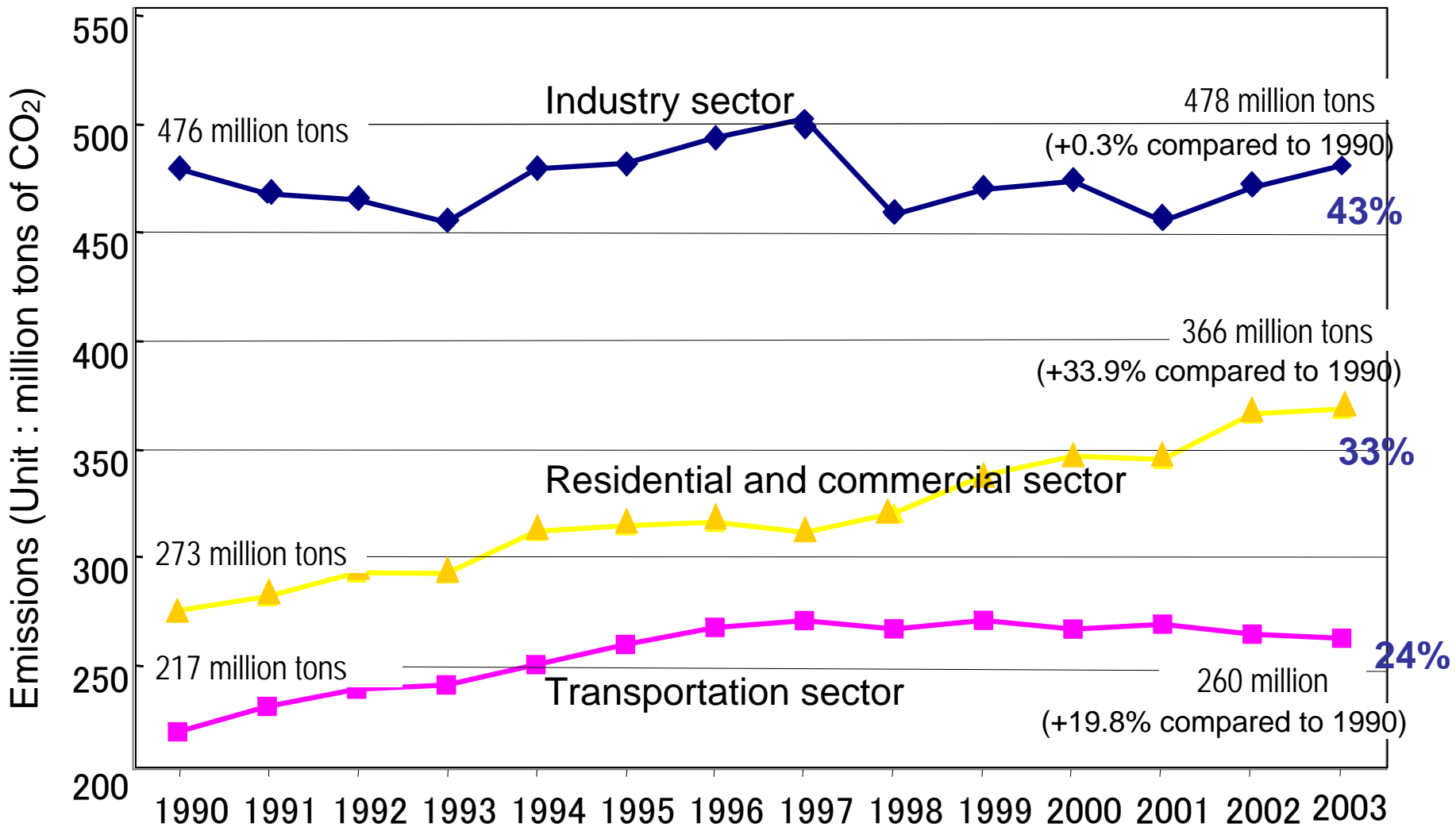


Japan's Experience

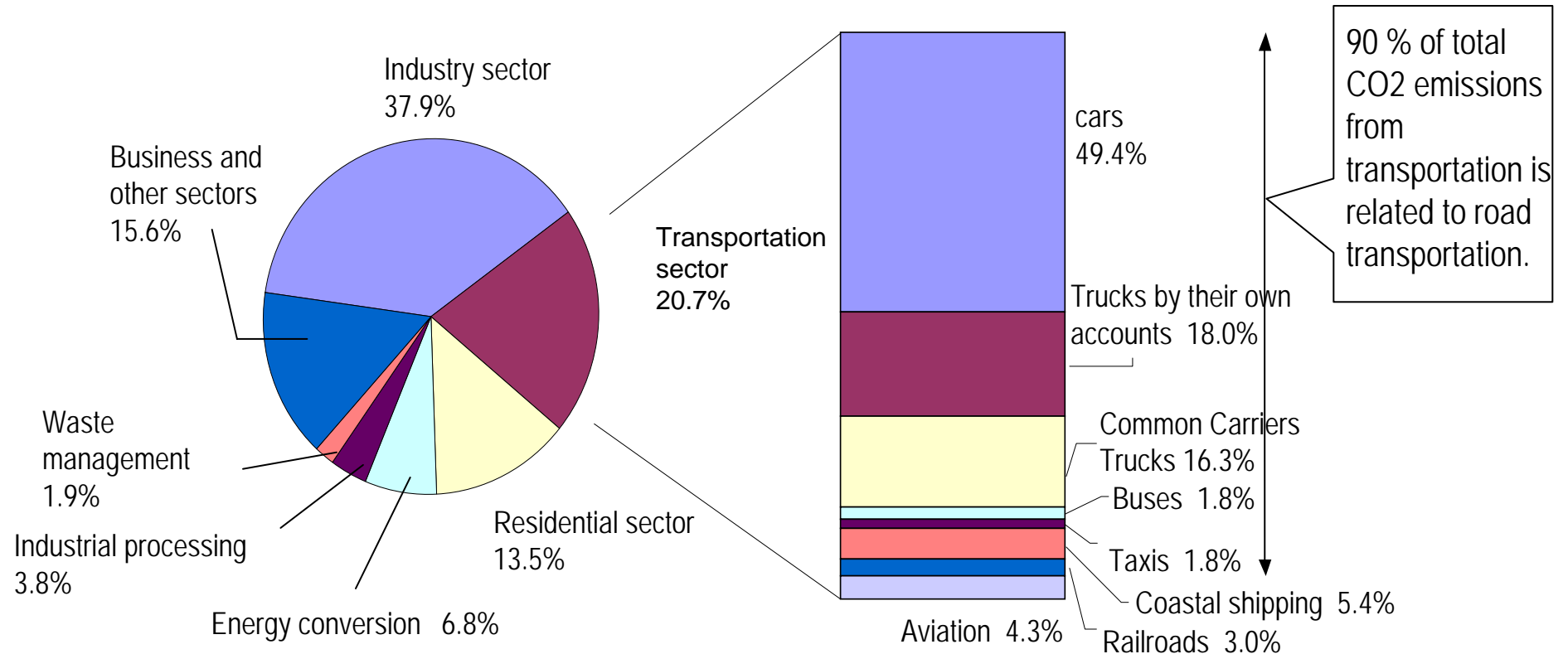
Shigenori Hiraoka

Japan International Transport Institute

Trends in CO₂ emissions from energy sources by end-user sectors



