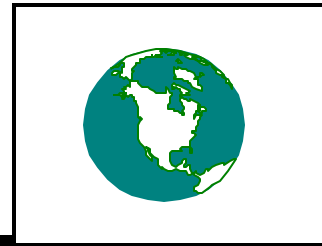


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CAR LINES

Issue 9 September 1999



*"Gentlemen, it's time we gave some serious thought
to the effects of global warming."*

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EUROPE

1. EU Reaches Compromise on Vehicle Scrappage Law

European Union governments voted to approve a draft law to make car makers bear the cost of recycling or reusing old cars, overriding opposition from Germany.

The measure, which has to be agreed by the EU's parliament, would force car manufacturers to cover the costs of taking back all cars sold after January 1, 2001, when they reach the end of their lives and are scrapped. From 2006, they would have to take back without charge any scrap car, regardless of when it was built.

The law would also force car makers to recycle or reuse 80 percent of car weight from 2006, rising to 85 percent within a decade.

The auto industry reacted angrily to the decision, saying it was unfair that the rules should apply retroactively to cars designed and built before the legislation was drawn up.

Ambassadors from the 15 EU countries agreed to a compromise plan from the Finnish government, which currently holds the EU's rotating presidency. The agreement watered down an earlier draft blocked last month by Germany, supported by Britain and Spain, following intensive lobbying from the European car industry, which said the measure would be crippling expensive.

Last December, governments agreed in principle to force car makers to guarantee free takeback of scrap cars from 2003 and force them to meet recycling targets by 2005.

The compromise will now be presented to the European Parliament for its review.

Besides setting recycling targets and guaranteeing free takeback, the law includes measures to reduce the use of lead, mercury, cadmium and other hazardous heavy metals in car manufacturing.

2. British Parliament Report Blasts UK Energy Tax

Britain's planned energy tax to cut carbon dioxide emissions could turn out to be a "blunt instrument" inflicting serious damage on British industry, according to a new parliamentary report.

The Trade and Industry Committee report also criticized the tax, known officially as the climate change levy, for treating all fuels equally regardless of their carbon content.

"We have been disturbed by the unprecedented scale of the reaction to the Government's proposal," the report said.

"We share the view expressed by several witnesses that, without appropriate modifications and exemptions, the levy could prove a blunt instrument which does considerable damage to sectors of the British economy already struggling to maintain their profitability," it added.

The report said it was "imperative" that the tax make special provision for energy-intensive industries so they did not lose international competitiveness. Otherwise the tax could cost British industry tens of millions of pounds and thousands of jobs, it quoted industrialists as saying.

The report criticized the tax for not discriminating between the pollution levels of fuels. "We recommend that the government seek ways to link the levy, at least broadly, to the carbon content of fuels," it said.

"We recommend that ways are found to exempt from the levy electricity generated by renewable technologies," it added.

It also said it was attracted by the idea of using some of the revenue from the levy to fund tax incentives which promote energy efficient investment.

3. Paris Experiences Another Difficult Pollution Summer

Paris police urged motorists to stay off the roads after air pollution reached health threatening levels in the capital during late July.

A police statement said that heavy traffic, hot and sunny weather and a lack of wind had triggered a pollution alert, and it said these conditions were likely to carry over into the start of the new working week. The statement urged motorists to drive only if absolutely necessary and otherwise to stick to public transport or at least share cars. It also ordered motorists to drive 20 km per hour (12 miles per hour) below the speed limit between 7 a.m. and 8 p.m. in the capital to keep down harmful exhaust fumes.

Police would be under orders to rigorously enforce the lower speed limits, it said.

Then, in early August, Police again urged drivers to avoid Paris after vehicle exhaust linked pollution reached health-threatening levels.

Blaming the alert again on clear, hot, windless weather, the French capital's police headquarters advised motorists to switch to public transport. They also lowered city speed limits by 20 km per hour (12 miles per hour) to reduce harmful exhaust fumes.

It was the second alert issued in two weeks.

Last year, 35 French cities banned cars from their central districts in a day-long anti-pollution experiment.

Opinion polls conducted at the time showed that two-thirds of people preferred driving to work rather than using public transport, yet a similar proportion wanted cars permanently banned from city centers.

The French government has drawn up legislation to ban the sales of leaded petrol from 2000, in line with European Union directives on fuel quality.

4. New EU Tax Minister Supports Draft EU Energy Tax

Incoming Dutch European tax commissioner Frits Bolkestein signaled his support for the European Union's draft energy tax, saying it was worthwhile even in its "current watered down form".

The latest attempt to reach agreement on the tax, which has been on the bloc's legislative agenda since 1992, was blocked by Spain and Ireland at a recent meeting of EU finance ministers.

Bolkestein said, however, the tax, which would impose minimum excise duties across all energy products and sources in the bloc, albeit with some at a zero rate and long transition periods for some countries, was still worthwhile.

Bolkestein noted the proposal would bring 90 percent of carbon dioxide producing energy products within the scope of the tax compared with just 40 percent covered by existing duties.

Finland, which holds the EU's rotating presidency, has said it will try and broker agreement on the measure before the end of

the year.

Bolkestein said he would discuss the measure with the "opposing member states" to help get an agreement.

Dutch Finance Minister Gerrit Zalm, a member of Bolkestein's Dutch Liberal party, suggested last month some EU member states might go ahead and unilaterally introduce the tax in the absence of a wider accord.

5. Pollution Is A Main Worry For French

Pollution, AIDS and food hygiene are the main worries for French people as they head into the next millennium, an opinion poll published by newspaper Le Journal du Dimanche said recently.

The survey said 85 percent of people were worried by pollution, 78 percent by AIDS and 77 percent by food contamination such as mad cow disease or BSE.

The densely populated Paris area has been plagued by poor air quality this Summer, while the World Health Organization estimated earlier this year that some 17,000 people die prematurely each year in France from illnesses related to car pollution.

The next three worries on the anxiety hit list were genetic manipulation, such as human cloning, the possibility of an accident at a nuclear power plant and climate changes.

At the bottom of the list was alarm that the new millennium might mark the end of the world. Just seven percent of people said they were worried by such predictions.

The survey of 1,004 people was carried out on July 27 and 28.

6. Germany Moving Quickly on Low Sulfur Fuels

A. Germany To Bring In Low-sulphur Fuels in 2001

The German government has announced an agreement with the car and oil industries to launch low sulphur automotive fuels in 2001, four years earlier than planned under European Union legislation.

The economics ministry said in a statement it was still looking into ways to cut tax on petrol and diesel containing less than 50 parts per million of sulphur.

"We will continue on the road to virtually sulphur-free fuels," the ministry said. It added that Germany would campaign for the EU to limit sulphur content to no more than 10 parts per million over the longer term.

Separately, the Sueddeutsche Zeitung daily reported that the government was planning to raise taxes on high-sulphur fuels by two pfennigs (one cent) per liter from October 2001 and cut tax on low-sulphur fuel by one pfennig.

The newspaper reported that the German oil industry had opposed the early introduction of separate tax rates, complaining that it would only be able to adapt its refineries to produce low-sulphur fuels by 2003.

Politicians in Chancellor Gerhard Schroeder's coalition of Social Democrats and ecologist Greens have campaigned to introduce the low-sulphur fuels from the start of next year.

No comment from the economics ministry was immediately available on the Sueddeutsche report.

B. Alliance Pushes For 10 PPM

An unusual alliance of the German car industry, motoring organizations and non-governmental organizations called for the introduction of fuels with a lower sulphur content than required by European legislation. The alliance is urging fiscal incentives greater than those currently envisioned by the German government.

The group includes the German environmental fund raising organization, the German League for Nature and Environment, the German automobile club and the association of car manufacturers (VDA). Friends of the Earth Germany (Bund), although not part of the alliance, supports the demands and so does the Verkehrsclub Deutschland (VCD), which calls itself "the traffic club for the environmentally conscious."

The organizations say the UK, Finland and Sweden are examples of how quickly low sulphur fuel can be introduced. The UK mineral oil association said that ultra low sulphur diesel sold in Britain has average sulphur levels of 30-40 ppm and market penetration is approaching 100 percent.

At this time, Germany will use tax breaks to implement the program, which is being designed to start January 1, 2000. At that time, 10 ppm sulfur gasoline will become available in super unleaded gasoline. On November 1, 2001, the oil industry will voluntarily offer 50 ppm gasoline and diesel in all pumps (using a tax incentive to do so), and on January 1, 2003, 10 ppm fuels will be offered (continuing the tax incentive previously available for 50 ppm fuels). Simultaneously, Germany will be advocating to the EU that all of Europe follow Germany's lead.

7. Several European Countries Request Derogation From Leaded Gasoline Ban

A ban on the sale of leaded petrol in the EU comes into force from the start of 2000. Member States who wish to receive a derogation from this ban (for up to a maximum of five years) needed to apply to the Commission by the end of August. Several countries including Italy, Spain, Greece and France (for their "departments d'autre de meres") have reportedly applied for a derogation.

8. UBA Finds Diesel with PM Trap Equal To Gasoline on Cancer Risk

The German UBA has announced the results of a study which concludes that diesel cars complying with the Euro 4 (2005) vehicle emissions standards if equipped with a particulate filter system would have roughly equivalent cancer risk as a gasoline fueled car meeting the same standards.

9. Athens Making Progress in Smog Wars

The notorious air pollution they call Nefos, which has hovered over the Greek capital for decades, choking people and ruining the city's classical monuments, appears to be receding. According to the Director General of the Environment Ministry, there has been a steady decline in classic pollutants ranging from 10 to 40 percent in the last 10 years despite the fact that cars have doubled in numbers. For the third summer in a row the ministry did not need to take emergency measures since none of the key pollutants reached alarm levels.

On especially bad smog days the state orders all cars from the city center and industries around Athens to limit operations. It last took such measures in July 1996.

The noxious cocktail of lethal gases that has

often turned Athens' bright blue skies to a dull grey appeared in the 1970s. Coupled with heat, the smog has repeatedly sent hundreds to hospital with respiratory problems in the past. Coupled with rain, it turns into an acid liquid that causes ancient marble monuments to crumble.

In its early days the Nefos was usually the result of industrial pollution and fumes from burning crude oil for heating. Changing industrial and heating fuel to diesel and upgrading infrastructure in the 1970s and 1980s reduced black smoke and sulphur dioxide. But the onslaught of private vehicles in a city of four million people spurning chaotic public transport has gradually made the Athens Nefos like the complex and dangerous photochemical air pollution of Los Angeles.

The number of cars circulating in the capital has more than doubled in the last decade to over two million, clogging the streets and spewing fumes as they sit trapped in traffic. In the early 1980s the government ordered half the cars out of the city center on each working day on a system of even or odd licence plate numbers. It also subsidized drivers in one of Europe's most expensive countries to replace old vehicles with new ones equipped with catalytic converters.

Although successful in reducing carbon monoxide and nitrogen oxides, ozone levels remain high and the ministry has yet to begin measuring benzene and micro-particulates.

10. UK AEA Technology Upbeat on Diesel Product

AEA Technology Plc said it had reached the late stage of development of a plasma-based diesel engine exhaust which will meet new European vehicle emission standards due to come into force in 2005. The British services company said its Electrocat diesel particulate

filter can be fitted to new and old diesel cars as well as buses, trucks, trains, ships and generators. It said the unit cost was expected to be similar to that of a catalytic converter fitted to a petrol engine.

Ian Balchin, managing director of AEA Technology's new ventures unit, said the company had been testing Electrocat on some of London's black taxis, and development of the technology was well-advanced.

