

## *Reducing CO<sub>2</sub> emissions in the Road Transport sector*

*Global warming is increasingly becoming a pressing issue that needs to be addressed by governments, communities, companies and individuals as we share the earth that we live on today. JAMA, a key player in the auto industry in Japan, actively strives to reduce CO<sub>2</sub> emissions from vehicles. News from JAMA traces the measures taken in the road transport sector.*

Data from the International Energy Agency in 2004 revealed that out of the sectors of the global economy emitting CO<sub>2</sub>, 20% were generated by the transport sector.

Taking a closer look, it is also clear that CO<sub>2</sub> emissions are on the rise for the road transport sector. Economic growth typically leads to motorization in developing countries, which translates into an increase in the number of vehicles and travel distances. These activities, in turn, mean more CO<sub>2</sub> emissions. Hence it is the responsibility of the road transport sector to address environmental concerns by promoting sustainable measures to counter global warming.

Having pledged to reduce its CO<sub>2</sub> emissions to 250 million tons by 2010 under the Kyoto Protocol, Japan has adopted an integrated approach for the road transport sector to achieve its target.

### **1) Improving fuel efficiency**

In Japan, about 90% of the CO<sub>2</sub> emissions generated by the transport sector are from road transport. Hence a direct approach

would be looking into the fuel efficiency of vehicles.

Improving fuel efficiency is one of the significant ways to reduce CO<sub>2</sub> emissions and counter global warming. It is compulsory in Japan for fuel efficiency of vehicles to be certified. With regards to new passenger cars, JAMA members have been steadily increasing their average fuel efficiency in compliance with relevant fuel efficiency standards.

To improve fuel efficiency, advances in such technology are also necessary. JAMA members are relentless in their efforts to invest in research and development of engineering technologies to improve fuel efficiency of their vehicles.

For instance, due to a change in customers' taste and preference as well as for legislation for safety measures in the 1990s, vehicles tend to be heavier. However, fuel efficiency of vehicles generally worsens with the increase in weight. JAMA members strove to produce vehicles that are lighter. Coupled with the market shift towards more compact, fuel-efficient vehicles, they managed to apply a

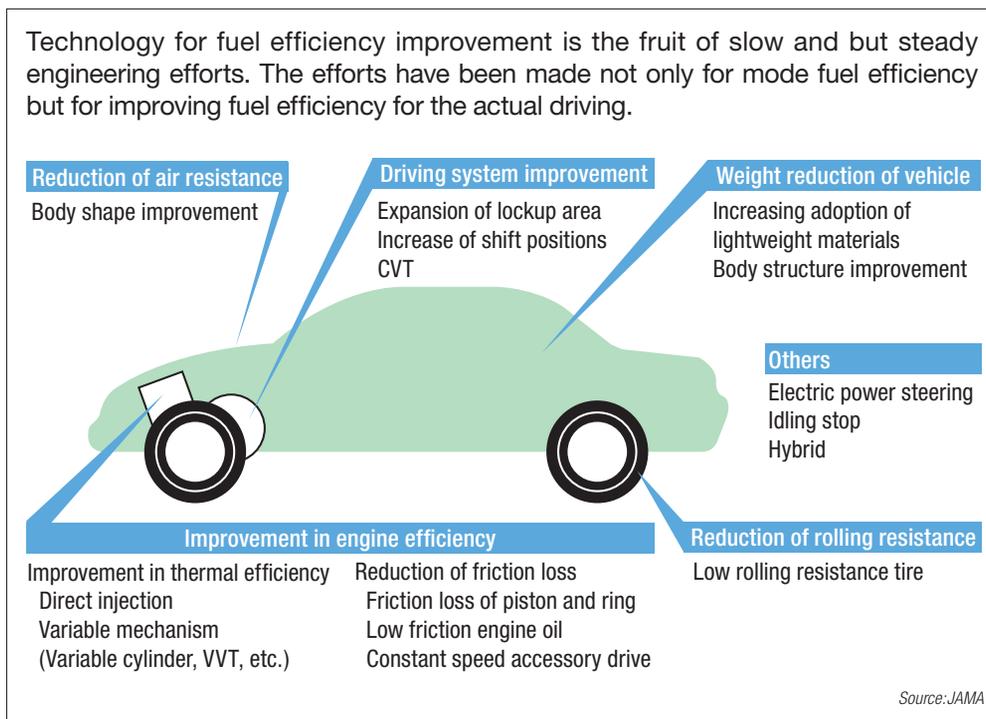
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brake on the trend of heavy-weight vehicles with improved technology. Continuous efforts with raw materials and design are necessary to realise further light-weight vehicles.

