

**FUELING THE FUTURE:
Workshop on Automobile CO₂ Reduction and Fuel Economy Improvement
Policies**

WORKSHOP REPORT

Side-event at the Michelin Challenge Bibendum
13 October, 2004 – Shanghai International (Grand Prix) Circuit, China

Background

A number of Asian countries have faced a considerable and accelerating increase in the motor vehicle population over the past decades. Transportation energy use has become an important issue, particularly with recent high oil prices. Concerns are also growing about rising transport CO₂ emissions, directly related to fuel use.

With the recent adoption by China of a light-duty vehicle fuel economy regulatory policy, this may be an opportune time for other countries around Asia to consider their own possible actions in the area of encouraging greater vehicle fuel efficiency. However, situations vary considerably: most countries are much smaller than China, and few have their own car industry. Many countries import primarily second-hand vehicles. And many countries do not have detailed or accurate records regarding the numbers and, especially, types of vehicles being sold.

UNEP and the IEA organised this workshop to gather together representatives from Asian countries, along with experts and relevant stakeholders from the auto and energy industries, to discuss this topic and begin a dialogue on what are the options, benefits, costs and barriers associated with taking action to encourage greater vehicle efficiency, along with certain other vehicle- and fuel-related actions to reduce energy use and CO₂ emissions in transport in Asian countries. The meeting should be seen as a first step – it was mainly an opportunity to explore what has been happening in different countries, and what alternative policy approaches have been applied around the world and might be interesting for Asian countries to consider in their own unique contexts

The list of attendees is attached, along with the final agenda as followed during the day.

Discussion and Findings

As shown in the attached agenda, the meeting was organised with both a significant number of presentations and also plenty of time for discussion. Presentations were made on most major existing policy programmes for light-duty vehicle CO₂-reduction and/or fuel economy improvement, including:

- ◇ Chinese fuel economy regulatory system
- ◇ EU Voluntary agreement
- ◇ Japanese Top Runner Programme
- ◇ US CAFÉ programme
- ◇ California planned policy of CO₂ reduction requirements for LDVs.

There were also presentations comparing the different existing policy programmes, and comparing the different types of policies more generally.

Finally, there were presentations from various energy and automotive firms, outlining industry perspectives, concerns, and potential solutions.

Some key findings:

- The existing approaches for achieving CO₂ reduction through fuel economy improvement in new cars vary considerably, with both regulatory approaches (China, Japan, US, CA) and voluntary approaches (EU). Some systems include financial incentives as well (Japanese tax credit for hybrids, US gas guzzler tax, various EU member country differential taxation schemes based on fuel economy, such as in the UK and Denmark).
- Regulatory systems differ significantly, as follows:
 - ◇ **Japan**'s approach requires manufacturers to meet fuel consumption targets in each of various weight classes, based on an average of the cars they sell in that class. Targets are based on the "top runner" or the top performing model in each weight class.
 - ◇ **China**'s system is also based on weight classes, but each individual model must eventually meet the target for each class (no averaging is allowed).
 - ◇ Under the **EU** voluntary agreement, each of the three major manufacturer trade organisations (ACEA, the European car manufacturers, JAMA, the Japanese manufacturers, and KAMA the Korean manufacturers) have agreed that, as an average across all companies in the associations, they will meet certain targets across all passenger vehicles sold (including cars, small passenger vans and SUVs).
 - ◇ The **US** Corporate Average Fuel Economy Standards (CAFÉ) system requires manufacturers to meet a separate standard for their cars and for light trucks, based on the sales-weighted average for all vehicles of each type that they sell.
 - ◇ The **California** plan will require manufacturers to meet an overall CO₂ target for all cars and light trucks sold, beginning in 2009.
- Of the Asian countries represented at the meeting (apart from China), although all have developed and implemented a variety of vehicle-related policies, including some that tax vehicles differentially depending on engine size, none appears to have already adopted any measures to require or encourage CO₂ reduction or fuel efficiency improvement in new cars or other light-duty vehicles.
- Singapore was the only country to mention active consideration of such policies. It is considering options for introducing differential fees based on CO₂ or other vehicle attributes, but is seeking information on how to structure such measures and what their likely impact will be on relative sales of different types of vehicles.
- Other countries generally expressed interest in developing policies in this area, though it is clearly a departure into a new area of policy making. As related to cars, most recent policy-making appears to be focused on air pollutant emissions reductions (for obvious and good reasons). However, given concerns about CO₂ and perhaps as or more importantly for some countries, concerns about oil supply cost and security, there was clear interest in further pursuing the possibility of developing measures to reduce vehicle fuel use and CO₂ emissions.

- From the discussion at the meeting, it was not clear whether any particular approach makes more or less sense for different countries, and it seems likely that a close look at the situation for each country will be needed to better understand what approach would work best for it.