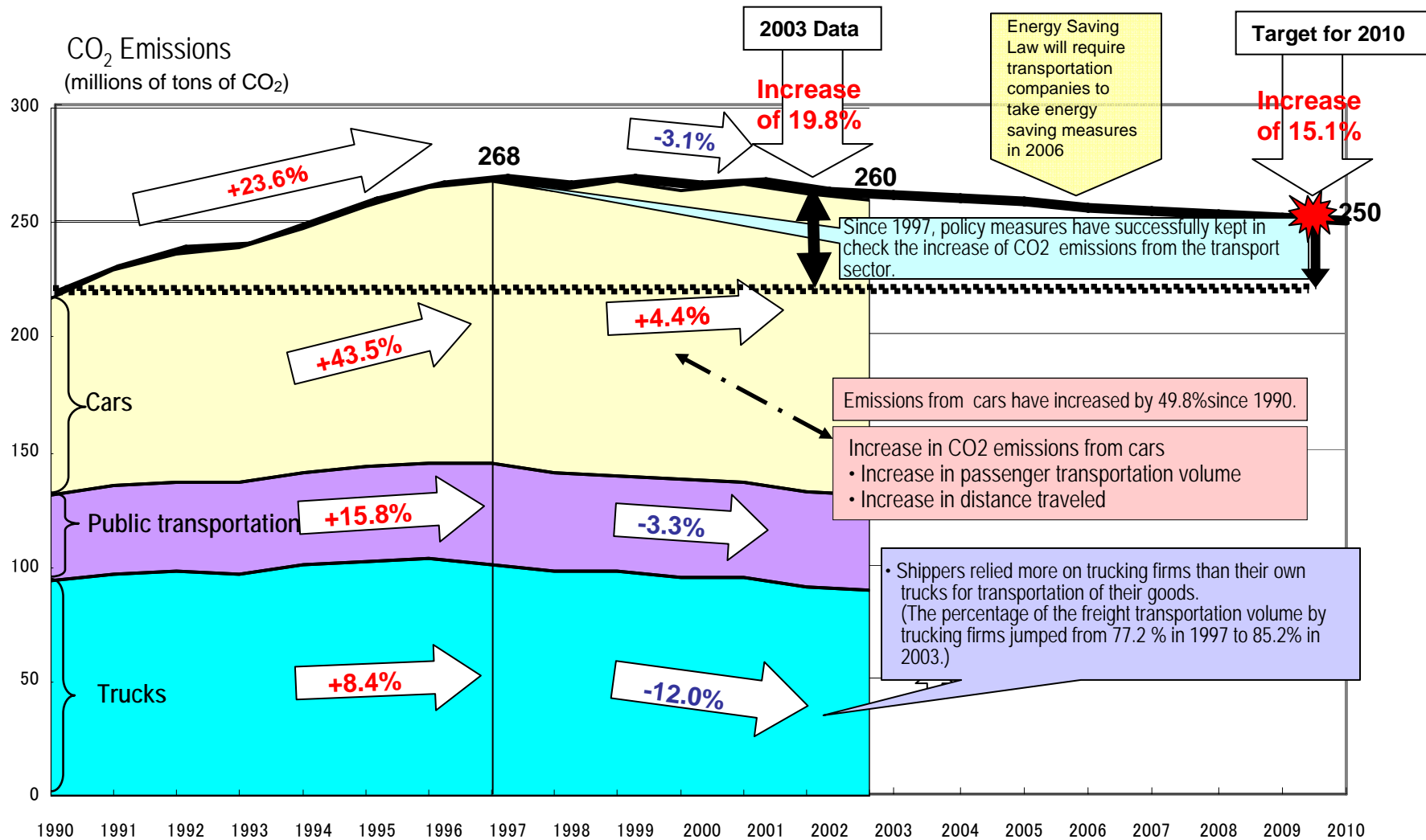
Japan's Carbon Dioxide Emissions in 2003



- 21% of CO2 emissions in Japan are due to the transportation sector.
- 90% of CO2 emissions of the transportation sector are caused by automobiles.
- 50% of CO2 emissions of the transportation sector are produced by private cars.

Actual and projected trends in CO₂ emissions from the transportation sector

While CO₂ emissions from trucks have been decreasing, those from private cars have been steadily on the rise .



