# Sectoral Approach for Road Transport (Automobiles)

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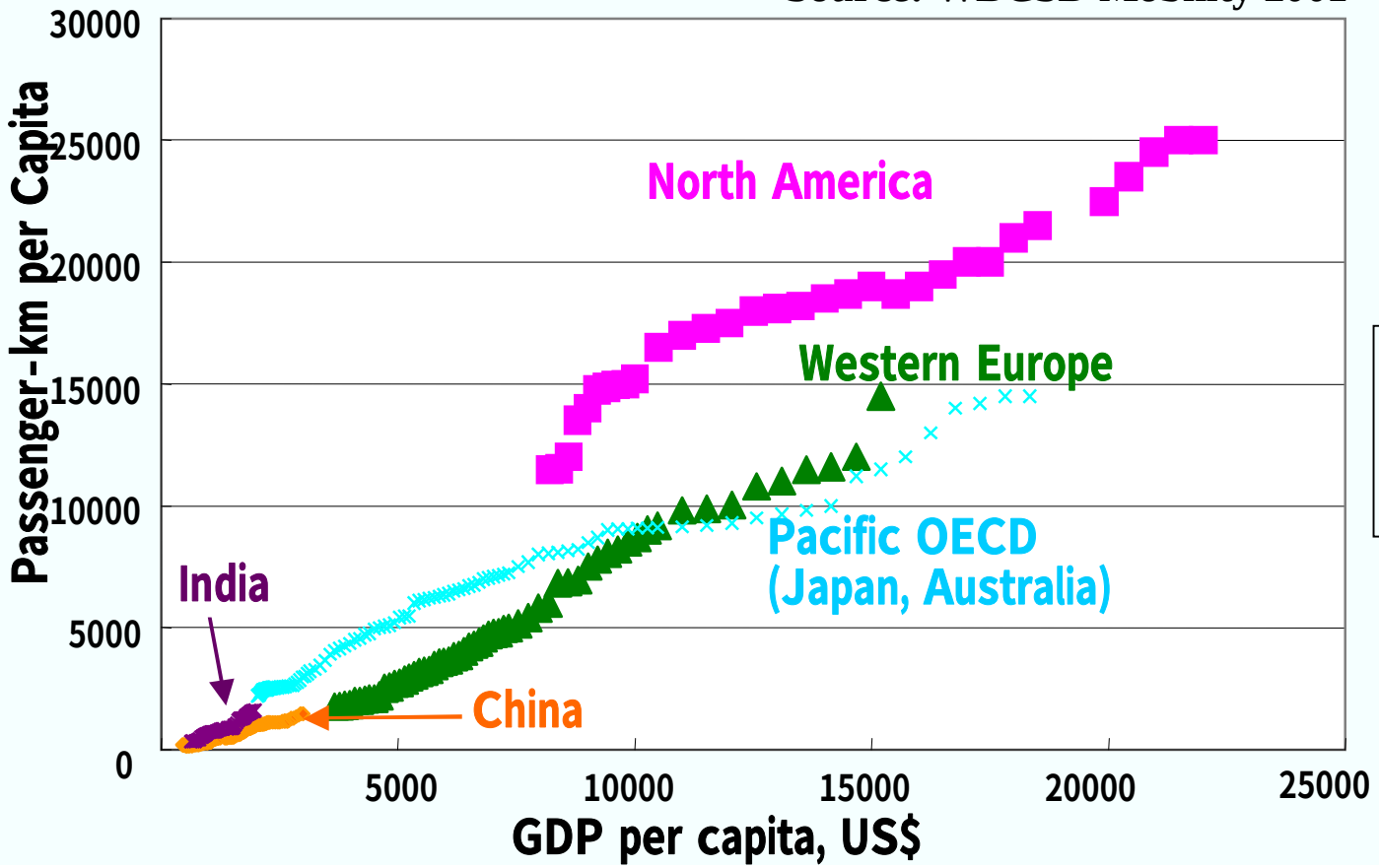
# $CO_2$ Emissions Increase Patterns in the Road Transport Sector

Economic growth in a developing country is always accompanied by motorization.
Curbing emissions in developing countries is absolutely necessary for $CO_2$ reduction in the global transport sector.

## Passenger Travel and GDP by Region: 1950-1997

Source: WBCSD Mobility 2001




Economic growth

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Motorization

↓

Increase in number of vehicles and travel distances

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Increase in $CO_2$ emissions

# Necessity of Bottom-Up Approach

The most effective means of reducing $CO_2$ emissions is to take measures in developing countries.
In the COP13 discussion of the post-Kyoto Protocol framework, however, the necessity of industrialized countries' efforts was emphasized, with EU and developing countries strongly insisting on imposing emissions reduction targets on developed countries.
In order to set up achievable reduction targets, the bottom-up approach may be a better tool in addition to the current top-down approach.

