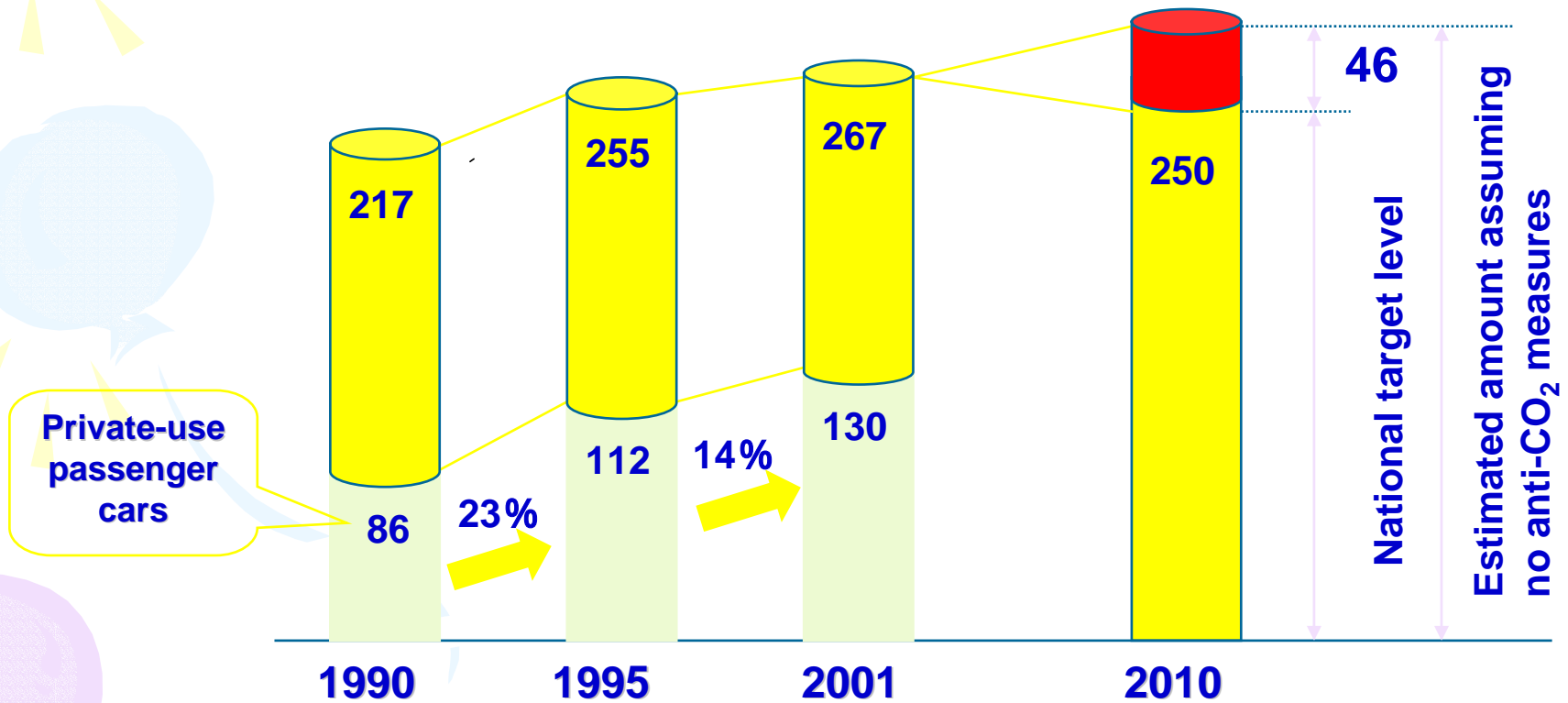
# CO<sub>2</sub> EMISSIONS BY SECTOR IN JAPAN

\* About 20% of CO<sub>2</sub> from Automobiles



# CO<sub>2</sub> EMISSIONS FROM TRANSPORT SECTOR

\* The Transport Sector must achieve a 46 million-ton Cut between 2001 and 2010.



