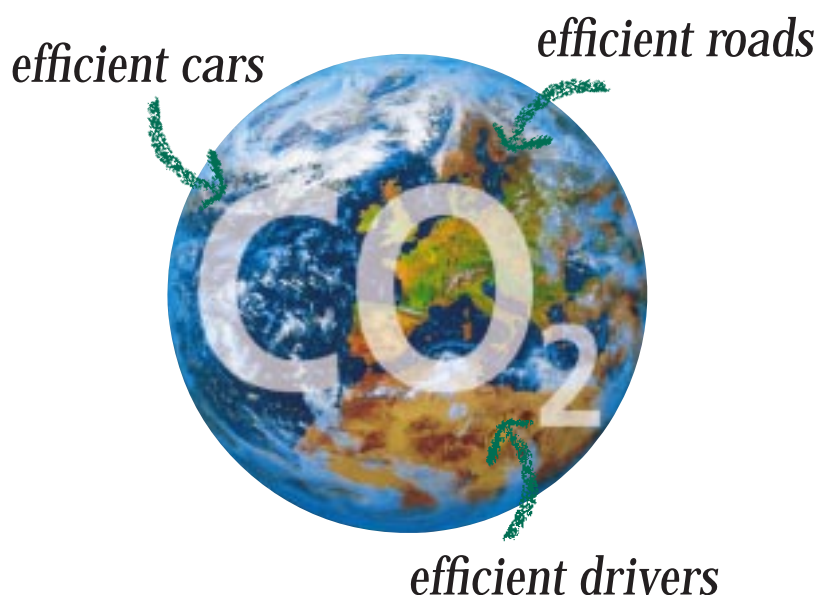


Tackling Climate Change by Working Together



JAMA Welcomes Council of Ministers Endorsement of CO₂ Voluntary Agreement

EU environment ministers on 12 October endorsed a JAMA commitment to reduce average CO₂ emissions of Japanese cars sold in the EU to 140g/km by 2009, a reduction of approximately 31 per cent from 1995 levels of 193-202g/km. The ministers' decision followed the approval of the JAMA Board of Directors on 16 September to commit itself to this stringent target with the support of all its members who sell cars in the EU market.

“The key issue is that technologies may be developed by industry, but to make a real difference in CO₂ emissions, drivers will have to actually buy them, drive them on efficient roads, and maintain and use them efficiently.”

Tackling climate change is a global concern and JAMA joins the European and Korean automakers in making commitments to increase the fuel efficiency and hence lower the CO₂ emissions of their cars in Europe, as part of the EU's effort to meet greenhouse gas reductions agreed by developed nations at the Kyoto Climate Conference in 1997.

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JAMA Update
Tackling Climate
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Together

Topic
Technical Solutions
of the Future

Profile
Efficient Drivers

Essay
by Peter Nunn
1999 Tokyo Motor Show



**A Monthly Review
of the Japanese Motor
Vehicle Industry**

Technical Solutions of the Future

A marketing challenge

The Japanese auto industry is committing considerable resources to research and development into fuel-efficient, low CO₂ emitting vehicles. They have already developed and marketed breakthrough technologies like direct injection gasoline engines (highly fuel efficient petrol engines essentially working like diesel engines with fuel injected directly into the combustion chamber) and hybrid vehicles.

“The central challenge remains to successfully market these fuel-efficient vehicles to potential buyers.”

The central challenge remains to successfully market these fuel-efficient vehicles to potential buyers by increasing consumer awareness of both their environmental benefits and more immediately their lower fuel costs. As innovative advanced technologies do not

come cheap and they need to be sold in volume to spread their development costs.

The Tokyo Motor Show a Showcase for Eco-friendly Technologies

The Tokyo Motor Show at the end of October was remarkable by the emphasis made in many stands on environmental awareness and eco-friendly technologies. Cars and technologies promoted included: electric minis and sports cars, hybrid cars (operating on a combination of electric and internal combustion engines), low emission engines, efficient transmissions like CVT (Continuously Variable Transmission), lightweight technologies, gasoline direct injection engines, alternative fuels like CNG and LPG, and fuel cell cars.