electric vehicles, vehicles running on compressed natural gas, LPG etc aim to reduce 300 million tons of CO<sub>2</sub> emissions by having a market penetration of 2.3 million

units of such vehicles. As at the end of 2006, a total of 420,000 units of clean energy vehicles were sold, with the bulk being comprised of hybrid cars. Only a small number of such vehicles are on the road currently and thus they may be limited in significant contribution to the reduction of CO<sub>2</sub> as yet, but the potential is great. With the progress of their popularization in future, it is expected to become a more

**Major Technologies for Improving Fuel Efficiency**



As complementary measures, a green taxation plan by the Japanese Government encourages the use of vehicles that are more fuel efficient. This measure imposes higher taxes on vehicles which have passed a certain number of years, while applying lower rates for low-emission ones with good fuel efficiency and clean exhaust gas. It is also expected that 2009 will see further tax incentives for fuel-efficient vehicles.

**2) Diversification of automotive fuels/ next-generation vehicles**

Under the Kyoto Protocol, clean energy vehicles which include hybrid vehicles,

effective measure. Needless to say, for this to happen, technological breakthroughs are essential, as are facilitating an environment friendly for popularization such as provision of incentives, and provision of suitable infrastructure.

In addition, JAMA has been actively promoting alternative sources of energy such as bio-fuels. In order for bio-fuels to be popularized, firstly the standards of specification need to be compatible with in-use vehicles. Japan's Ministry of Economy, Trade and Industry has implemented a joint research with JARI(Japan Automobile Research Institute) to find out if current specifications in Japan

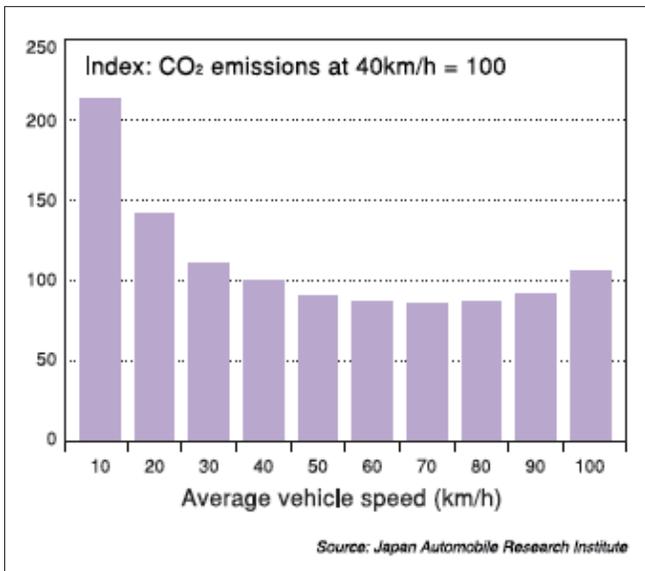
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have met such standards. The results of the findings are shared with government agencies and industry associations in ASEAN countries through the organization of bio-fuel seminars.

**3) Improvement of traffic flow and infrastructure**

Increase in vehicle speed through improved traffic flow contributes greatly to increased fuel efficiency and thus to CO<sub>2</sub> reduction.

**Impact of Vehicle Speed on CO<sub>2</sub> Emissions**



To improve the traffic flow, many measures are possible. One of these is the use of various Intelligent Transport System (ITS) tools which provide optimum route guidance. For instance, with the ETC (electronic toll collection) system users need not stop their vehicles to pay toll and instead can enjoy a smooth and seamless journey passing through the toll gates, helping to prevent possible congestion.