Public transportation: buses, taxis, railroads, passenger ships, coastal shipping, and domestic aviation

Findings

- Commercial carriers have strong incentives to save energy use, especially when competition is stiff. (Energy saving = Cost saving = Greater profits)

* The government will further push them into more energy savings by enacting the Energy Conservation Law, as amended in 2006.

- The heart of the matter is how to curb CO₂ emissions from private cars.

Energy Conservation Law (Amended)

Points of the Amendments

Requiring Transportation companies (including those carrying their own goods) with capacity beyond a certain level to submit an energy saving plan, and an annual report of energy consumed for transportation.

Requiring shippers with shipment beyond a certain level to submit an energy saving plan (using less energy intensive mode of transportation etc.) and an annual report of energy consumed for shipment.

Firms make their best endeavor to promote use of mass transit by their employees.

Outline

Guidelines for Carriers

- Energy Saving Target
- Energy Saving Measures
 - Introducing low-emission vehicles
 - Adopting energy saving driving technique
 - Increasing load factors
 - Reducing empty fleet etc.

Large-scale Carriers

Guidelines for Shippers

- Energy Saving Target
- Energy Saving Measures
 - Using less energy intensive mode
 - Obtaining a common carrier license
 - Joint shipment etc.

Large-scale Shippers

Energy Saving Plan

Firms should promote use of mass transit by their employees

Report

- Aggregate energy consumption & Unit energy consumption
- Energy saving measures taken

* When a firm falls significantly behind in the progress in energy saving, the government may issue recommendations or orders or a penalty.

How can we reduce CO₂ emissions from private cars?

- There is no silver bullet. Effective policy mix is required.
- Automakers and drivers hold the key. What can they do?
- Four factors affect CO₂ emissions:
①Demand * ②Modal Share * ③Fuel Economy * ④Fuel

- ✓ Stop driving cars, take trains, buses or bikes instead (①②);
- ✓ Drive in a more fuel-efficient manner (③);
- ✓ Build and drive a more fuel efficient car (③④).

How to change patterns of behavior that have contributed to the increase in CO₂ emissions from cars.

● **Regulatory approach**

It may work when a small number of entities are subject to a reasonable one. If many parties are involved, a regulatory approach is hard to implement as it takes elaborate enforcement mechanism to apply. People don't like to be pushed around by a regulatory authority.

● **Appeal to the sense of responsibility**

If you drive your car in a responsible manner, you can improve fuel economy.