Table : Comparison chart of technologies - Environmental effects caused by several types of clean-energy vehicles

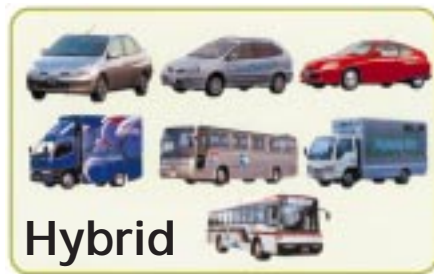
	Gas emission			Durability Running Distance	Fuel Supply Capacity	Vehicle Price
	Urban Environment	Global Environment	Fuel efficiency CO ₂			
	NOx	HC/CO				
Petrol Vehicle	=	=	=	=	=	=
Diesel Vehicle	↓↓ ↓	=	↑	↑	=	=
LPG Vehicle	=	=	=	↓ =	↓	↓ =
Natural Gas (CNG) Vehicle	=	=	↑	↓↓	↓↓	↓
Methanol Vehicle	Other-type	=	=	↓	↓↓	↓
	Diesel-type	↓	=	=	↓	↓
Hybrid Vehicle	Petrole Electricity	↑	↑	↑	=	↓
	Diesel Electricity	↓	=	↑	=	↓
	Diesel Stored Voltage	↓	=	↑	↑	=
Electric Vehicle	↑↑	↑↑	↑↑	↓↓	↓↓	↓↓
Fuel Battery Vehicle	Hydrogen	↑↑	↑↑	↑↑	↓	↓↓
	Fuel-up-grade	↑↑	↑↑	↑	↓	↓↓
Hydrogen Vehicle	=	↑↑	↑↑	↓↓	↓↓	↓↓
Solar Energy Vehicle	↑↑	↑↑	↑↑	↓↓	=	↓↓

The above types of vehicles are compared to the gasoline car, which is represented by the sign = and equals 100 percent. 4 signs are used to compare: ↓↓↓ very inferior; ↓ inferior; = similar; ↑ superior; and ↑↑ very superior.



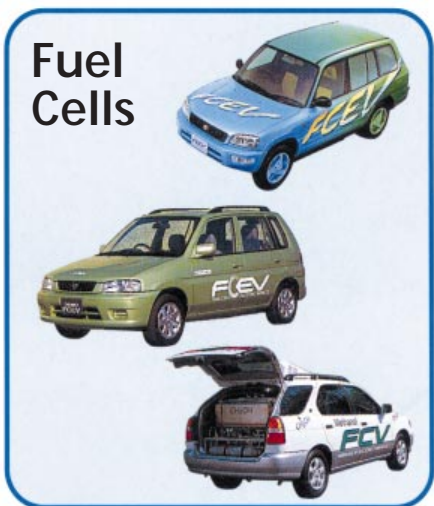


Electric



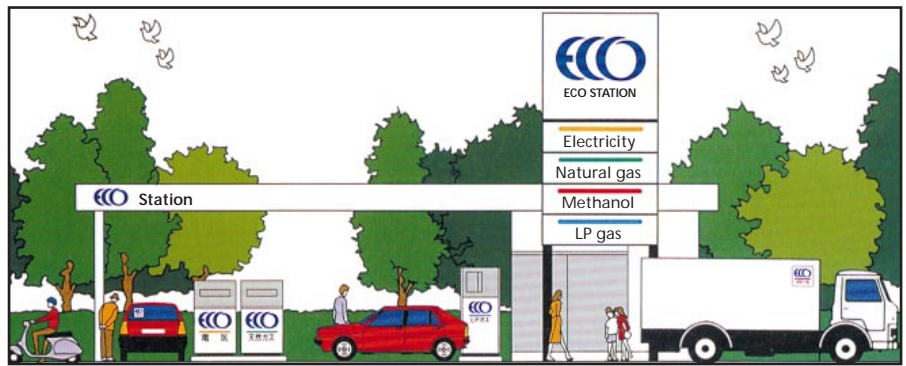
Hybrid

“Industry is making considerable efforts to develop a wide range of technical solutions.”



Fuel Cells

These vehicles are still emerging, but they amply illustrate industry efforts to develop a wide range of technical solutions and their determination to market them to consumers. When they do become more common, familiar sights and words like “petrol station” will lose their meaning, just as many things will change as we strive towards an environmentally sustainable future. ■



“ECO” Stations - Source: Association for the promotion of ECO Stations

► **Jama Update continued**

THE CO ₂ VOLUNTARY AGREEMENT	
No later than 2000	Some JAMA members will introduce cars onto the EU market emitting less than 120g CO ₂ /km
2003	Interim target range of 165-175g CO ₂ /km
2009	Target of 140g CO ₂ /km to be achieved

Consumer Acceptance and the Fuelling Infrastructure

The voluntary agreement framework was negotiated with the European Commission and there will be an annual monitoring process with both sides examining progress towards the 2009 target. The commitment is very ambitious and depends not only on the development of advanced technologies by the auto industry, but also on the vehicle fuelling infrastructure and the availability of quality fuels for drivers.

by a study by the Japan Automobile Research Institute which found that if the average urban vehicle speed was increased from 10km/h (present average speed in a large congested city), to 20km/h, fuel efficiency would increase by 35-40 per cent. This points to the important role of authorities to tackle road congestion and to encourage the development of “intelligent cars” and “intelligent roads” by exploiting telecommunication technologies.

“The voluntary agreement is a major commitment by the Japanese carmakers to improving the environmental sustainability of car transport in Europe.”