Similarly advanced traffic signal control systems let road users know in advance the traffic conditions ahead of them, enabling them

to make choices on routes to avoid further congestion ahead.

JAMA also promotes the improvement of congestion points and usage of highways. Parking illegally on the streets adds to congestion which again leads to an increase of CO<sub>2</sub> emissions. Thus JAMA calls for the strict enforcement of parking bans.

**4) Eco-driving**

While efforts spearheaded by Government agencies and industry organizations help to lead and show the way, on a micro-level, individuals too play a significant role in their driving habits in everyday life.

Fuel-conserving eco-driving has been shown to increase on-road vehicle fuel efficiency by about 10%.

In the cargo business, many transportation companies install digital tachographs in vehicles to assess the drivers' level of eco-driving. This not only translates into cost-savings for the companies, but raises the awareness of eco-driving as well.

While the usage of eco-driving techniques are more commonplace with commercial vehicles, it is important to also popularize such techniques with drivers of passenger cars. Fuel efficiency meters are gradually becoming popular with individuals driving passenger cars who install such equipment to calculate their average or point-in-time fuel efficiency. According to JAMA's statistics, about half of the passenger cars sold in Japan currently come equipped with various tools for measuring fuel efficiency. By cooperating with government agencies or associations in organizing symposiums, co-sponsoring contests and publishing pamphlets on eco-driving, JAMA

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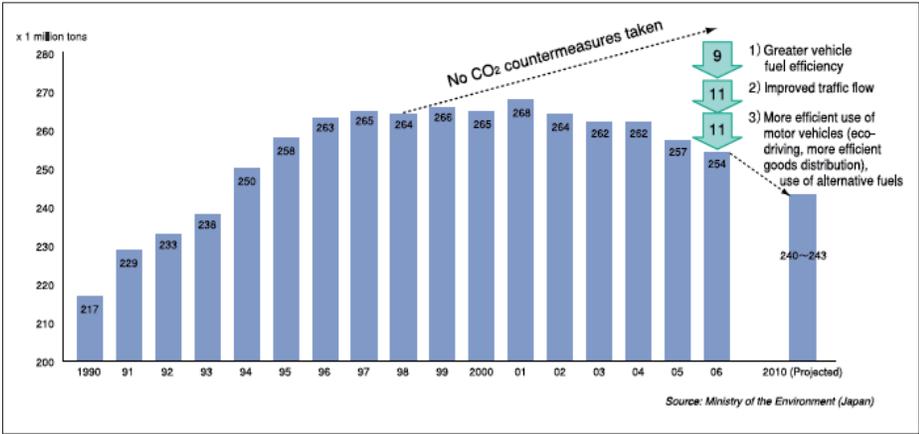
steps up efforts in its promotion to the masses. (For tips on eco-driving, refer to Vol 17)

As a result of the various cooperative measures and efforts, CO<sub>2</sub> emissions in Japan's transport sector have seen a downward trend since 2001.

Continuous efforts by automobile

manufacturers, government, fuel suppliers and vehicle users are necessary to contribute to this positive trend. In advocating an integrated approach of measures in the above-mentioned four areas, JAMA aims to fulfill its role effectively.

CO<sub>2</sub> emissions in Japan's Transport Sector



## ***Taxi Menace in Southeast Asian Countries***

My job as a researcher has enabled me to visit many Southeast Asian countries. As a foreigner there, it is almost inevitable that I employ a taxi service for transportation at least two to three occasions per trip, especially in places where other forms of transport may be inconvenient for use or unavailable. During these trips, dealing with taxis drivers can be quite problematic at times.

Some taxis in popular touristic cities such as Bangkok and Kuala Lumpur often do not operate by meter, and drivers demand a fare usually higher than it should be. For instance, a trip around 6 km is about 65 Baht by taxi meter, but some taxi drivers would demand a 100 Baht at least.