"We plan to take Electrocat technology to market through a combination of partnerships and licensing agreements in good time for the introduction of the Euro IV vehicle emissions standards in 2005," Balchin said in a company announcement about the product.

AEA said there are about 11 million commercial diesel vehicles on Europe's roads, with around three million new light diesels of three liters or less manufactured annually.

It said Electrocat removes harmful carbon particulates from diesel exhausts, using non-thermal plasma technology. It was designed, developed and built at the company's Culham laboratories in Oxfordshire.

NORTH AMERICA

11. BP Amoco To Sell Low Sulfur Gasoline in Atlanta

BP Amoco announced it will introduce low-sulphur gasoline in Atlanta, a move to meet proposed federal standards to sell cleaner burning motor fuel well in advance. In the 25-county Atlanta area, the company will offer premium gasoline year-round with sulphur levels of 30 parts-per-million (PPM). The company will not sell the cleaner gasoline

at a higher price.

The cleaner gasoline will have the effect of reducing emissions that are equal to removing 12,000 cars from Atlanta highways each year, the company said.

12. California Lets Chevron Sell Non-standard Gas; Turns Out To Be Unnecessary

California's Air Resources Board agreed to grant Chevron's request to sell up to 3.5 million barrels (147 million gallons) of unleaded gasoline that does not fulfil the state's special fuel formula, the cleanest-burning in the nation. The exception to California's strict fuel regulations was granted after problems at Chevron's Richmond refinery cut gasoline output to about 30,000 barrels a day, or about a quarter of typical levels.

However, in the end, Chevron said it did not need to sell any non-standard gasoline in the state because it found enough CARB fuel supplies to supply its customers.

13. Mexico Continues to Make Progress

In the Metropolitan Area of Mexico City, August of 1997 was the final date when leaded gasoline was still available and for the rest of the country it was December of the same year. Therefore, from 1st of January of 1998 leaded gasoline was not available anymore, anywhere in the whole country.

Mexico also recently issued new standards for new vehicles. From the model 2001 all vehicles sold in the country will have to comply with TIER I standards. However, last year the government offered a two year waiver of the I/M test to those vehicles from the model 1999 that meet the emission limits

of a TIER I vehicle. As a result, all 1999 vehicle models (including large vans) meet this standard.

The government is now negotiating with PEMEX a timetable for producing gasoline with: first stage 150 ppm of S, and second stage: 50 ppm of S.

14. EPA Investigating Excess Emissions From Powerplants

The U.S. Environmental Protection Agency has revealed that it has been investigating scores of coal-fired power plants for air pollution violations that could be adding tons of NOx to the nation's air.

EPA suspects plant operators of adding generation capacity - and its emissions - without seeking new permits under routine maintenance provisions of the 1990 Clean Air Act law.

To date, no utility has received a notice of violation from the agency. The size and scope of the alleged violations could result in EPA seeking tens of millions of dollars in fines against companies.

EPA has been aided by the use of new computer-assisted investigation techniques, which allow officials to track how much power is being produced by individual units within a plant and how much coal is being burned.

EPA believes emissions of smog-forming nitrogen oxide have increased from 1,000 to 10,000 tons a year at some plants.

Nitrogen oxide is a prime ingredient in smog. Power plants that burn coal are major sources of the gas, and when added to sunlight it produces ground level ozone that can cause breathing problems.

For years, Northeastern states have sought federal controls on Midwestern and Southeastern coal-burning plants, which are blamed for blowing pollution to the Northeast region.

The EPA's disclosure comes in the same week environmental organization U.S. Public Interest Research Group (PIRG) blasted coal-fired power plant operators for raising emissions.

In a report entitled "Up in Smoke," PIRG said "the nation's coal usage is up almost 16 percent, annually producing smog equal to that from 37 million cars and global warming pollution equal to that from 44 million cars."

15. New Engine With Only Three Moving Parts Unveiled

A revolutionary engine that weighs only 100 pounds (45 kilograms) and has just three moving parts but is as powerful as a conventional V-8 motor, was unveiled in Los Angeles.

The engine, the brainchild of Australian engineer Steven Manthey, is produced by Advanced Engine Technologies Inc, which was founded to develop the OX2 motor. It has the backing of motor racing heavyweights Carroll Shelby and Bobby Allison and is being tested by the University of California, Riverside's Center for Environmental Research and Technology with financial backing from General Motors Corp., Outboard Marine Inc. and Caterpillar.

The only moving parts are the cylinder block, which rotates, and the two piston plates. Everything else remains static. Other departures from the conventional engine are that the OX2 has no crankshaft, no valves, no distributor, no oil pump and no water pump.

The company also claims the OX2 is more fuel efficient than conventional engines and has lower emissions. Those claims will be evaluated during the first phase of a five-year testing program at UC Riverside. The exact amount of torque the engine puts out will also be determined during the six months of the first phase.

The second phase, which will be conducted jointly with engineers from the company, will involve optimizing the engine design and fuel injection system and testing the engine in a variety of applications, from cars and boats to power generators.

16. Ford Opens Hydrogen Fueling Station

Ford Motor Co. opened a hydrogen fueling station as part of an effort to launch a vehicle powered by a fuel cell by 2004.

The \$1.5 million station, only the second of its kind in the world, is able to refuel Ford's P2000 prototype car with either liquid or gaseous hydrogen, which is then combined with oxygen in a fuel cell to create electricity. The only emission from a hydrogen fuel cell, which also powers NASA's space shuttle, is water.

Spurred by competitive and regulatory pressures, General Motors Corp. and DaimlerChrysler AG have also pledged to launch a fuel cell vehicle by 2004.

Ford vice president of research Bill Powers said the station will help the automaker analyze the benefits of liquid versus gaseous hydrogen, different types of nozzles for refueling and different pressures for optimal use.

A solid form of hydrogen for fuel cells is also being explored, said John Wallace, Ford

director of environmental vehicles. Ford also has to explore whether pure hydrogen would be used, or more readily available gasoline or methanol would be converted to hydrogen using a "reformer" for the fuel cells and whether the reformer should be located in the vehicle or at the filling station.

Ford officials admit they do not have the answers yet.

A Ford official told dealers at a conference in Philadelphia that the No. 2 automaker will spend \$1 billion on alternative fuel research over the next five years, including \$400 million on hydrogen alone. Other fuels being researched include clean diesel, electricity, propane, natural gas and ethanol. All of Ford's model year 2000 F-Series pickup trucks will have a bi-fuel option - meaning they can run on more than one fuel.

Ford and Mobil Corp. also announced they have made progress in developing an on-board gasoline fuel processor that would create hydrogen and convert it to electricity to power a fuel cell. The reformer could boost fuel efficiency by 50 percent over the current internal combustion engine.

17. Nissan Expects To Certify Gasoline Fueled SULEV

Nissan Motor Co.'s North American unit said it is in the final process of certifying in California a gasoline-fueled "super ultra low emission vehicle" for the 2000 model year.

Nissan said the 1.8-liter version of its 2000 Sentra compact sedan is expected to emit about one-fourth of the unburned hydrocarbon and one-tenth of the oxides of nitrogen emissions of the cleanest gasoline-powered car sold now in California.

This version of the Sentra will eliminate all

evaporative emissions, or the emission of raw hydrocarbon gasoline vapors given off from a vehicle's fuel system, Nissan said. The company said this would be the first auto to be certified to the California Air Resources Board's "zero evaporative emission standard."

The new vehicle is to be officially unveiled at the Detroit auto show in January, the No. 2 Japanese auto maker said.

"As a point of comparison, a person will be able to drive this new 2000 model Sentra with the 1.8-liter engine 10 miles to work, return home and have the vehicle emit less than a typical new car parked in a driveway all day with its engine shut off," said Robert S. Strassburger, Nissan's North American director for government and technical affairs.

One bar to offering the vehicle nationwide, Nissan said, is the lack of limits elsewhere on fuel sulfur content that are as strict as California's restrictions.

Production of this version of the Sentra is scheduled to begin in February. Nissan said it would disclose full details about the engine technology after it has obtained final California certification, which it expects this fall.

18. President Clinton Issues Executive Order on Biofuels

President Clinton has issued an Executive Order that will coordinate Federal efforts to accelerate the development of 21st century bio-based industries that use trees, crops, and agricultural and forestry wastes to make fuels, chemicals, and electricity. According to the White House, owing to recent scientific advances, bioenergy and bioproducts have enormous potential to create new economic opportunities for rural America, enhance U.S. energy security, and help meet environmental

challenges like global warming. In a separate Executive Memorandum, the President set a goal of tripling U.S. use of bio-based products and bioenergy by 2010. Meeting this goal could create \$15 billion to \$20 billion in new income for farmers and rural America, and reduce annual greenhouse gas emissions by an amount equal to over 100 million metric tons of carbon (MMTCE) – the equivalent of taking over 70 million cars off the road.

A. Biomass

Biomass is trees, crops, and agricultural and forestry wastes that can be used to make fuels, chemicals, and electricity. Biomass is a clean, domestic, and renewable source of energy. It can be used to fuel cars, power factories, and create a host of chemicals and other everyday products.

B. Executive Order

Recent scientific advances in farm, forestry, and other biological sciences are making bioenergy and bioproducts more technically feasible and more economically viable. Recent reports and studies -- including the just-released National Research Council report, "Biobased Industrial Products" -- have concluded that Federal support for research is essential to realizing the economic and environmental potential of bio-based industries. The Executive Order acts on this advice to create a powerful new research management team to focus Federal efforts with a goal of tripling U.S. use of bioenergy and bioproducts by 2010. Energy from biomass sources currently accounts for about 3 percent of the total U.S. energy supply - mostly from wood and wood waste.

This Executive Order :

-- Establishes a permanent council consisting of the Secretaries of Energy and Agriculture,

the Environmental Protection Agency Administrator, and the Director of the National Science Foundation, and other agency heads to develop a detailed research program to be presented annually as part of the annual Federal budget.

-- Instructs the council to review major agency regulations, incentives and programs to ensure that they are being used effectively to promote the use of bioproducts and bioenergy. The council's plan will be reviewed by an outside advisory group with representatives from bio-based industries, farm and forestry sectors, universities, and environmental groups.

-- Directs DOE and USDA to establish a National Biobased Products and Bioenergy Coordination Office to manage the preparation of interagency budgets and provide an easy point of entry for anyone interested in Federal work in biobased products and bioenergy.

The Executive Order also builds on the Administration's record of strong and consistent support for bio-based industries. This includes the Administration's electricity restructuring bill introduced earlier this year requiring that 7.5 percent of all U.S. electricity come from renewable resources by 2010; Executive Order 13101, signed in September 1998, instructing Federal agencies to make use of biobased products; new proposed tax credits for bio-based electricity production; and increased research funding for the Department of Energy (DOE), the Department of Agriculture (USDA), and the National Science Foundation.

In a separate Executive Memorandum, the President instructed the Secretaries of Energy and Agriculture to prepare a report within 120 days outlining and assessing options for modifying existing DOE and USDA

programs with a goal of tripling U.S. use of bio-based products and bioenergy by 2010.

C. What is Being Done Now

Clean bioenergy and bioproducts are very much here and now. Already DOE and USDA are participating in partnerships on a number of major, breakthrough bioenergy and bioproducts projects, including:

-- Biomass to Ethanol Demonstration Projects.

Last fall BC International broke ground in Jennings, Louisiana on the first commercial plant to produce ethanol from the cellulose in agricultural waste -- in this case sugar cane bagasse. A number of other demonstration projects are under development to convert municipal solid waste to ethanol.