Possible next steps

A number of possible follow-up activities were identified:

- Dissemination of available reports and other relevant information to the participating countries (such as studies on the impacts of vehicle taxation schemes)
- Creation of a “contact group” for continued information sharing on this topic. It was mentioned that the Clean Air Initiative for Asia, co-sponsored by the World Bank and Asian Development Bank might be a good venue for this – possibly as a subgroup.
- Additional workshops in the future, such as one on fuel economy/CO₂ labeling and incentive systems. Such a workshop could be very “nuts and bolts” oriented, intended to help interested countries actually design appropriate policy frameworks
- Conducting a study on fuel economy/CO₂ reduction policies, costs and benefits, with a developing-country orientation. The IEA and UNEP have already outlined a possible approach to such a study, and appears to be well positioned to lead it, given the topic and the need for a neutral, international perspective.

The IEA and UNEP will work with the group who attended this workshop and with other relevant organisations to see how best to continue the dialogue begun with these countries and to develop an on-going set of activities in this area. As indicated in the last bullet above, IEA and UNEP are already developing an analysis plan for a study. UNEP has plans for a half-day workshop on this topic as part of a bigger transport conference in Abu Dhabi in January.

The following pages contain the list of attendees and the final workshop outline and agenda.

List of Attendees (alphabetical by organization)

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Workshop on Automobile CO2 Reduction and Fuel Economy
Improvement Policies**

Side-event at the Michelin Challenge Bibendum
13 October, 2004 – Shanghai International (Grand Prix) Circuit, China

A number of Asian countries have faced a considerable and accelerating increase in the motor vehicle population over the past decades. Yet, compared to developed countries vehicle ownership rates are still small: vehicle ownership in China is about 22 vehicles per 1000 inhabitants against some 760 in the US. Access to transport in most developing countries is insufficient: In urban areas, rapid population growth has led to expansion in vehicle fleets with little or no infrastructure development planning. In addition, vehicle fleets in use are aging and often not regularly maintained. This leads to lower fuel efficiency putting pressure on energy security, local air quality and global climate.

Projections for transport service foresee high growth rates. A number of transportation analysts, for example, project that China's automobile market will be the largest in the world by 2020 – larger than the US market. In consequence, oil consumption will increase dramatically and could have serious impacts on energy security, local air quality and global climate. Increasing oil imports will also place increasing pressure on the national budgets.

To reduce cost to the global economy posed by oil use, both directly through oil imports and indirectly through cost to society from increased emissions of CO₂ and local and regional air pollution with their related health impacts, it is crucial to rethink transport patterns, diversify the fuel basis of transportation and make vehicles as efficient as possible.

One means to ensure much greater efficiency – and over time a trend toward reduction rather than increase in average fuel intensity, is to adopt policies that promote improved fuel economy of future light-duty vehicles.

The historical trend for fuel economy saw major improvements globally in the early days of high oil (and fuel) prices, particularly during the 1980s, but improvements have slowed significantly since. In some countries the situation has worsened as concern for fuel economy has been overtaken in importance by preferences for other vehicle performance factors, such as speed and vehicle size. Still, recent fuel economy improvement policies have been introduced in the EU, US, Japan, and now China. In general, these policies have included some or all of four possible components:

- Establishment of fuel economy targets or goals
- Voluntary agreements with the automotive industry or other mechanisms to improve fuel economy of new vehicles and reach targets
- Provision of fuel consumption information to the consumer, such as vehicle labeling, to enable an informed choice, and

- Fiscal measures to encourage the consumer to act on that choice, such as lower vehicle registration fees for more fuel-efficient vehicles.

This side-event will provide an opportunity for government representatives from Asian countries to discuss recent policy initiatives and share experience regarding implementation of fuel economy improvement policies and measures. Recent analyses and experiences of countries from around the world that have adopted fuel economy policies will be shared.

FUELING THE FUTURE: Agenda

Event Moderator: Michael Walsh

- 10:00-10:15** **Registration, Coffee**
- 10:15-11:15** **Welcome and Opening Session**
- Welcome (UNEP, IEA)
Keynote (Edouard Michelin)
Overview of Fuel Economy Issues and Activities around the World (Michael Walsh)
China's Fuel Economy Program (Wu Wei, CATARC)
- 11:15-12:30** **Fuel Economy - Potential, Costs, Technologies, Policies**
- Lee Schipper (WRI), Feng An (ETT), David Chen (GM), Georgios Daniilidis (Bosch), Kelly Gallagher (ETIP)
- Followed by discussion
- 12:30-13:30** **Lunch**
- 13:30-15:15** **Wider Experiences and Perspectives**
- Yukihiro Okamoto (Japan ESPO), Wolfgang Steiger (VW), Karl-Heinz Zierock (EU/DG-Env), Mark Gainsborough (Shell), Roland Hwang (NRDC)
- Followed by discussion
- 15:15-15:30** **Coffee**
- 15:30-17:15** **Structured Discussion (moderated by Lew Fulton, IEA)**
- Centered around the following questions:
What are key concerns/drivers in different countries?
Concerns about policy costs and other impacts
What are your preferred policies and mechanisms?
How important is policy harmonization across countries?
- 17:15-17:30** **Wrap up, conclusions (Martina Otto, UNEP)**