1) Among countries: industrial countries vs. developing countries, industrial country vs. industrial country, developing country vs. developing country.

**Top down** **Bottom up**

2) Within a country: industrial sector vs. consumer sector vs. transport sector, etc.

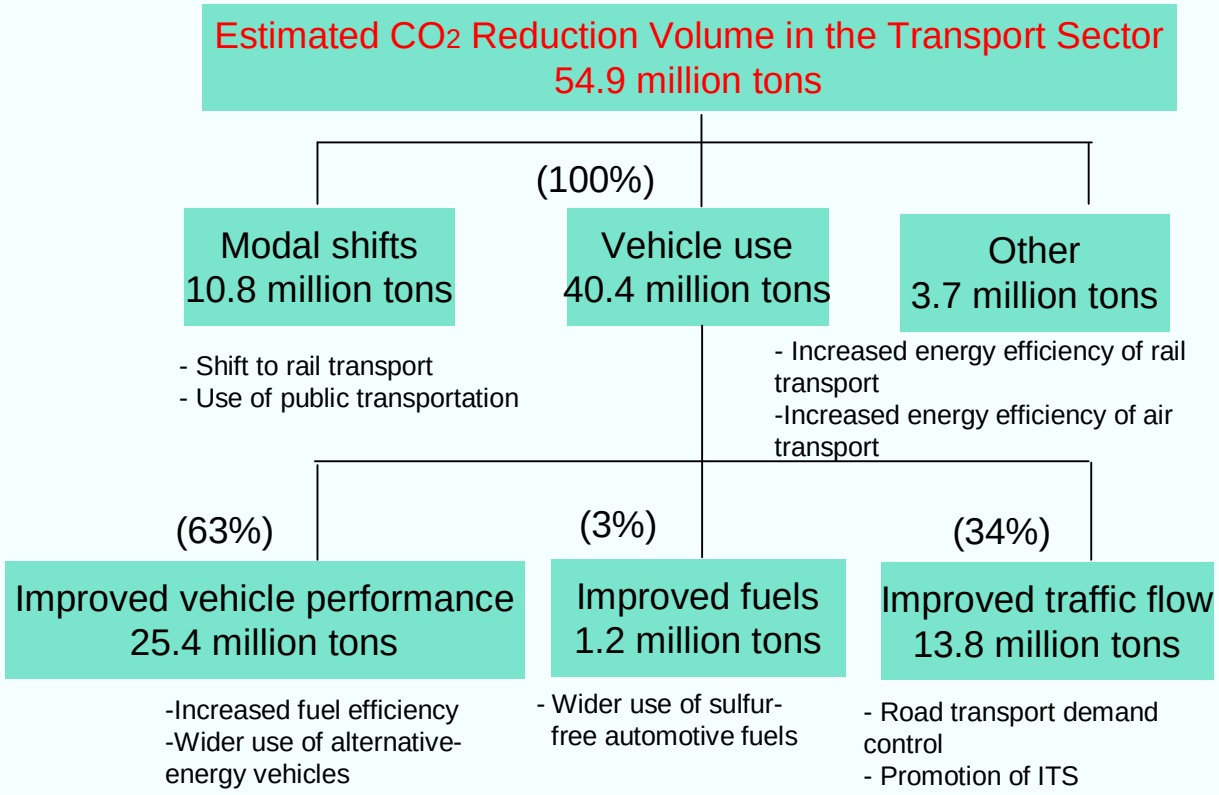
**Top down** **Bottom up**

3) Within the transport sector: vehicle fuel efficiency vs. road traffic measures vs. alternative-fuel development vs. air/sea/rail transportation, etc.