-- Biorefinery for Chemicals.

Cargill Corporation, one of the largest privately held company in the United States, has built a prototype biorefinery in Blair, Nebraska. This new facility will use corn to produce a stream of chemical products and also a biodegradable polymer, polylactic acid, used in making films, fibers, rigid materials and coatings.

-- Co-Firing Technologies.

A number of projects are exploring ways to use biomass such as switchgrass and short-rotation wood crops like willows to make electricity by cofiring them with coal. Two of the most prominent projects -- the Iowa Chariton Valley project and the New York Salix project -- will also investigate the technical and business aspects of biomass gasification, where biomass is made into a fuel gas that can be used for heat or power production.

D. Economic Potential

A robust bioenergy and bioproducts industry in the United States promises tremendous economic benefits for biomass producers - including farmers and the forest products industry - energy producers, chemical manufacturers, and the U.S. economy as a whole.

For rural America, a fast-growing bioenergy market will greatly increase the demand for energy crops and for agricultural and forest residues, or wastes, of all types. Since the cost of transporting the raw materials is high, most of the value-added work would occur in rural communities, providing new revenue streams for farmers and cash-flow for rural economic development. This means that good, high-technology jobs associated with producing biofuels and chemicals can be added in rural communities helping ensure that they will be an integral part of a prosperous 21st century American economy. By creating high-tech jobs and new economic opportunities, meeting the President's goal of tripling U.S. use of bioenergy and bioproducts could add \$15 billion to \$20 billion in new income for farmers and many rural communities.

Finally, as the President's Committee of Advisors on Science and Technology highlight in their new report - "Powerful Partnerships: The Federal Role in International Cooperation on Energy Innovation" -- investments in bioenergy technologies, infrastructures, and markets could increase profitability for U.S. firms competing in global markets, while simultaneously providing for the world's future energy needs in an environmentally sustainable way.

E. Link To Environmental Challenges

Substituting biomass for fossil fuels can dramatically reduce greenhouse gas emissions that contribute to global warming. Since biomass crops absorb carbon during growth, their use for energy and other applications results in near zero net carbon release.

Meeting the President's goal of tripling our use of bioenergy and bioproducts by 2010 will reduce greenhouse gas emissions by 100 MMCTE – the equivalent of taking more than 70 million cars off the road. Substituting for fossil fuels, bioenergy will also reduce emissions of nitrogen oxides (NOx), sulfur oxides (SOx), and other pollutants.

Additionally, the deep-rooted plants commonly used for biomass -- such as poplar, willow, and switch grass -- are helpful in controlling erosion, filtering chemicals from water runoff, and slowing floodwaters.

F. FY 2000 Budget Request

The President's FY 2000 budget request contains \$242 million for investments in biomass research, development and deployment, including:

-- Advanced Biomass Power and Fuels. Funding for DOE and USDA to continue developing, testing, and demonstrating high-yield, low-cost biomass feedstocks; cofiring biomass with coal to produce electricity; advanced technologies for biomass gasification using paper industry by-products; and continued work on producing alternative fuels, such as ethanol, from biomass.

-- National Biomass Partnership. Funding for DOE, USDA and other Federal agencies and private partners to launch a national partnership to develop advanced integrated biomass technologies.

The President has also proposed a package of biomass tax credits. The President proposes to extend for 5 years the current 1.5 cent per kilowatt hour tax credit for electricity produced from biomass. The proposal also expands the types of biomass eligible for the credit to include certain forest-related, agricultural and other resources. Finally, the package includes a 1.0 cent per kilowatt hour tax credit for electricity produced by cofiring biomass in coal plants.

To date, Congress has not only failed to enact these proposed new tax credits, but has terminated the current 1.5 cent per kilowatt credit and cut the President's budget request by 14 percent.

19. EPA Announces New Appointments

EPA has announced the results of the search for candidates to fill the three executive level positions which OMS was recently granted. Merrylin Zaw-Mon, Gregory A. Green and Chester J. France have been selected.

Merrylin Zaw-Mon has been selected to lead the Fuels Division. She will be stationed in Washington, DC. Currently, she serves as Director of the Air and Radiation Management Administration in the State of Maryland. Highly regarded by her peers, she has been elected President of STAPPA/ALAPCO. Merrylin received a bachelor of science degree in chemical engineering from the Rangoon Institute of Technology in 1971 and a M.S. in environmental health from Johns Hopkins in 1982. She has also completed a program of study for State executives at Harvard University's John F. Kennedy School of Government. She started her environmental career with Maryland in their Water Management Administration as a public health engineer, ultimately rising to the position of Deputy Director in that Administration. In 1992 she was appointed the Director of the

Air and Radiation Management Administration in the Maryland Department of the Environment, where she currently manages a budget of over \$10 million and directs the activities of over 200 engineers, scientists, lawyers, and support personnel - a position of enormous difficulty, complexity, and responsibility. In this position she has demonstrated the ability to manage and inspire a large organization, to effectively represent her organization in politically charged environments, and to maintain a sound technical/scientific base for action.

Greg Green has been selected to lead the Vehicle Division. He will be stationed in Ann Arbor, Michigan. Greg is the Air Quality Administrator for the State of Oregon. Also held in the highest esteem by his peers, he has been elected to serve on the board of STAPPA/ALAPCO and also serves as co-chair of that organization's public education committee. He has had a distinguished and varied career, ranging from an officer in the Air Force, an elected representative on his home town's city council, to a top executive in state government. Greg received a bachelor of science degree in industrial engineering from Arizona State University in 1982 while on active duty with the United States Air Force. In 1992, he accepted a position with the City of Portland as Manager of the Storm Water Section, before moving on to his present position in 1994. His role as Air Quality Administrator for the State of Oregon requires him to administer a \$24 million budget, and direct the activities of 165 professional and support personnel engaged in comprehensive permitting, air quality monitoring, air quality planning, and I/M programs, among others.

Chet France received his bachelor of science degree in mechanical engineering in 1973 from Cleveland State University, and two masters degrees from the University of

Michigan, in mechanical engineering and business administration.. He has worked with OMS since 1973, throughout all that time demonstrating the values, the integrity, and the dedication to public service that are at the heart of the senior executive service. He is a superb leader who has distinguished himself with his commitment to achieving results. In his current role as Director of EPCD, he has led the effort to develop and implement programs designed to reduce emissions from engines in busses, trucks, non-road equipment, lawn and garden equipment, aircraft, locomotives, marine engines, and the like. Most recently he led the efforts in the Tier 2 proposal for cars and light trucks and reductions in the sulphur content of gasoline.

20. Intense Heat Wave Causes Deaths in US

Searing temperatures of around 100 degrees (38 C) combined with suffocating humidity baked much of the country and lifted the death toll from the summer's heat wave in the United States to more than 50 people. In addition, the heat has buckled pavements, caused water and electricity shortages, parched crops and lawns, and killed thousands of livestock and fish.

The heat wave has covered much of the eastern United States, with the core of the heat in the nation's midsection. The Missouri Health Department has counted 26 heat-related deaths. St. Louis has had 16 of those 26 victims, many of them elderly found in homes without air conditioning.

A 43-year-old woman was found dead outside her home by a neighbor in Columbia, Missouri, who noticed the woman's radio had been left on. Police suspected she had been sunbathing.

Forecasters said temperatures during the

current heat wave have climbed as high as 111 degrees (44 C) in Pierre, South Dakota - but should begin to ease gradually.

Chicago has counted 16 heat victims, with at least three others elsewhere in Illinois.

An elderly woman was apparently trying to reach a shut window when she collapsed in her home in St. Clair County, Illinois, near St. Louis, authorities said.

Cincinnati has had 10 deaths, where officials said they were disappointed at the turnout at their 28 cooling centers, to which at-risk residents can get free rides. The infirm are just reluctant to leave their homes, officials said.

Oklahoma reported what may be its first death related to the heat wave, with the discovery on Wednesday of a 57-year-old man slumped over the wheel of his car in his garage in Norman. Police said it would take several days for confirmation that heat caused the death.

A woman found dead in her home in Kentucky on Wednesday who was previously counted as a heat-related death was declared a heart attack victim, though the coroner said high temperatures in her non-air conditioned home may have played a role.

In Georgia, two elderly people died. "Any time you get high humidity levels, it's going to be difficult breathing," said National Weather Service forecaster Gerald Birdow in Atlanta.

Communities from the Great Plains to the East Coast urged residents to conserve water and utilities asked consumers to reduce power usage.

The governor of Maryland, a state suffering through its worst drought in 30 years, called

for water conservation efforts. Some 700,000 freshwater fish have died in Chesapeake Bay tributaries running low because of a lack of rainfall. Gov. Parris Glendening declared a drought emergency near Baltimore's Liberty Reservoir, which is 24 feet (8 meters) below normal. The reservoir and two others provide drinking water to 1.8 million residents in Baltimore and are significantly below normal levels.

In Nebraska, the heat has killed an estimated 3,000 cattle and the toll could be higher, a spokesman for the Nebraska Cattlemen's Association said.

Dairy farms in heat-stricken states have seen cows reduce their milk production sharply as they sought shade and neglected to graze.

Lack of rainfall has parched pastures and lawns from the mid-Atlantic states to New England.

Drought was also afflicting parts of the Pacific Northwest, Northern Florida and Southern Texas.

21. High Smog Levels Occur in Cities and Vacation Spots

During the first half of the summer, some of America's favorite vacation hideaways had as much smoggy air than the cities people were trying to escape, according to statistics presented by environmental and health organizations.

Whether on Cape Cod or at the Indiana Dunes, in the Great Smoky Mountain National Park or on Maryland's Eastern Shore, smog has been a problem on many days this summer, they said.

"The heat wave has turned into a smog wave," said Conrad Schneider, an official of

the Clean Air Task Force, one of the groups that produced the report, much of which relied on state and federal air quality statistics.

Air pollution in national parks and other rural vacation spots is nothing new. For years, some parks have had serious haze and smog problems because of pollution that can drift hundreds of miles through the air from power plants and other sources.

In April, the Clinton administration announced a plan to cut air pollution in 37 national parks and 119 wilderness areas. The goal was to bring air in those vacation spots to pristine levels by the middle of the next century.

Paul Billings of the American Lung Association said smog-filled air is particularly hard on people with asthma, including children who "should be enjoying their summer vacations, not grabbing for asthma inhalers."

The environmental groups, examining air quality data from April 1 to July 25 found, for example:

The northern tip of Cape Cod had 11 dirty air days, compared with four for downtown Boston.

Acadia National Park on the Maine coast had about the same amount of smoggy days as Philadelphia.,

The Hamptons on New York's Long Island had the same bad air days as Manhattan.

The Indiana Dunes on Lake Michigan had more dirty air days than Indianapolis.

Small towns along the Blue Ridge Parkway near Asheville, N.C., reported air pollution levels on par with downtown Charlotte.

The Great Smoky Mountain National Park had dirtier air on some days than any city in the South, except Atlanta.

The groups said that in the 32 states examined between April 1 and July 25, the levels of ozone, or smog, exceeded federal standards on 85 days in some parts of the 32 states - a total of 2,743 such instances.

22. US EPA About To Issue Heavy-duty 2004 Technology Review NPRM

The US EPA and the California Air Resources Board signed a statement of principles (SOP) with the heavy duty engine industry in 1995 which laid the framework for a 1997 Rule to tighten NOx standards. The Final Rule which emerged established tighter NOx standards for 2004 and later heavy duty diesel engines. However, as part of the final rule the EPA agreed to complete a technology review of the 2004 standards by the end of 1999.