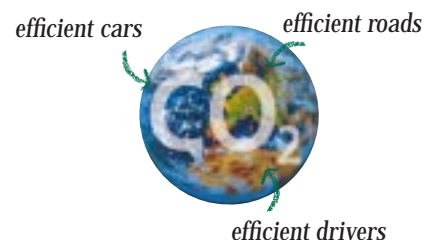
A Transparent Framework for Action

The voluntary commitment sets a very tough and ambitious target between industry and the European authorities. It has been put into place relatively swiftly when compared to formal legislation. And with the annual monitoring process, it is a flexible, transparent framework for authorities and industry to work in. Its success will rely on mutual trust and JAMA welcomes this opportunity to work in partnership with the European authorities to achieve environmentally sustainable road transport and the greater goal of tackling climate change. ■

Advanced engines and their success on the market will depend on the availability of quality fuels, as consumers need to be confident that they can refuel easily - whether the “fuel” in question is low sulphur petrol, compressed natural gas (CNG), liquid petroleum gas (LPG), electricity, methanol, or even hydrogen for fuel cells.

Efficient Roads Are Needed

Such factors highlight the key issue that technologies may be developed by industry, but to make a real difference drivers will have to actually buy them, drive them on efficient roads, and maintain and use them efficiently. This is graphically illustrated



Making a difference by working together

Efficient Drivers

Drivers can act immediately to help the environment by driving more efficiently

Technical innovations and advanced cars only hold part of the answer to reducing CO₂ from passenger cars. Drivers also need to know how good maintenance of their cars and sensible driving behaviour can have an immediate effect on their fuel costs and the CO₂ emissions of their vehicles.

8 Tips For Efficient, Cheaper Driving*

1 Have your route planned

Getting lost and driving around for an extra 10 minutes wastes approximately 350cc of fuel.

2 Check your tyre pressure

Just having your tyre pressure 0.5 kg/cm² too low on a 50 km trip is enough to waste approximately 150 cc of fuel.

3 Drive lightly

10 kg of unnecessary weight on a 50 km trip wastes approximately 15 cc of fuel.

4 Pull away smoothly

Accelerating suddenly 10 times from standstill wastes approximately 170 cc of fuel.

5 Don't be idle, switch off

Leaving the engine idling for 5 minutes wastes approximately 65 cc of fuel.

6 Tread Lightly

If you rev the engine 10 times, you waste approximately 60 cc of fuel.

7 Drive Smoothly

Suddenly speeding up 10 times wastes approximately 110 cc of fuel.

8 Keep an even speed

* The figures above were calculated on the basis of a 2000 cc passenger car (automatic) with fuel consumption of 11.7 km/l (10/15 mode) (source: JAMA)

1999 Tokyo Motor Show

This year's Tokyo Motor Show has come and gone but for a short while there was buzzing with new cars, new ideas, glamour and activity. No Tokyo Show would be complete without the fun showbiz element that sets it apart from other global shows, nor the legions of pretty 'companion girls' gracing the show stands. At the same time, this year's show had a different feel to it.

For the first time ever, it was a Tokyo Show for passenger cars, motorcycles and parts manufacturers only. No trucks or heavy commercials. They get their own show next year and from now on, the plan is for car and truck shows to alternate year by year. So this means a return, of sorts, to the mid '50s through to the early '70s era in Japan when Tokyo hosted a Motor Show every year.

From the Japanese makers, eco-friendly themes again dominated at Makuhari in 1999. Hybrid, electric and fuel cell concepts were everywhere, some of these doubling up as super-economy, state-of-the-art '3-litre' cars (meaning an ability to cover 30 kms on 1 litre of fuel). Not all will see production, but each

underlined the inexorable march of technology amid Japanese makers as cars become 'greener' all the while.

Sports rear-wheel-drive, or FR as it's known in Japan, was another key theme of the show. Toyota (Lexus Coupe), Nissan (XVL) and Mazda (RX-Evolv) all showed new headlining FR show models, Mazda's also debuting a brand new rotary engine development.

New genre sports-utility vehicles (SUVs) also came thick and fast such as Honda's cute Spocket, Isuzu's Revolutionary Vehicle (Kai) and Mitsubishi's SUW Active. Several Tokyo concepts examined the versatile one-room-on-wheels concept - the car as an open space for meeting and relaxing. Honda's Neukom and Nissan's AXV immediately spring to mind here.

Importers were also at Makuhari with major stands and VW, for one, booked a show surprise with the exotic new Bugatti EB 18/3 Veyron. In the end, though, one of the most talked about cars at the show was Honda's Fuya-Jo, an eye-popping, purple skateboard/mobile

nightclub concept vehicle designed for Japan's 20-30, fun-loving, all-night crowd. As often is the case at the Tokyo Show, seeing is believing. ■

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