# Countermeasures to Reduce CO<sub>2</sub> EMISSIONS

## \* Vehicle/Traffic Measures (Down 29.5 million-tons)

Measures on the Traffic Flow  
(Down 8.9 million-tons)

Development and Dissemination of EFVs  
(Down 20.6 million-tons)

- \* Establishment of a new fuel economy regulation
- \* Widespread use of environmentally friendly vehicles
- \* Widespread use of idle-stop vehicles

## \* Environmental Traffic System (Down 15.8 million-tons)

Modal shifts, Efficient Freight Services  
(Down 9.1 million-tons)

Promoting Use of Public Transport  
(Down 6.7 million-tons)

## \* Eco-Drive Promotion (Down 1.0 million-tons)

A Total 46 million-tons CO<sub>2</sub> Cut by Transport Sector (2010)

# Required Fuel-Economy Improvement for Passenger Cars

	Target year	Regulation	2002
<b>Gasoline</b>	<b>2010</b>	<b>15.1</b> km/L (3.4% improvement)	<b>14.6</b> km/L
<b>Diesel</b>	<b>2005</b>	<b>11.6</b> km/L (10.5% improvement)	<b>10.5</b> km/L
<b>LPG</b>	<b>2010</b>	<b>9.8</b> km/L (11.4% improvement)	<b>8.8</b> km/L <b>(2000)</b>

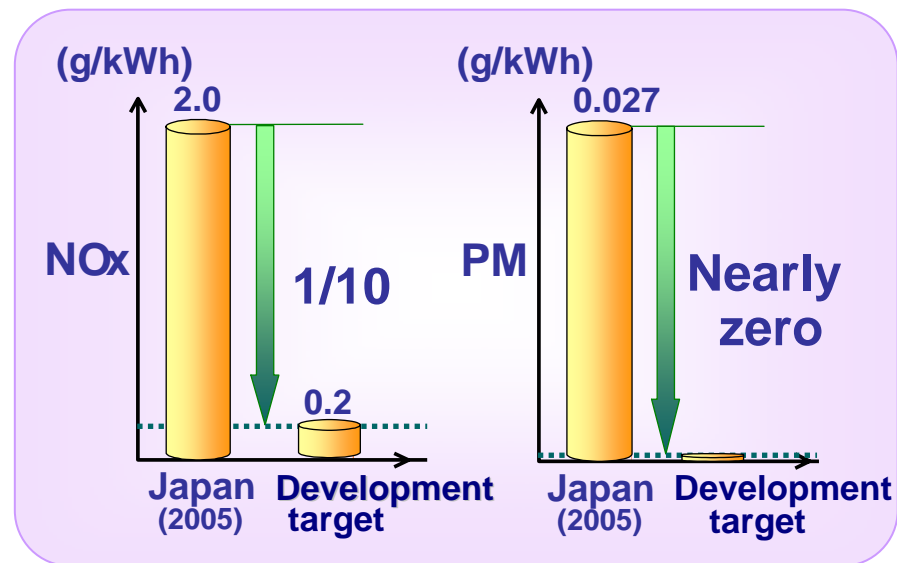
# Environmental Performance Targets for Next-Generation EFVs - Heavy-duty vehicles -

## ■ Fuel-efficiency target:

- Maintain present level of diesel vehicles (power and fuel consumption)

## ■ Emission targets:

- NOx: 1/10 of 2005 requirement
- PM: Nearly zero



# Support Programs for EFVs in Japan

## Target

**More than 10 million EFVs by 2010**

- **Subsidy programs for municipalities and private companies/individuals**
- **Tax incentives**
- **Low-interest financing**

# Promotional Measures for FCVs



- Development of Technical Regulation in FY2004
- Establishment of H<sub>2</sub> supply stations

**Target**

50,000 FCVs in 2010

5 million FCVs in 2020

# CONCLUSION

- **Development and Dissemination of EFVs from the standpoint of protection against both air pollution and global warming.**
- **Support to the Technological Development and Countermeasures for the Dissemination of EFVs**
- **To Develop EFVs, Close Cooperation among Governments, industries and academia as well as Exchange of the information between countries**
- **International Harmonization of the Regulation under the Framework of the UN/ECE/WP29**