A recent experience I had was in Petaling Jaya, a satellite city in Kuala Lumpur. I wanted to go to a shopping mall of 10 minutes ride from my hotel and was informed by locals that the average fare to the shopping mall is around 15 Ringgit. However, when a taxi came by the driver quoted me 30 Ringgit. The bellboy then suggested me to try the taxis along the road outside the hotel. But, tough luck I guess, not many taxis passed by the road. Even though I came by a few empty taxis, many did not even stop when I hailed for them. Finally, after twenty minutes, one stopped for me. But the driver asked for 40 ringgit even when his taxi top-hat clearly indicated “Ber Meter” (i.e. by meter). I gave him up.

It was only after thirty minutes that I was able to hop onto a taxi, whose driver was willing to charge by meter, but insisted that he need to clarify my destination first as he will not go to places near congested traffic. As I was not able to pronounce the Malay name of the shopping

mall, I had to take out the piece of paper that I have had the details written on to show him. However, drivers behind the halted taxi began to sound their horn impatiently. “Could we move on first?” I asked while still struggling to find the piece of paper from my pocket (On hindsight, I could have been a more well-organized person). “NO! You tell me the place first before I move!” demanded the stubborn driver.

Taxi drivers who discriminate customers based on their choice of destination are common too in my home country in Singapore. I remember when I was waiting for a taxi at a hotel, one drove into the hotel pick-up area at the same time two hotel guests stepped out with luggage to queue behind me. Upon seeing the two guests, the driver immediately took out a sign that said “Pasir Ris”, to indicate that he is going towards this location, which happened to be close to the airport. I told the driver my location, but the driver rejected flatly, saying that he is finishing his operation and heading back home at Pasir Ris, and signaled the guests behind me to hop onto his taxi if they are going to the airport. At this point, the bellboy stopped the driver, and said: “No choosing!” The driver then changed his tone to a nicer one and told me that now he is able to find an alternative road that will pass by my location. It is strange indeed that he immediately could do so after the bellboy’s interference!

In Hanoi and Jakarta, the taxi drivers I came across so far operate by meter and do not discriminate customers, but there is a problem with “big money”. The Vietnamese Dong and the Indonesian Rupiah have large currency units, and hence, paying 40,000

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Rupiah or 60,000 Dong (around US\$3 for both currencies) for a short trip is considered normal. Nonetheless, some taxi drivers often take advantage of foreigners like me who are not familiar with the valuation and do not return the exact change accordingly. Though I have been advised to take away two zeros for easier currency conversion, still I got completely confused and ended up receiving my change lesser than it should be at times (On hindsight, I should have studied harder for Maths). The situation is even more challenging in Hanoi, where US currency is also accepted. I lost my total sense of calculation when I was returned thousands of Dong for the change from US\$5! But, I guess I should count my blessings that a driver bothers to return the change, because some do not even bother, giving excuses that they lack enough small change.

Stricter regulations against unethical taxi drivers in Southeast Asia may perhaps elevate taxi menaces. I understand taxis in Manila used to be problematic but the situation has improved greatly after the authorities enforced stricter rules. A complaint hot-line is stated on the taxi for customers to call whenever they encounter unreasonable drivers. Still, I heard from a fellow Singaporean, whom I met at the Manila airport, that a taxi driver who drove

him there demanded a higher fare rather than charged as per taxi-meter. The taxi driver claimed that the fare he demanded is a normal charge for any transport to and from between the airport and town. The Singaporean then showed him a receipt he received when he hired a taxi to get to town from the airport, which is just half of what the driver is demanding. "Although the amount overcharged is so trivial that I could save the trouble, time and energy to confront the driver, I would be behaving more unethically by allowing him to succeed in this dishonest act," reasoned the Singaporean.

It is understandable and normal for anyone to desire wealth, but "a gentleman who desires wealth should attain it through the right way" (君子愛財、取之有道), said Confucius in Analects.

With the economy gloom plaguing the world, including ASEAN region, some taxi drivers may be more tempted to earn their money in faster but dishonest ways. When faced with such circumstances, travellers may help to the fight the condition and promote a healthier business environment by not accepting illegal negotiation from drivers. As the saying goes, "When the buying stops, the selling stops".

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