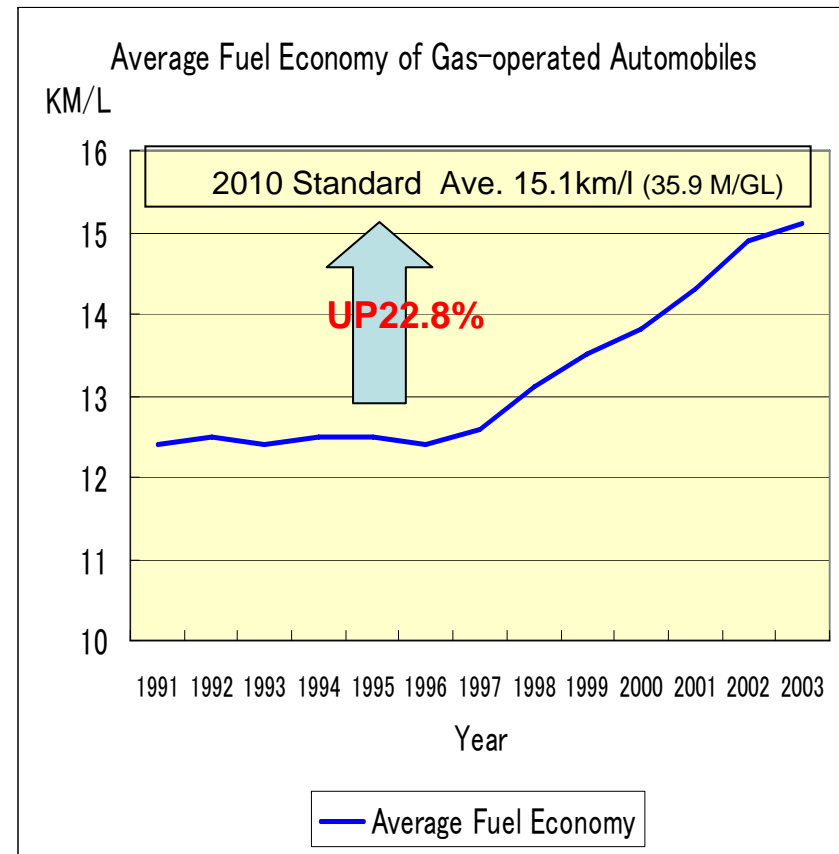
● **Incentives or disincentives**

Incentives can be a powerful tool to induce a large number of people to a certain direction if they are properly designed.

Regulatory approach to automakers

- Top-runner fuel economy standard (1998~)

Adopt the highest level of fuel economy that has been achieved. Everybody has to achieve it within a certain period of time.



* Japan Automobile Manufacturers Association

* The government is considering setting up a top-runner fuel economy standard for heavy-duty vehicles (about 12% up until 2015), and further strengthening the existing standard.

Appeal to the sense of responsibility of drivers: 10 Tips for Energy Savings