In November 1998, EPA and the heavy duty diesel industry signed a Consent Decree which changed the context of the technology review:

- 7 of the largest HD diesel engine manufacturers agreed to pull ahead 2004 technology to October, 2002
- Supplemental test cycles and associated standards were added.

A. Key Diesel Engine Provisions Contained in NPRM

The Technological Feasibility of the 2004 NMHC+NOX standards are reaffirmed but there is no change in the PM standard.

EPA concludes that no changes in diesel fuel quality are necessary to meet the 2004 standards, although manufacturers are continuing to raise sulfur as an engine

durability issue

EPA also proposed the supplemental standards and test cycles specified in the heavy-duty diesel consent decrees.

Onboard Diagnostics are proposed for vehicles <14,000LB to harmonize with California's requirements.

- In-use testing program for all HD engines and vehicles
- On-board Diagnostics for >14,000lb vehicles
- Diesel Consent-decree type in-use compliance requirements for Gasoline Engines
- Revised definition of rated speed for heavy-duty diesel engines

B. Key Gasoline Provisions Contained in NPRM

New standards are being proposed for 2004.

i. Gasoline Vehicle Provisions ("Complete Vehicles")

- Harmonize with California Chassis certified program
- CARB Medium-duty vehicle LEV-I standards in 2004
- On-board diagnostics for HD gasoline complete vehicles <14,000lbs

ii. Gasoline Engine Provisions ("Incomplete Vehicles")

- Proposing Technology Forcing Exhaust Standards - 1.0 g/bhp-hr NMHC+NOx for 2004,
- On-board diagnostics for HD gasoline engine used in <14,000 lbs vehicles

C. Provisions Removed from NPRM while at OMB

During the internal Administration review process, several provisions were deleted, including the following:

The industry, EPA, and CARB committed to work on these issues in a process which would lead to a follow-on Rulemaking with an implementation date in the 2004 time frame

The Public Hearing on the proposal is currently planned for Philadelphia, the 3rd week of October.

23. AQMD To Focus on Toxicity of Diesel Exhaust

Expanding its role into new territory, the South Coast Air Quality Management District (AQMD) is crafting a new strategy to reduce the health threat people face from breathing diesel exhaust and other carcinogenic chemicals polluting the air. The ambitious plan, already under attack by the trucking industry, could lead to the nation's first comprehensive regulations for battling airborne toxic substances. The South Coast Air Quality Management District board is expected to formally direct its staff to complete work on the outline for new and revised rules, which would rival in scale the agency's massive strategy to combat ozone, the primary ingredient of smog.

The Los Angeles Basin's air ranks among the worst in the country for an array of pollutants linked to cancer and other serious health problems. (In 1999, for the first year in memory, Los Angeles's air quality is not the worst in the nation, that distinction passing to Houston, Texas.) Because diesel

engines--not factories--are blamed for most of the high risk, the AQMD is laying the groundwork for regulations, as early as next year, that would force some fleets of vehicles, especially trucks, to use alternative fuels rather than diesel. Over time, the regulations could affect many other industries.

AQMD officials originally intended to focus entirely on reducing toxic emissions from industry. But while searching for toxic hot spots last year, they discovered that the air throughout the region carries a high risk, largely because of diesel engines in trucks and elsewhere. It is apparently more dangerous to breathe the air next to a busy intersection than that next to an oil refinery.

The AQMD estimates that 1,500 of every 1 million residents in Los Angeles, Orange, Riverside and San Bernardino counties could be contracting cancer over a lifetime from breathing toxic chemicals. Diesel exhaust is considered so abundant and potent that it accounts for roughly three-fourths of that risk, according to the AQMD's calculations.

The AQMD has disclosed few details of what the new Air Toxics Control Plan will encompass, but it appears that it would require a certain percentage of some truck fleets to be powered by alternative technologies such as natural gas or electricity.

The AQMD's goal is to complete the plan outlining specific regulations on toxics for a variety of industries and other sources within six months and begin implementing some of them next summer.

For three decades, the AQMD has focused primarily on smog-forming pollution from businesses--so-called stationary sources--and has had little authority to tackle cars, trucks and other vehicles, which are

regulated instead by state and federal officials.

Truck and bus engines that burn natural gas are already on the market. But there has been little incentive for truckers and others to try them because of the high cost of the engines and limited availability of the fuel.

Unlike the situation with ozone, the AQMD faces no federal or state mandates to clean up toxic air pollutants. The U.S. Environmental Protection Agency has a national program that focuses on large industries. Last year, the California Air Resources Board declared diesel soot a cancer-causing pollutant and is trying to figure out how to reduce the threat.

24. HEI Corrects Misinterpretations of its Study

In a letter to the eight industry associations that have petitioned the California Air Resources Board to reconsider its 1998 decision to designate diesel exhaust particulate matter as a toxic air contaminant under California law, the Health Effects Institute (HEI) clarified and corrected several areas where the Petition either states or implies conclusions that the HEI Panel did not reach.

The Diesel Epidemiology Expert Panel was convened by HEI's Board of Directors to review the currently available epidemiology data for its potential application to quantitative risk assessment (QRA), with the primary goal of providing future research directions for improving it. As such, the members examined in detail two sets of existing epidemiological and exposure data that might offer the best opportunities for improving QRA and issued the recent report, *Diesel Emissions and Lung Cancer: Epidemiology and Quantitative Risk Assessment*. The Panel did not, however, specifically evaluate

the broader epidemiological literature (this was reviewed earlier in HEI's 1995 Special Report on diesel exhaust (Health Effects Institute, 1995)) nor the application of those studies by OEHHA or any other risk assessment agency to the development of a unit risk factor, nor were they asked to do so.

Because of the focused nature of the Panel's undertaking, HEI felt that it was important to note several areas where the Petition either states or implies conclusions that the Panel did not reach. Specifically there are three areas where the petition goes further in attributing conclusions to the Panel than HEI thinks is appropriate:

- ! the petition implies (p.21) and states (p.26) that the Panel concluded that, "the correct interpretation of the Garshick study is that any occupational increase in lung cancer among train riders was *not* due to diesel exposure (p.21)." It supports this by partially quoting, on p.20, the Panel's description of the biases in the data. However, the Panel did not conclude what the correct interpretation of the Garshick data is, but rather stated that biases in the data, which might move the risk estimates in either direction, make it "difficult to determine the true nature of an exposure-response relationship." The Panel's full comments on this are as follows:

"Such a systematic pattern of decreasing risk with increasing exposure suggests that some form of bias is present in the data, which makes it difficult to determine the true nature of an exposure-response relation. Bias can result from uncontrolled confounding by cigarette smoking or by other occupational exposure, differential misclassification of exposures by job category, longer survival of

"healthier" workers, or differential ascertainment of lung cancer as a cause of death.

- ! the petition states at several points that the Panel reviewed and rejected the unit risk value developed by OEHHA. ("It would be irresponsible to retain a unit risk value that has been expressly rejected by an independent group of scientific experts (p.27)" "The HEI Diesel Epidemiology Expert Panel expressly reviewed and rejected the scientific analysis that formed the basis for OEHHA's unit risk value (p.29)").

As noted above, the Panel did not review nor reject OEHHA's development of a unit risk value, nor did it explicitly review the models used by OEHHA to analyze the Garshick study. Rather, it developed a number of models, including one's similar to those used by both OEHHA and other analysts for the purpose of understanding why different analysts had obtained different results, and for determining whether future efforts to develop quantitative risk assessments should rely on the current railroad workers data.

- ! the petition at several places states that the Panel called for additional analysis of the Steenland teamsters data set *before* using it in QRA (emphasis added). In fact, the Panel did not recommend when the Steenland data should or should not be used in QRA, but rather noted some of its advantages and challenges, and recommended its accelerated review:

"Further scrutiny of the teamster data,

including estimation of uncertainty in both the exposure estimates and selection of controls, is recommended in order to improve the use of these data in QRA. Strengths of the teamster study include the relevance of exposure levels to the general population and the use of an exposure marker for diesel engine emissions that was an improvement over RSP. The teamster study exposure-response analysis is relatively new, and its further review and analysis by both the original investigators and others should be accelerated. Alternative retrospective exposure models need to be developed that use the alternative assumptions described above and in more detail in the body of the text."

ASIA-PACIFIC REGION

1. Nepal Initiates Pollution Control Effort; To Ban 2 stroke Scooters

His Majesty's Government of Nepal has encouraged import of vehicles that meet EURO standards. It has given a rebate of 10% on import duties for EURO I meeting vehicles which is in effect from July 11, 1999. This was done on the recommendation by a national level committee on solving vehicle emission problems.

Further, newspaper reports indicate that Nepal has banned the import of two-stroke motorcycles in a bid to improve air quality in the Himalayan kingdom. Bhakta Bahadur Balayar, a junior minister in charge of population and environment, reportedly told the daily Kathmandu Post that the ban would be enforced immediately.

"Steps will also be taken to remove the existing ones," Balayar was quoted as saying.

Officials say half of the 70,000 motorcycles plying the smog-filled streets of Kathmandu

have two-stroke engines and are mainly imported from neighboring India. Recently Nepal ordered three-wheeled auto rickshaws off the streets of its temple-studded capital because of pollution from diesel exhaust fumes. Auto rickshaw operators have been asked to switch to non-polluting vehicles by September 17.

2. Toyota Exploring A Variety of Green Cars

Toyota Motor Corp says its hybrid-engined Prius may have grabbed much of the spotlight on green car technology, but it is not going to put all its eggs in one basket.

Clean car technology is a matter of survival for the world's automakers. Increasingly strict environment laws and the huge costs of developing eco-friendly technology are helping drive a wave of consolidation in the industry.

Toyota caught the automotive world off guard when it unveiled the Prius in late 1997, becoming the first and so far only automaker to mass-market a vehicle combining a gasoline engine with an electric motor. Around 1,500 Prius cars are sold each month in Japan and sales in North America and Europe are scheduled to begin in mid-2000.

Toyota has just laid the groundwork for the U.S. debut of the Prius, such as contracts for the collection and safe disposal of the car's batteries. Although Toyota is still making losses on the car, the automaker aims to make it profitable, excluding R&D costs, within the next two to three years.

Prius has set Toyota apart from rivals such as Ford Motor Co and DaimlerChrysler AG, which are thought to be focusing most of their next-generation vehicle research on fuel cells.

But Toyota feels confident it has been right to

invest its time and money in Prius. A Toyota spokesman said there were still many uncertainties regarding fuel cells, including questions such as whether prospective fuels like methanol can be used safely.

Not that Toyota is shrinking from the fuel cell race. It signed a five-year technology pact with General Motors in April to speed the development of fuel cells, as well as hybrids and electric vehicles, and will set up a new fuel cell division in July. Toyota's decision not to join a fuel cell development project headed by Ballard Power Systems, in which both Ford and DaimlerChrysler hold stakes, has been the subject of much media speculation. But a key factor was Toyota's belief in developing technology in-house.

Toyota believes that it's far too early to know which next-generation vehicles will grab a significant share of the market, so Toyota aims to keep a finger in every major research pie related to green auto technology. They also believe that despite the development of next-generation technologies, the internal combustion engine was unlikely to disappear overnight. Gasoline engines would still be powering about 80 percent of the vehicles on the road 10 years from now.