# Necessity of Bottom-Up Approach (continued)

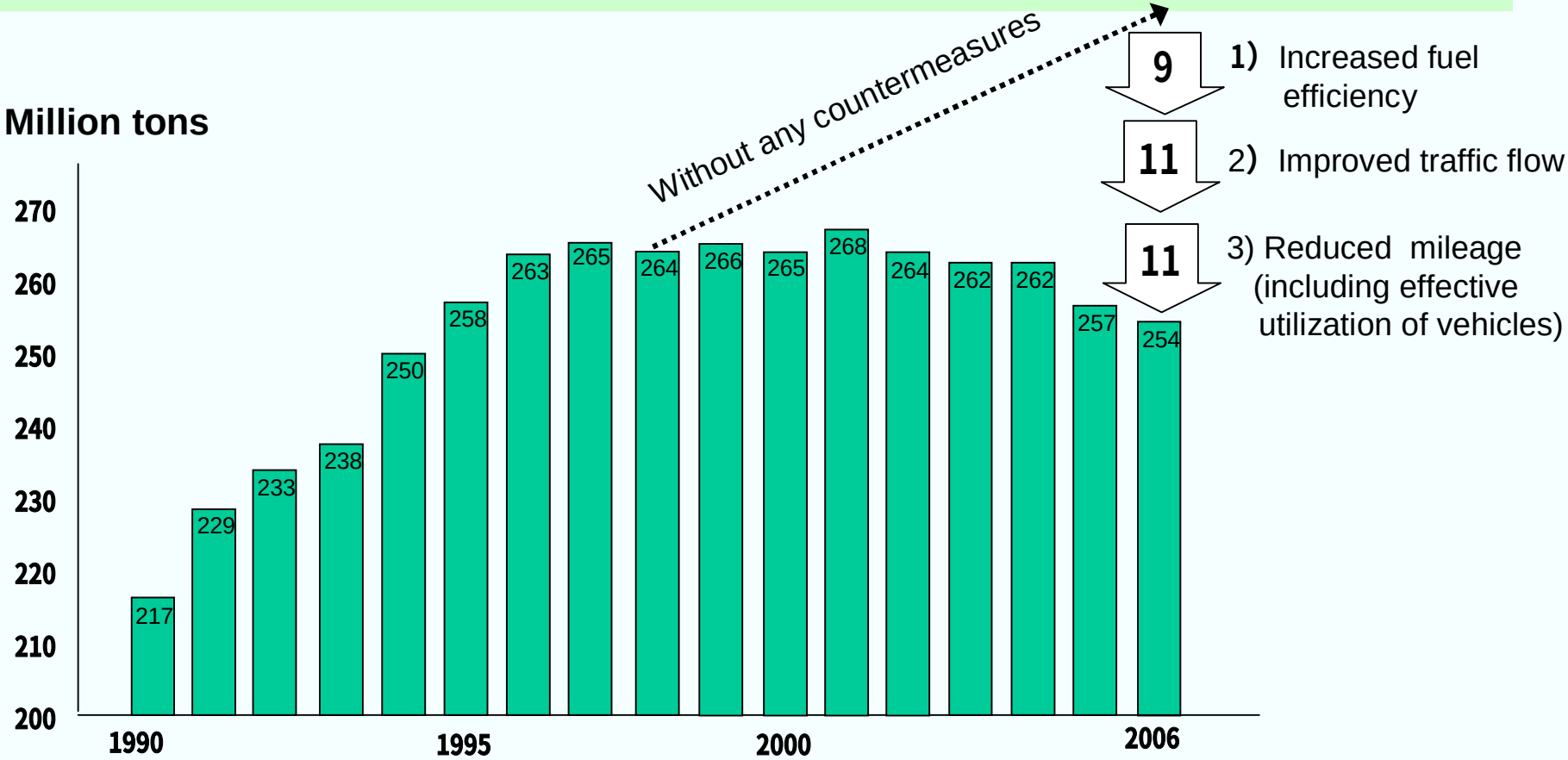
The target for Japan (-6% from 1990 level by 2010) was set through the top-down approach under the Kyoto Protocol.
Japan's transport sector actually took the bottom-up approach, tallying up reduction volumes expected from individual measures, and established an achievable reduction target.

**$CO_2$ Reduction Measures in Transport Sector**



# $CO_2$ Emissions in Japan's Transport Sector Continue to Decrease

After peaking in 2001, $CO_2$ emissions generated in the transport sector have been on the decrease. This is mainly attributable to 1) increased fuel efficiency, 2) improved traffic flow, and 3) effective utilization of vehicles.




Note: About 90% of $CO_2$ emissions generated by Japan's transport sector are caused by road transportation.

Source: Ministry of the Environment, JAMA

# $CO_2$ Reduction Requires an integrated Approach

Improving vehicle fuel efficiency alone is not enough to reduce $CO_2$ emissions in the road transport sector. An integrated approach is required, including development of alternative fuels, improvement of transportation infrastructure by the government and effective utilization of vehicles, which will ultimately make $CO_2$ reduction efforts compatible with economic growth.
All stakeholders concerned should identify their individual responsibilities and make their best efforts to carry them out in mutual cooperation.