* From JAF HP

- No long idling of engines.
- No deflated tires.
- No clutters in your trunks.
- No pre-warming of your car.
- No jackrabbit start.
- No tailgating.
- No slamming on the brake. (Use engine brakes often.)
- No illegal parking on the road.
- No overcooling. (Set air conditioners 1 degree higher in summer.)
- No unplanned routes. (Plan your routes ahead before you start.)

How many of you put all of the tips into practice?

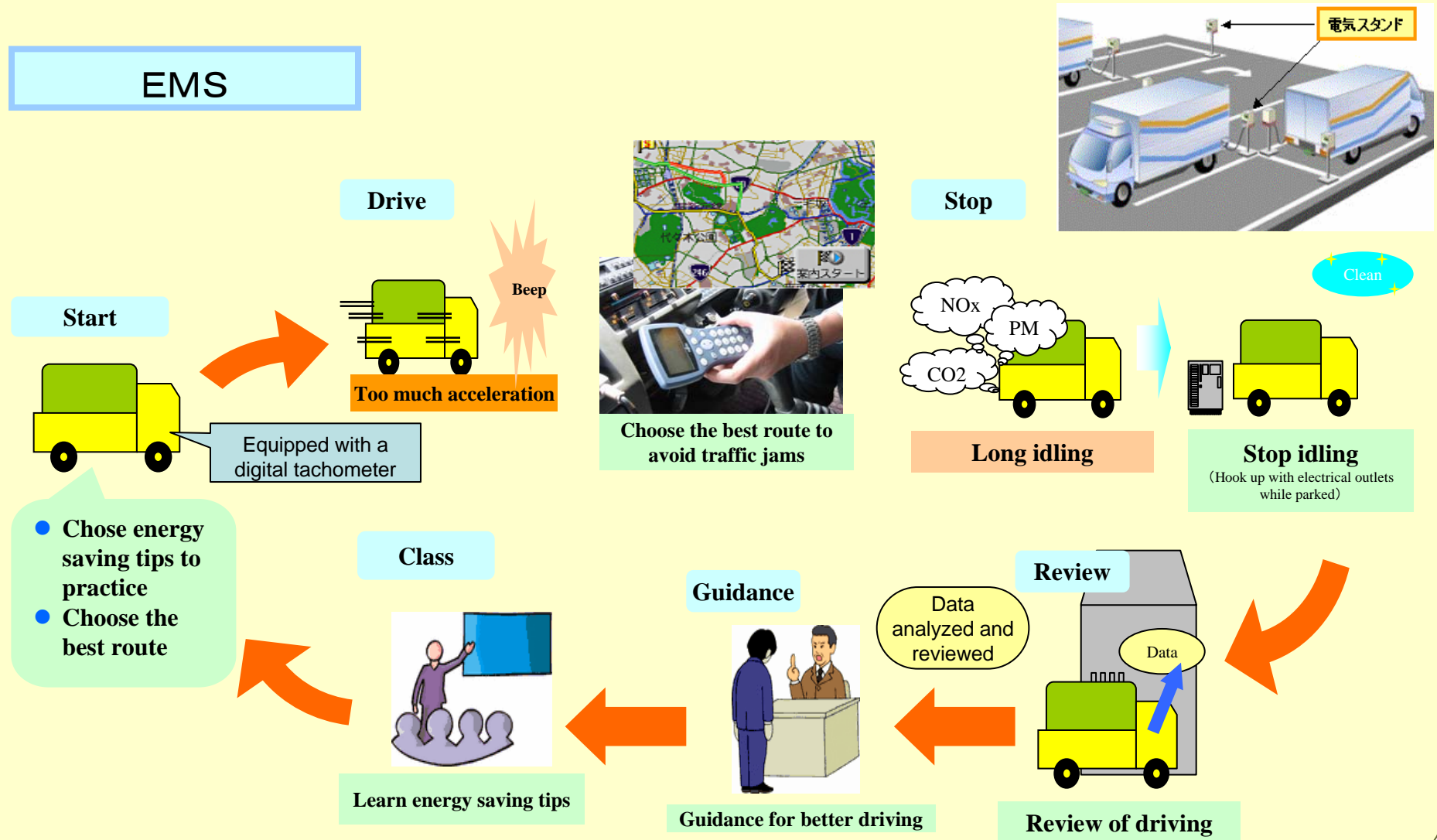
*According to a NEDO experiment, it can reduce fuel consumption by 20%. The Government of Japan is going to launch a subsidy program next year for trucking firms and bus operators to purchase digital tachometers to monitor fuel use.