3. Shanghai Making Progress Regarding Vehicle Emissions

Since 1990, the Shanghai municipal government's attention has been focused on motor vehicle pollution control. This has consisted of three primary thrusts:

- Improved transportation
- Control of new vehicles, and
- Control of used vehicles

With regard to new vehicles, as of July 1 all

new cars must now comply with Euro 1 standards. This follows last year's decision to phase out leaded gasoline sales. The next step will be the introduction of Euro 1 standards for heavy duty trucks.

With regard to used vehicles, several actions are currently underway. First, approximately 10,000 out of 40,000 taxis have been converted to operate on LPG fuel. Further, all light duty vehicles sold in Shanghai after January 1, 1998 - approximately 40,000 vehicles of which approximately 30,000 are VWS. - will be required to be retrofitted to also comply with Euro 1 standards. A pilot effort has been started with full implementation to begin by October 1 and to be completed by the end of the year. The retrofit costs will be shared by the manufacturer, the vehicle owner and the government (likely by a reduction in the I/M fee for retrofitted vehicles).

Another major effort is focused on cleaning up the approximately 14,000 public buses - 11,000 gasoline and 3,000 diesel. One thrust for these vehicles will be conversions to CNG; a trial of about 30 vehicles will begin soon. In addition, discussions have been initiated with manufacturers regarding possible upgrading of the diesel engines.

Finally, a major effort over the next year will be directed toward upgrading the I/M program. Major problems with the current system include facility and equipment, test methods, poor skill of the staff and the overall management system.

At present there are 18 central I/M stations and 47 "regular" stations. All stations can perform the idle test for gasoline vehicles and a diesel smoke test (as well as various safety checks) but the central stations also do detailed testing of various engine parameters.

The inspection fee is currently 40 Rmb with

no free retests.

To repair vehicles, Shanghai has approximately 300 first level repair facilities, which can fix any aspect of the vehicle, and 1000 second level facilities which can only repair engine and emissions components.

4. Philippines Clean Air Act Addresses Vehicle Emissions

The New Philippine Clean Air Act which was signed by President Estrada in late June has several important provisions related to vehicles and their fuels. Certain key provisions are summarized below:

Emission Charge System. – The Department of Environment and Natural Resources (DENR)¹, in case of industrial dischargers, and the Department of Transportation and Communications (DOTC), in the case of motor vehicle dischargers, shall, based on environmental techniques, design, impose on and collect regular emission fees from said dischargers as part of the emission permitting system or vehicle registration renewal system, as the case may be. The system shall encourage the industries and motor vehicles to abate, reduce, or prevent pollution. The basis of the fees include, but is not limited to, the volume and toxicity of any emitted pollutant. Industries, which shall install pollution control devices or retrofit their existing facilities with mechanisms that reduce pollution shall be entitled to tax incentives such as but not limited to tax credits and/or accelerated depreciation deductions.

Air Quality Management Fund. – An Air Quality Management Fund to be administered

¹Hereafter referred to as the Department

by the Department as a special account in the National Treasury is hereby established to finance containment, removal, and clean-up operations of the Government in air pollution cases, guarantee restoration of ecosystems and rehabilitate areas affected by the acts of violators of this Act, to support research, enforcement and monitoring activities and capabilities of the relevant agencies, as well as to provide technical assistance to the relevant agencies. Such fund may likewise be allocated per airshed for the undertakings herein stated.

The Fund shall be sourced from the fines imposed and damages awarded to the Republic of the Philippines by the Pollution Adjudication Board (PAB), proceeds of licenses and permits issued by the Department under this Act, emission fees and from donations, endowments and grants in the forms of contributions. Contributions to the Fund shall be exempted from donor taxes and all other taxes, charges or fees imposed by the Government.

Pollution from Motor Vehicles - The DOTC shall implement the emission standards for motor vehicles set pursuant to and as provided in this Act. To further improve the emission standards, the Department shall review, revise and publish the standards every two (2) years, or as the need arises. It shall consider the maximum limits for all major pollutants to ensure substantial improvement in air quality for the health, safety and welfare of the general public.

The following emission standards for type approval of motor vehicles shall be effective by the year 2003:

For light duty vehicles, the exhaust emission limits for gaseous pollutants shall be:

Emission Limits for Light Duty Vehicles

Type Approval
(Directive 91/441/EEC)

a for compression-ignition engines only

CO (g/km)	HC + NOx (g/km)	P M ^a (g/km)
2.72	0.97	0.14

For light commercial vehicles, the exhaust emission limit of gaseous pollutants as a function of the given reference mass shall be:

Emission Limits for Light Commercial Vehicles

Type Approval
(Directive 93/59/EEC)

Reference Weight (RW)(kg)	CO (g/km)	HC + NOx (g/km)	PM ^a (g/km)
Category 1 1250 < RW	2.72	0.97	0.14
Category 2 1250 < RW < 1700	5.17	1.4	0.19
Category 3 RW > 1700	6.9	1.7	0.25

a for compression-ignition engines only

For heavy duty vehicles, the exhaust emission limits of gaseous pollutants shall be:

Emission Limits for Heavy Duty Vehicles

Type Approval
(Directive 91/542/EEC)

CO(g/kWh)	HC(g/kWh)	NOx(g/kWh)	PM (g/kWh)
4.5	1.1	8.0	0.36 ^a

a In the case of engines of 85 kW or less, the limit value for particular emissions is increased by multiplying the quoted limit by a coefficient of 1.7.

Fuel evaporative emission for spark-ignition engines shall not exceed 2.0 grams hydrocarbons per test. Likewise, it shall not allow any emission of gases from crankcase ventilation system into the atmosphere.

Inspect and monitor the emissions of motor vehicles;

Prohibit or enjoin the use of motor vehicles or a class of motor vehicles in any area or street at specified times; and

Authorize private emission testing centers duly accredited by the DTI.

The Department, in collaboration with the DOTC, DTI, and LGUs, shall develop an action plan for the control and management of air pollution from motor vehicles consistent with the Integrated Air Quality Framework. The DOT shall enforce compliance with the emission standards for motor vehicles set by the Department. The DOT may deputize other law enforcement agencies and LGUs for this purpose. To this end, the DOTC shall have the power to:

The DOTC, together with the DTI and the Department, shall establish the procedures for the inspection of motor vehicles and the testing of their emissions for the purpose of determining the concentration and/or rate of emission of pollutants discharged by said

sources.

In order to ensure the substantial reduction of emissions from motor vehicles, the Department of Trade and Industry (DTI), together with the DOTC and the Department, shall formulate and implement a national motor vehicle inspection and maintenance program that will promote efficient and safe operation of all motor vehicles. In this regard, the DTI shall develop and implement standards and procedures for the certification of training institutions, instructors and facilities and the licensing of qualified private service centers and their technicians as prerequisite for performing the testing, servicing, repair and the required adjustment to the vehicle emission system. The DTI shall likewise prescribe regulations requiring the disclosure of odometer reading and the use of tamper-resistant odometers for all motor vehicles including tamper-resistant fuel management systems for the effective implementation of the inspection and maintenance program.

Regulation of All Motor Vehicles and Engines. – Any imported new or locally-assembled new motor vehicle shall not be registered unless it complies with the emission standards set pursuant to this Act, as evidenced by a Certificate of Conformity (COC) issued by the Department.

Any imported new motor vehicle engine shall not be introduced into commerce, old or used unless it complies with emission standards set pursuant to this Act.

Any imported used motor vehicle or rebuilt motor vehicle using new or used engines, major parts or components shall not be registered unless it complies with the emission standards set pursuant to this Act.

In case of non-compliance, the importer or

consignee may be allowed to modify or rebuild the vehicle or engine so that it will be in compliance with applicable emission standards.

No motor vehicle registration (MVR) shall be issued unless such motor vehicle passes the emission testing requirement promulgated in accordance with this Act. Such testing shall be conducted by the DOT or its authorized inspection centers within sixty (60) days prior to date of registration.

The DTI shall promulgate the necessary regulations prescribing the useful life of vehicles and engines including devices in order to ensure that such vehicles will conform to the emissions which they were certified to meet. These regulations shall include provisions for ensuring the durability of emission devices.

Second-Hand Motor Vehicle Engines. – Any imported second-hand motor vehicle engine shall not be introduced into commerce, sold or used unless it complies with emission standards asset pursuant to this Act.

Pollution from Other Mobile Sources. – The Department, in coordination with appropriate agencies, shall formulate and establish the necessary standards for all mobile sources other than those referred to above. The imposition of the appropriate fines and penalties from these sources for any violation of emission standards shall be under the jurisdiction of the DOTC.

Fuels and Additives. – The Department of Energy (DOE) and the Department of Environment and Natural Resources (DENR), in consultation with the Bureau of Product Standards (BPS) of the DTI, the DOTST, the representatives of the fuel and automotive industries, academe and the consumers shall

set the specifications for all types of fuel and fuel-related products, to improve fuel composition for increased efficiency and reduced emissions: Provided, however, that the specifications for all types of fuel and fuel-related products set-forth pursuant to this section shall be adopted by the BPS as Philippine National Standards (PNS).

The DOE, shall also specify the allowable content of additives in all types of fuels and fuel-related products. Such standards shall be based primarily on threshold levels of health and research studies. On the basis of such specifications, the DOE shall likewise limit the content or begin the phase-out of additives in all types of fuels and fuel-related products as it may deem necessary. Other agencies involved in the performance of this function shall be required to coordinate with the DOE and transfer all documents and information necessary for the implementation of this provision.

Consistent with the provisions of the preceding paragraphs under this section, it is declared that:

Not later than eighteen (18) months after the effectivity of this Act, no person shall manufacture, import, sell, supply, offer for sale, dispose, transport or introduce into commerce unleaded premium gasoline fuel which has an anti-knock index (AKI) of not less than 87.5 and Reid vapor pressure of not more than 9 psi. Within six (6) months after the effectivity of this Act, unleaded gasoline fuel shall contain aromatics not to exceed forty-five percent (45%) by volume: Provided, That by year 2003, unleaded gasoline fuel should contain aromatics not to exceed thirty-five percent (35%) by volume and benzene not to exceed two percent (2%) by volume.

Not later than eighteen (18) months after the

effectivity of this Act, no person shall manufacture, import, sell, supply, offer for sale, dispense, transport or introduce into commerce automotive diesel fuel which contains a concentration of sulfur in excess of 0.20% by weight with a Cetane number or index of not less than forty-eight (48): Provided, That by year 2004, content of said sulfur shall be 0.05% by weight; and

Not later than eighteen (18) months after the effectivity of this Act, no person shall manufacture, import, sell, supply, offer for sale, dispense, transport or introduce into commerce industrial diesel fuel which contains a concentration of sulfur in excess of 0.30% (by weight).

Every two (2) years thereafter or as the need arises, the specifications of unleaded gasoline and of automotive and industrial diesel fuels shall be reviewed and revised for further improvement in formulation and in accordance with the provisions of this Act.

The fuels characterized above shall be commercially available. Likewise, the same shall be the reference fuels for emission and testing procedures to be established in accordance with the provisions of this Act.

Any proposed additive shall not in any way increase emissions of any of the regulated gases which shall include, but not limited to carbon monoxide, hydrocarbons, and oxides of nitrogen and particulate matter, in order to be approved and certified by the Department.

Regulation of Fuels and Fuel Additives. – The DOE, in coordination with the Department and the BPS, shall regulate the use of any fuel or fuel additive. No manufacturer, processor or trader of any fuel or additive may import, sell, offer for sale, or introduce into commerce such fuel or additive unless the same has been registered with the

DOE. Prior to registration, the manufacturer, processor or trader shall provide the DOE with the following relevant information:

Product identify and composition to determine the potential health effects of such fuels and additives;
 Description of the analytical technique that can be used to detect and measure the additive in any fuel;
 Recommended range of concentration; and
 Purpose in the use of the fuel and additive.

Misfueling. – In order to prevent the disabling of any emission control device by lead contamination, no person shall introduce or cause or allow the introduction of leaded gasoline into any motor vehicle equipped with a gasoline tank filler inlet and labeled “unleaded gasoline only”. This prohibition shall also apply to any person who knows or should know that such vehicle is designed solely for the use of unleaded gasoline.

Prohibition on Manufacture, Import and Sale of Leaded Gasoline and of Engines and/or Components Requiring Leaded Gasoline. – Effective not later than eighteen (18) months after the enactment of this Act, no person shall manufacture, import, sell, offer for sale, introduce into commerce, convey or otherwise dispose of, in any manner, leaded gasoline and engines and components requiring the use of leaded gasoline.

For existing vehicles, the DTI shall formulate standards and procedures that will allow non-conforming engines to comply with the use of unleaded fuel within five (5) years after the effectivity of this Act.

Violation of Standards for Motor Vehicles.
 – No motor vehicle shall be registered with the

DOTC unless it meets the emission standards set by the Department as provided above.

Any vehicle suspected of violation of emission standards through visual signs, such as, but not limited to smoke-belching, shall be subjected to an emission test by a duly authorized emission testing center. For this purpose, the DOTC or its authorized testing center shall establish a roadside inspection system. Should it be shown that there was no violation of emission standards, the vehicle shall be immediately released. Otherwise, a testing result indicating an exceedance of the emission standards would warrant the continuing custody of the impounded vehicle unless the appropriate penalties are fully paid, and the license plate is surrendered to the DOT pending the fulfillment of the undertaking by the owner/operator of the motor vehicle to make the necessary repairs so as to comply with the standards. A pass shall herein be issued by the DOTC to authorize the use of the motor vehicle within a specified period that shall not exceed seven (7) days for the sole purpose of making the necessary repairs on the said vehicle. The owner/operator of the vehicle shall be required to correct its defects and show proof of compliance to the appropriate pollution control office before the vehicle can be allowed to be driven on any public or subdivision roads.

In addition, the driver and operator of the apprehended vehicle shall undergo a seminar on pollution control and management conducted by the DOTC and shall also suffer the following penalties:

First offense – a fine not to exceed Two thousand pesos (P2,000);

Second offense – a fine not less than Two thousand pesos (P2,000) and not to exceed Four thousand pesos (P4,000); and

Third offense – one (1) year suspension of the Motor Vehicle Registration (MVR) and a fine of not less than Four thousand pesos (P4,000) and not more than Six thousand pesos (P6,000).

Any violation of the provisions with regard to national inspection and maintenance program, including technicians and facility compliance shall be penalized with a fine of not less than Thirty thousand pesos (P30,000) or cancellation of license of both the technician and the center, or both, as determined by the DTI.

All law enforcement officials and deputized agents accredited to conduct vehicle emissions testing and apprehensions shall undergo a mandatory training on emission standards and regulations. For this purpose, the Department, together with the DOTC, DTI, DOST, Philippine National Police (PNP) and other concerned agencies and private entities shall design a training program.

5. India Seminar Continues Fuels Debate

A conference on "Automobile and Fuel Technologies: Solutions For The Environment" was held in New Delhi on July 22-23, 1999 with widespread participation by the vehicle and fuels industries and the government.

The sessions provided a comprehensive overview of the progress to date and the challenges remaining. Steps to reduce vehicle emissions to date include the following:

Unleaded Petrol - As of September 1998, only unleaded gasoline can be sold in Delhi with the result that there has already been a reduction of lead in the air by more than 60%. Industry has also been asked to assure that benzene emissions do not increase and to

constrain the benzene content in unleaded fuel to 5%, the level proposed for leaded gasoline in 1996. By 2000 the level should be reduced to 3%. The Central Pollution Control Board continues to push for a further reduction to 1%. Leaded petrol is still available outside Delhi but Mr. M.S. Ramachandran, the Executive Director of the Oil Coordinating Committee announced that lead will be banned throughout the country by April of 2000.

Sulfur in Diesel Fuel - The sulfur content in diesel supplied to Delhi was reduced to 0.5% in 1996 and to 0.25% in 1997. It is expected that 0.25% sulfur fuel will be sold throughout the country by September 1999. Even this sulfur level is problematic for diesel vehicles equipped with catalytic converters and should be reduced to the level of 0.05% as European standard are introduced.

New Vehicle Standards - As of April 1, 2000 all new cars sold nationally will be required to achieve the Euro 1 norms and will likely be fitted with three way catalysts and fuel injection systems. The Supreme Court recently decreed that from June 1999, only vehicles already complying with the Euro 1 norms could be sold in the national capital area and from April 1 2000, vehicles sold in this region must comply with Euro 2 standards. CNG vehicles are also permitted by the Supreme Court directive.

2-T Oil For 2 Stroke Engines - Premixed oil dispensers have been installed in all the petrol filling stations of Delhi and the sale of loose 2T oil has been banned since December 1998. Further, the Ministry of Environment and Forests has required the use of low smoke 2T oil since April 1, 1999.

Phase Out of Old Vehicles - Since December 1998, commercial vehicles older than 15 years have been phased out.

Steps taken to date have begun to reduce pollution in Delhi although with the exception of ambient lead, the reductions have been very modest. Further, the pollution levels remain among the worst in the world with annual average particulate levels throughout the city exceeding 300 to 500 :g/m³. Therefore additional control measures are under discussion, including:

- Improvement of public transport
- Optimization of traffic flow and improved traffic management
- Upgraded I/M system
- Phase out of gross polluters
- Additional fuel quality improvements including lower benzene and aromatics in gasoline, reformulated gasoline, lower sulfur in diesel fuel
- Euro 4 standards by 2005
- Restrictions on 2 stroke engines, OBD introductions
- Stopping fuel adulteration
- Stage 1 Vapor Recovery systems

6. India Telco Plans To Meet Euro II Standards

India's Tata Engineering and Locomotive Company Ltd (TELCO) announced that all its vehicles would meet Euro II emission norms by April 2000.

"All TELCO vehicles will meet Euro II norms by April 2000," Sujit Gupta, resident director of the Tata group told a news conference.

He said TELCO's Indica passenger car

launched last year will be upgraded to meet Euro II emission norms by the end of 1999.

Indica is already Euro I compliant.

TELCO, which is India's largest truck maker, said the emission technology in all its commercial vehicles will also be improved to meet Euro II norms by April 2000.

Although the court order is only applicable to cars, TELCO said it has decided to go one step further and even raise the emission technology of its commercial vehicles.

TELCO officials did not comment whether there would be a price increase in Indica or the other vehicles as a result of the modifications.

7. India Joins The Billion Club

On Sunday 15 August India was projected to join China as the only other nation on Earth with a billion people. And based on present projections, India looks set to overtake China by 2045.

A report by the Worldwatch Institute, based in Washington DC, says the birth of the billionth Indian "is not a cause for celebration". It says half of India's adults are illiterate, more than half of its children are undernourished, and a third of its people live below the poverty line.

In the last 50 years India has tripled its grain harvest, with new high-yielding crops and a tripling of the irrigated area. Even so, the report says, food production has barely kept up with population. Now the rise in grainland productivity is slowing, as it is in many other countries. And the amount of land available to each Indian is shrinking.

In 1960 there was an average of 0.21 hectares of grainland for every citizen. That

has fallen to 0.1 ha today, and by 2050 is likely to have fallen further, to 0.07 ha.

Food production is also threatened by falling water tables. The International Water Management Institute estimates that India is using its underground water reserves twice as fast as they are being replaced. That is serious in a country where irrigated land produces 55% of the grain harvest, and where most irrigation water comes from underground.

The Worldwatch Institute believes that the worsening environmental problems are likely to have a grim outcome. "If this decrease in water supplies causes food production to drop, death rates are likely to increase."

8. Choking Smog Returns To Southeast Asia

A choking smog from burning rainforests has returned to Southeast Asia, frightening citizens and exposing weak government efforts to tackle the problem as useless. The smog from man-made fires, mainly in Indonesia, revived nightmares of a 1997 environmental disaster that cost Indonesia, Singapore and Malaysia an estimated \$4 billion and caused sickness and breathing problems throughout the region.

As regional nations recover painfully from the Asian economic crisis, a rerun of the smog disaster would send tourists packing at a time when they and their money are most needed.

Satellite pictures show clearly that the fires are started partly by small farmers but largely in plantations where owners slash and burn the rainforest, breaking fire-control laws with impunity.

Only this month, the regional political group ASEAN (the Association of Southeast Asian

Nations) announced a plan to prevent fires, but based only on education and surveillance. Few believe it has any hope of preventing a new disaster.

ASEAN member states, unwilling in an unstable region to criticize their neighbors, have traditionally placed a high value on problem-solving by consensus and have been brought to task for soft-pedaling on pressing problems.

Government attempts to hide or ignore the problem have not helped. Malaysia drew criticism from environmentalists in June when it stopped public release of its Air Pollution Index.

ASEAN environment ministers have brought forward by two months a meeting to tackle the problem. Ministers from the Association of South East Asian Nations (ASEAN) had originally agreed they would next meet in Singapore in October.

Singapore's Pollutant Standards Index (PSI) on July 30 touched 100, a point away from levels considered "unhealthy".

Environment Minister Lee Yock Suan told state TV he hoped greater attention by authorities to the problem would lead to improvements and prevent fires from burning uncontrollably.

"The Indonesian authorities have also given their pledge to disallow open burning to clear land. Unfortunately, at the ground level, the implementation has not been up to expectations," he was quoted as saying.

Indonesian President B.J. Habibie called for action to stop the forest fires and warned of an environmental disaster if the problem was left unchecked.

Indonesian forest fires in 1997 shrouded

Southeast Asia for months with health-threatening smog and seriously hurt the tourism industry.

At their last meeting, ASEAN ministers unveiled an urgent plan to stop the forest fires. The plan included education, fire prevention, fire-fighting and surveillance techniques. The ministers from Brunei, Indonesia, Malaysia and Singapore and officials from other ASEAN countries said a zero-burning policy was now in force region-wide. ASEAN also comprises Laos, Myanmar, the Philippines, Thailand, Vietnam and Cambodia.

9. Big Business Tells Hong Kong To "Clean Up"

Citizens have long cried out against the choking exhaust that has turned the skies above this city of 6.8 million people into a hue of constant grey regardless of the weather. Their calls are now being joined by business leaders who fear financial repercussions from the deteriorating environment of Hong Kong, which ironically means "fragrant harbor" in the local Cantonese dialect in honor of the waters it was built around.

The business community has become progressively concerned and alarmed according to Barrie Cook, chief executive of CKI Materials, a unit of Cheung Kong Infrastructure Holdings. Cook, a Briton who has watched Hong Kong's environment deteriorate from bad to worse during his more than 10 years in the territory, became so irate with lack of policy action on the city's pollutants that he set up an environmental business group. In mid-1998, he helped found the Hong Kong Business Coalition on the Environment, comprised of some 25 foreign and local business chambers, to push for a cleaner Hong Kong.

The underling concern: filthy air could dent the

territory's competitive edge.

Hong Kong's government blames the air pollution problem mostly on diesel-powered vehicles. Smoke from factories and power stations, and pollutants drifting south from mainland China, are also among their concerns.