EMS (Energy saving driving Management System)


How do drivers learn energy saving tips?

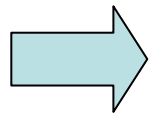
- Armed with digital tachometers and software, trucking companies educate their drivers to adopt energy saving tips in driving as a part of driver training.

EMS




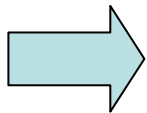
Incentives (or disincentives) to drivers

- High Level of Fuel Tax to begin with...  Reduced car use.



The share of tax in the retail price of gasoline is about 60% in Japan. (2003)

- “Green Automobile Tax” (2001 ~)  Shift to cleaner cars.
Tax less on purchase and ownership of more fuel efficient cars, and Tax more on purchase and ownership of less fuel efficient cars.

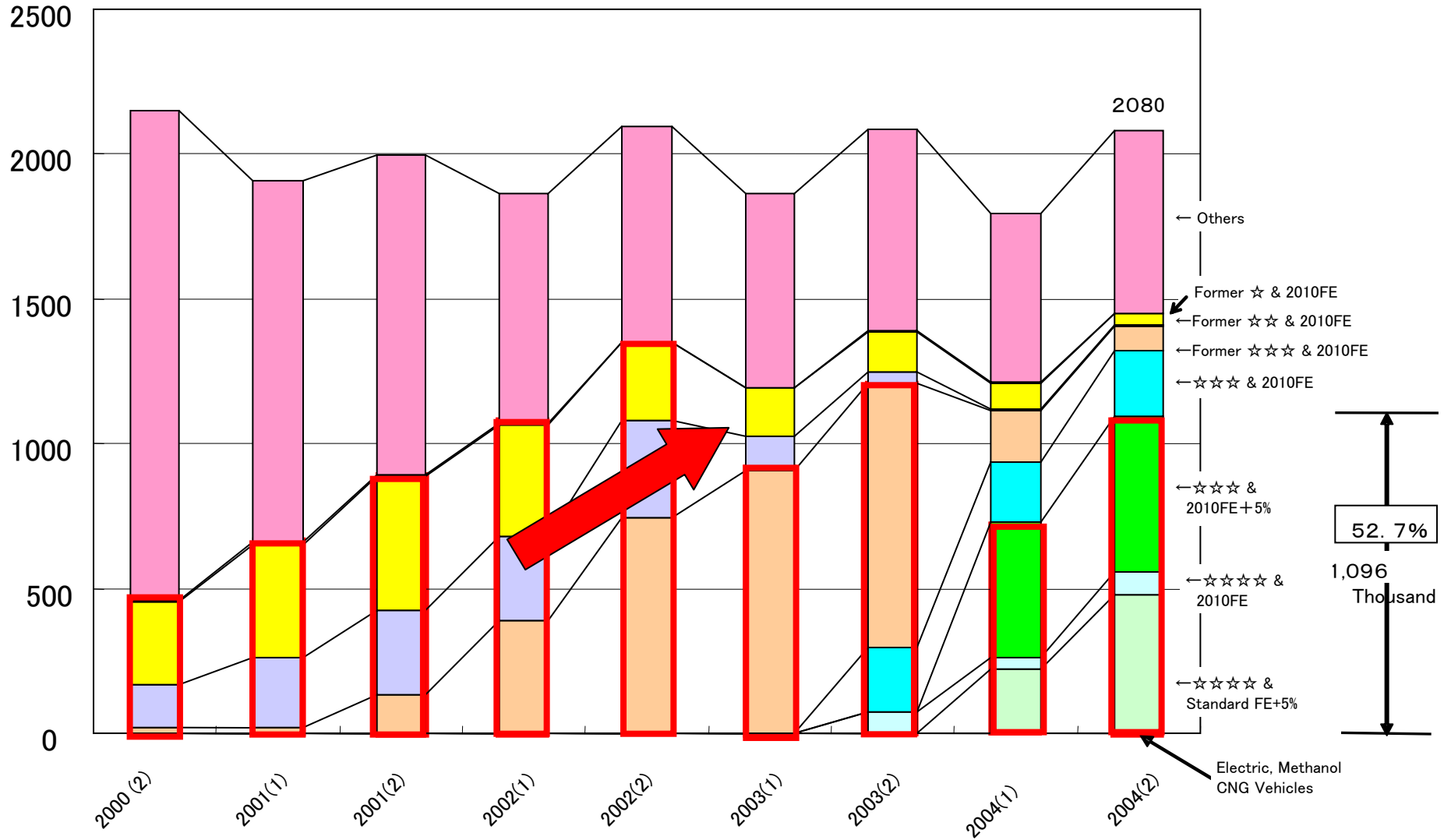


The share of fuel efficient cars has been rising in the total number of new vehicles registered.

(Thousand)

The Number of Registered Low Emission Vehicles

(※Excluding light weight vehicles)



- ✓ # of ☆ denotes the level of exhaust emissions. The more stars mean the lower emissions.
- ✓ 2010FE stands for 2010 Fuel Economy Standard

Vehicles under Green Automobile Tax

China's situation

● Automakers

- China set 2005/2008 fuel economy standard, a fairly strict weight-based standard like Japan's top-runner standard.

● Drivers

- There is a state-control to hold fuel prices low (No fuel tax imposed).
- There is an excise tax, and sales & ownership taxes on automobiles in addition to general value added taxes.

Suggestions

● Automakers

- The fuel economy standard should be further raised gradually.
- How about more incentives for automakers to produce or sell more fuel efficient cars in China?

Ex) Building and selling cars with a really good fuel efficiency counts for credits in CDM.

● Drivers

- Incentives (or disincentives) should be provided to car owners to switch to more energy efficient cars in China.

Introduction of a fuel tax combined with incentives to shift to driving energy-efficient cars can be effective. Revenues from a fuel tax may be used for providing such incentives, as well as launching cleaner, reliable, affordable, convenient mass transit system (guide-way buses, light rail trains, subways etc)