But the fumes belching from the buses, taxis, vans and trucks that clog the streets of one of the world's most densely populated cities are a daily reminder of the problem.

"Every day, idling luxury cars spew poisonous exhaust fumes while drivers sit inside, reading, eating or sleeping," complained a reader in a recent letter published in the South China Morning Post.

The government appears to be responding to the issue, unveiling plans to have 5,000 taxis run on liquefied petroleum gas by 2000, and putting the entire taxi fleet of 18,000 on the cleaner fuel by the end of 2005.

The sale of leaded petrol has been banned since April.

There are also plans to fine drivers who leave engines of their parked cars running and proposals to close streets in dense districts like Causeway Bay, Tsim Sha Tsui and Mongkok.

But environmentalists say such measures are still not enough.

They were particularly enraged when the government, citing the difficult economic situation, in June scrapped plans to raise the current fine of HK\$450 (US\$60) on smokey, polluting vehicles.

If nothing is done, the business community fears, foreign businesses could start to look

elsewhere for headquarters and investors may think hard about putting in money.

A flurry of recent studies have shown the dire consequences air pollution is inflicting on the territory. The government, quantifying the impact of air pollution for the first time, estimated its cost - in terms of medical care and loss of productivity - at HK\$3.8 billion (US\$490 million) a year.

The World Health Organization has also said Hong Kong's current air quality could lead to 2,000 premature deaths a year.

Environmental scientists at the University of Hong Kong, citing a two-year study, have even predicted Hong Kong would be "unliveable" in 10 to 15 years should the present air quality be allowed to deteriorate.

The business coalition, representing the most direct intervention by the private sector in the environment debate, recently has had access to top government officials. And Cook said the coalition has been encouraged by the response so far.

In recent months, Chief Executive Tung Chee-hwa and the convenor of his top advisory council Leung Chun-ying have both said they would make cleaning up the environment a priority.

Although there is no concrete evidence that people are leaving Hong Kong because of bad air, the issue is becoming widely discussed in public and at home, especially as government warnings persuading the old and those with respiratory problems to stay indoors become more frequent.

10. Honda Seeks To Improve Environmental Record As A Manufacturer

Honda Motor Co. will strengthen environmental protection measures in distribution and sales, company sources have announced.

The automaker has begun sharing its vehicle-delivery vessels with Mazda Motor Corp. and may begin shipping cars by train.

Honda aims to cut carbon-dioxide emissions during vehicle delivery in the current business year by 300 tons.

Working with affiliated dealers in five areas of Japan, Honda has already started testing an eco-friendly system to treat scrapped vehicles. The firm will use the results of the experiments to compile a manual which will be distributed to all affiliated dealers.

The manual is expected to recommend that each dealership appoint an employee specifically to deal with environmental protection, and will detail proposed duties for such a position as well as offer guidance on administering the disposal of scrapped cars.

Honda also hopes at least three of its dealers will obtain ISO14001 environmental protection certification by the end of March 2000, and will help dealers undergo the certification process.

The automaker is leading its rivals in promoting environmentally friendly manufacturing. For instance, it already targets zero levels of waste discharge at its domestic plants by the end of March 2002.

11. South Korean Car Sales Way Up

Sales by South Korea's three major car makers increased strongly during the first seven months of this year, helped by recovering consumer demand at home, company officials announced.

Hyundai Motor Co., South Korea's largest car maker, sold 307,351 vehicles in South Korea between January and July, a 69 percent increase from the same period last year. Total sales, including exports, increased 45.6 percent to 709,246 cars during the same period.

Daewoo Motors Co., the No. 2 automaker, sold 179,392 cars domestically, up 37 percent from last year. Total sales reached 518,584 cars, up 15.5 percent.

Meanwhile, Kia Motors Corp. sold 163,331 cars at home during the first seven months of 1999, up 87 percent. Total sales reached 424,516 cars, an increase of 52.8 percent.

South Korean consumers tightened their belts last year amid a serious economic recession, but began to spend money again this year as the economy showed signs of a recovery.

The Korea Automotive Research Institute, a private research center, predicted that domestic sales will rise to 1.13 million cars this year from 780,000 last year. In 1997, 1.5 million cars were sold.

12. Tokyo Municipal Government Wants To Phase Out Diesels

Charging that diesel-powered vehicles contribute too much to air pollution in Tokyo, the government of that prefecture announced a new strategy August 27 to discourage the use of those vehicles. The No Diesel Campaign, which took effect the same day, will seek measures to discourage the sale of diesel autos and make the use of alternatives, where available, obligatory. It will also encourage the development of emission-cleaning systems, seek to overhaul a tax structure that makes diesel fuel cheaper than gasoline, and try to move up dates for new emissions standards. The capital's

government claims that while diesel vehicles account for only 20% of the distance driven in the area, they account for 70% of the nitrogen oxides from automobiles and nearly all the suspended particulate matter.

The "Diesel NO Strategy" contains the following five proposals about diesel vehicles.

- Proposal 1: One will not use, buy, or sell diesel vehicles in Tokyo.
- Proposal 2: Diesel vehicles for commercial use which can be replaced by gasoline vehicles should be substituted by them.
- Proposal 3: Exhaust emission aftertreatment control systems must be developed quickly, and when available installation to existing diesel vehicles will be obligatory.
- Proposal 4: The current tax system that taxes diesel fuel less than gasoline must be changed.
- Proposal 5: Future new diesel exhaust emission controls which are planned for 2007 should be introduced earlier.

These are just proposals, and nothing is final at this stage. Also, Japanese prefectures or the Tokyo Metropolitan Government do not usually have strong power to make unilateral Acts.

This action followed the election of a new mayor of Tokyo this year and the new government has new ideas for tackling the pollution problem.

13. Sri Lanka Having Difficulties

Sri Lanka's motor trade bounced back this year, after going through a bad patch but many business people feel that they could be doing much better if there was more planning

on policies for the trade, on a national scale.

Sales of new cars have increased this year, especially after Business Turnover Tax (BTT) was replaced by Goods and Services Tax (GST), resulting in car prices coming down. But at the same time, the number of new commercial vehicles taking to the roads is not very high, mainly due to unfavorable economic conditions.

The slow-down in the construction industry, in particular, coming on the heels of a boom in that sector, in the early and mid nineties, has meant that there is less demand for trucks, lorries, and other heavy commercial vehicles.

A. Used Vehicles

Reconditioned or used vehicles, which account for nearly 80 per cent of vehicle imports into the country, are not selling as rapidly as they once did, a phenomena attributed again, to the slump in the economy this year. The government's cost-cutting program - since 1995 - in ministries and departments has had a marked effect on the motor trade, with fewer government tenders for vehicles resulting in less business for agents of popular vehicles.

Franchise-holders of international motor companies, who sell only new vehicles in Sri Lanka, feel that importers of used vehicles are being granted too many concessions, especially in terms of customs duty. The lack of proper standards, to test the roadworthiness and suitability of used vehicles, is also a major issue. With customs duty still keeping new vehicles out of the reach of middle-class Sri Lankans, the only option for most people is to buy a reconditioned vehicle - which is, after all, cheaper than a new one.

In the case of motor cars, the gap is

narrowing, because GST has brought down the price of new cars. In the first eight months of this year, 1,817 reconditioned cars were imported, compared to 1,205 new cars. Right now, cars up to three years old, and commercial vehicles up to five years old, can be imported as reconditioned vehicles, at lower duty rates. Traders of new vehicles say this is an unfair edge, and they are lobbying for the age limit to be reduced to one year for cars, and three years for commercial vehicles.

Under the present duty structure, this will mean that importers would have to pay higher duties, resulting in reconditioned cars being more expensive, albeit of a higher standard.

B. Customs Duty and Other Taxes

The Ceylon Motor Traders Association (CMTA) is lobbying for reductions in customs duties, to offset this problem. At the moment, the highest duty is for diesel cars and station wagons, and jeeps, all of which have a total of 177 per cent of taxes levied on them.

At the lower end of the taxation scale are lorries and trucks over 20 tonnes, forklifts, and lorry and truck chassis fitted with engines and cabs, at 27 per cent. The lowest tax is on ambulances, which attract 23 per cent in taxes. Buses come in at 37 per cent, although the government grants concessions for them, regularly.

Prices of heavy vehicles like lorries and trucks, which were exempt from BTT, went up after the imposition of GST, in April.

Motorcycles were exempt from BTT, but are now liable for GST, which has resulted in a general increase in their prices, too.

C. Local Assembly

After Mazda, no company has succeeded in assembling automobiles in Sri Lanka. Several factors come into play, here. One is that Sri Lanka is too small a market for mass-scale, assembly-line production of cars. The country is not in a favorable position to export either, for as one motor trader put it, "the world is not quite ready to accept a car from Sri Lanka".

India, which opened up its markets long after Sri Lanka did, now has eight major companies producing vehicles.

"We missed the bus, and now it's too late," says One trader. Other industry officials feel that there may be a future in manufacturing car parts instead, exporting them to countries like India, under certain trade agreements.

The practice of knocking down vehicles - that is, buying vehicles abroad, dismantling them, bringing them into the country part-by-part, and then reassembling them - has come under fire from the CMTA, which considers it an unsafe practice.

This is especially common in luxury vehicles, where people want to avoid high customs duties - and, they make a fast buck, by selling the vehicles singly, by advertising them as "unregistered" vehicles, at prices lower than those quoted by the dealers.

D. Lack of Government Support

The lack of government support for local industry is telling. Local traders would rather not venture into the business of assembly, since the government could turn to cheaper imports. But, government officials point to past records of failed Sri Lankan vehicle-assembly firms, and say that it is difficult to subsidize such a small industry, at huge cost to the public, and that this can't be

done at a time when the government is strapped for cash, due to the security situation. As a result, assembling of vehicles is restricted to the semi-assembly of three-wheelers, lorries, and buses.

E. Spare Parts Trade

The influx of spurious spare parts from Taiwan and other East Asian countries, for Japanese cars in particular, is a cause of great frustration for reputable motor dealers, who feel they are being under-cut by cheap goods. In many cases, spare-part dealers import Taiwanese parts, paying low customs duty, then flog them to gullible consumers, as "original" Japanese parts.

Automotive-industry entrepreneurs who are keen to assemble vehicles in Sri Lanka complain that they don't get sufficient backing from the government, with tenders for buses and other vehicles being given to foreign concerns.

F. Fuels

The issue of unleaded fuel is a thorn in the side for the CMTA. Unleaded fuel was introduced to the country by the Ceylon Petroleum Corporation recently, and made available to consumers via 18 fuel stations - seven in Colombo, and 11 in the outstations. In July, many of the outstation dealers decided to shut down their pumps, due to poor business. This was mainly due to unleaded petrol being priced higher than the regular 2-star petrol. Motorists find it difficult to use unleaded petrol, since there aren't adequate pumps outside Colombo. In fact, more than 90 per cent of unleaded petrol sales are in Colombo.

The CMTA says that the government has made a mockery of the introduction of unleaded petrol to the country, and believes

the Ceylon Petroleum Corporation should place greater emphasis on this product. Among the recommendations of the CMTA, are to reduce the price of unleaded petrol to 45 rupees, and conduct advertising campaigns to popularize the product.

14. Honda to Introduce Hybrid-powered Car in November

Honda Motor Co Ltd has announced that it will introduce its first hybrid-powered vehicle in November. The new vehicle, named Insight, will retail for 2.1 million yen in Japan and the company plans to sell 300 of the new cars per month.

The two-seater, which combines a gasoline engine with an electric motor, achieves a fuel-efficiency of 35 kilometers per liter, Honda said.

Starting from the end of this year, the new car will be gradually introduced in overseas markets, including the United States, Europe and Asia outside of Japan, it said.

Honda's rival, Toyota Motor Corp launched its hybrid-powered vehicle, Prius, in late 1997.

Honda will boost its global vehicle output capacity to 2.85 million units in 2003/04, compared with planned 2.45 million units for 1999/2000. Domestic production capacity is expected to be unchanged from the current level at 1.25 million units.

In May, the company said it would invest \$400 million to build a new assembly and engine plant by 2002 in Alabama in the United States to meet strong demand for Odyssey minivans and sport utility vehicles.

SOUTH AMERICA

15. GM Delays Argentina Investment

Plans

General Motors Corp.'s Argentine unit has delayed plans to complete its \$1.1 billion investment plans in the country, due to a recession here and a steep fall in car demand in Brazil, the president of the car maker's Argentine unit has announced.

"Plans to invest \$1.1 billion in Argentina over a decade are being delayed for obvious reasons," General Motors Argentina's President Basil Drossos said. He was referring to Argentina's worst recession in a decade and a declining demand from giant neighbor Brazil, the main client for Argentine car exports.

Of the \$1.1 billion investment plan, he said over \$600 million had already been sunk into building two plants in Argentina over the last five years.

Drossos was speaking at the domestic sales launch of the imported compact sport model Chevrolet Corsa Tigrá, made at GM's Saragossa plant in Spain.

GM has a plant in Rosario, 185 miles (300 km) northwest of Buenos Aires, and another in Cordoba, 430 miles (700 km) northwest of Buenos Aires. In Rosario GM makes the compact Chevrolet Corsa, while in Cordoba it makes the Chevrolet C/D 20 and Chevrolet Silverado pick-up trucks and the Grand Blazer sport utility.

Rosario has 1,000 staff and started production in 1997 while Cordoba has 226 staff and started production in 1994.

Drossos said that GM has been examining the possibility of closing the Cordoba plant ever since Rosario was built but that no decision had been taken. If Cordoba was shut down, all its staff would be relocated to GM's

other Argentine facilities, he added.

He said Rosario was making 17 cars per hour, slightly below its full capacity of 20 cars per hour, while Cordoba was making 3.5 pick-ups per hour versus a capacity of 5.5 units per hour.

GM accounted for almost 11 percent of the 119,000 motor vehicles made in Argentina in

the first half of the year.

All Argentine car makers have been suffering badly from recession at home and lower demand from Brazil, which has long absorbed about 90 percent of their exports. Argentine car sales to Brazil have fallen by about 50 percent in recent months.

16. Comparison of California LEV II and Tier 2 NPRM Vehicles Programs

TOPIC	California LEV II	Tier 2 NPRM
Exhaust Emission Standards		
Truck categories	<ul style="list-style-type: none"> • Retains LDT1 category equivalent to EPA LDT1s • Establishes new LDT2 category equivalent to EPA LDT2, LDT3, and LDT4 categories combined • Medium-duty vehicle (MDV) below 8,500 lbs GVW are part of new LDT2 category beginning in 2007. In 2007, MDV becomes a single category containing vehicles between 8,500 and 14,000 lbs GVW 	<ul style="list-style-type: none"> • Retains LDT categories (LDT1 - LDT4) • LLDTs = LDT1s and LDT2s = below 6,000 lbs GVW • HLDTs = LDT3s and LDT4s = 6,000 to 8,500 lbs GVW • Does not include vehicles above 8,500 lbs GVW
Light-duty trucks (<8500 lbs GVW)	<ul style="list-style-type: none"> • LDTs must meet same standards as passenger cars except: <ul style="list-style-type: none"> - 4% of LDT2s sold may certify to marginally higher NOx standard (0.10 vs. 0.07 @ 120k miles), if payload \$2500 lbs. 	<ul style="list-style-type: none"> • LDTs must meet same standards as passenger cars • HLDTs phased-in later (see below)
Corporate Average Standard	Intermediate (50,000 mile) NMOG standard	Full-life (120,000 mile) NOx standard

TOPIC	California LEV II	Tier 2 NPRM									
<p>NMOG</p>	<ul style="list-style-type: none"> Fleet average standard declines from 2004-2010 LEV I vehicles included in average until phased out in 2007 NMOG average based on 50,000 mile standards: <p style="text-align: center;">NMOG Fleet Average (g/mi) (w/incremental decline each year)</p> <table border="0" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>2004</u></th> <th style="text-align: center;"><u>2010+</u></th> </tr> </thead> <tbody> <tr> <td>PCs and LDT1s</td> <td style="text-align: center;">0.053</td> <td style="text-align: center;">0.035</td> </tr> <tr> <td>LDT2s</td> <td style="text-align: center;">0.085</td> <td style="text-align: center;">0.043</td> </tr> </tbody> </table> <ul style="list-style-type: none"> LEV II has 4 bins (including ZEV) available for averaging full-life standards for bins = 0.01, 0.055, 0.09 g/mile LDT2 fleet average is higher for two reasons: <ul style="list-style-type: none"> to allow longer phase-in for ULEVs and SULEVs ZEVs are required only for PCs and LDT1s 		<u>2004</u>	<u>2010+</u>	PCs and LDT1s	0.053	0.035	LDT2s	0.085	0.043	<ul style="list-style-type: none"> Fleet average on NOx rather than NMOG NMOG varies by bin, average of about 0.09 g/mile NMOG standards for bins range from 0.00 to 0.125 g/mile intermediate standard (50k) vary by bin, average about 0.075 g/mile
	<u>2004</u>	<u>2010+</u>									
PCs and LDT1s	0.053	0.035									
LDT2s	0.085	0.043									
<p>NOx</p>	<ul style="list-style-type: none"> standard of 0.07 g/mi for all LDVs and LDTs no bins above 0.07 g/mile except for small volume of LDT2s (see above) Intermediate standard (50k) of 0.05 g/mile 	<ul style="list-style-type: none"> Tier 2 LDVs and LDTs corporate average full life standard of 0.07 g/mile manufacturers choose among bins ranging from 0.0 up to 0.20 g/mile intermediate standard (50k) varies by bin, averages about 0.05 g/mile Vehicles not meeting Tier 2 standards during phase-in must meet interim standards (see below) 									
<p>PM</p>	<ul style="list-style-type: none"> 0.01 g/mi @ 120,000 miles for all bins 	<ul style="list-style-type: none"> varies by bin, average of about 0.01 g/mi @ 120,000 miles bins range from 0.00 to 0.02 g/mile 									

TOPIC	California LEV II	Tier 2 NPRM
<p>"Bins" (Sets of emission standards to which a vehicle must be certified).</p>	<ul style="list-style-type: none"> • 3 main "bins" (LEV, ULEV, SULEV) and ZEV. (See <i>Table 1 attached</i>). • Board did not approve the proposed TLEV bin • Introduced SULEV (Super-Ultra LEV) as a new certification category which will likely be used for alternative fuel, gasoline, hybrid electric, and other vehicles. 	<ul style="list-style-type: none"> • 7 bins, 3 above standard and 3 below (see <i>Table 2 and 3 attached</i>) • includes all LEV II bins
<p>Phase-In of Emission Standards</p>	<ul style="list-style-type: none"> • LDVs and LDT1s: 2004-2007 (25/50/75/100%) • LDT2s grouped separately for purposes of phase-in <ul style="list-style-type: none"> - Below 6,000 lbs phased in 2004-2007 (25/50/75/100%) - 6,000-8,500 lbs (considered MDVs under LEV I) phased in 100% in 2007 • Manufacturers may choose alternative phase-in schedule 	<ul style="list-style-type: none"> • LDVs/LLDTs: 2004-2007 (25/50/75/100%) • HLDTs: 2008-2009 (50/100%) • Manufacturers may choose alternative phase-in schedule
<p>Interim Standards (for vehicles not yet phased in)</p>	<p>LEV I</p>	<ul style="list-style-type: none"> • NLEV for LDVs/LDT1s, • LDT2s must meet NLEV LDV/LDT1 standards • HLDTs <ul style="list-style-type: none"> - NOx average of 0.2 g/mile, not to exceed 0.6 g/mile - phased in 2004-2007, 25/50/75/100% - higher bins available compared to Tier 2
<p>Useful Life</p>	<ul style="list-style-type: none"> • Increased from 100,000 to 120,000 miles for LDVs and LLDTs 	<ul style="list-style-type: none"> • Increased from 100,000 to 120,000 miles for LDVs and LLDTs
<p>Credits</p>	<p>NMOG credits can be generated by:</p> <ul style="list-style-type: none"> • Over achieving declining NMOG average • Certifying to zero-fuel evaporative emissions standard • Certifying to optional 150,000 mile exhaust emissions standard (see below) • Use of ozone reduction technologies (e.g., catalytic coating on radiators which reduces ambient ozone) 	<p>NOx credits can be generated by:</p> <ul style="list-style-type: none"> • Achieving NOx average below 0.07 g/mile • Early banking allowed starting in 2001 • Certifying to optional 150,000 mile exhaust emissions standard (see below)

TOPIC	California LEV II	Tier 2 NPRM
Credit Deficits	<ul style="list-style-type: none"> • NMOG deficit (average above NMOG requirement not covered by credits) allowed during phase-in period • must be eliminated by 2007 	<ul style="list-style-type: none"> • NOx deficit (average above 0.07 g/mile not covered by credits) can be carried forward one year • Cannot have deficit for two years in a row
Optional 150,000 Mile Standard	<ul style="list-style-type: none"> • Manufacturers that certify to this useful life receive additional NMOG credits toward compliance with fleet average, and must: <ul style="list-style-type: none"> - Certify vehicle to applicable 120k mile standard at 150k miles - Increase emissions warranty (for high cost parts) from 7 yrs/70k miles to 8yr/100k miles - Extend high mileage in-use compliance testing from 75k miles to 105k miles 	<ul style="list-style-type: none"> • Manufacturers that certify to this useful life receive additional NOx credits toward compliance with fleet average, and must: <ul style="list-style-type: none"> - Certify vehicle to applicable 120k mile standard at 150k miles - Extend high mileage in-use compliance testing from 90k miles to 105k miles
In-use standards (for vehicles certified during phase-in)	<ul style="list-style-type: none"> • Relaxed in-use standards, primarily for NOx • For LEV II vehicles certified in 2004 - 2006 • For first two years of sales of the test group 	<ul style="list-style-type: none"> • Relaxed in-use standards for most stringent bins, primarily for NOx • For Tier 2 vehicles certified in 2004-2007 for LDVs and LLDTs and 2008-2009 for HLDTs • For first two years of sales of the test group
Medium-duty vehicles (\$8500 lbs GVW)	<ul style="list-style-type: none"> • Most SUVs and pick-up trucks fall into LDT2 category, but largest SUVs pick-ups, and vans are MDVs • Standards substantially equivalent in stringency to light-trucks, but numerically higher (see Table 1) • Tested at ALVW (½ payload) • No declining NMOG average, require 60 percent ULEV and 40 percent LEV sales split beginning in 2004 • LEV II Phase-in: 100% by 2007 MY • Useful life = 120,000 miles with optional 150,000 mile useful life available (credits used in LEV/ULEV sales split) 	<ul style="list-style-type: none"> • Not included in Tier 2 • Part of heavy-duty engine/vehicle program

TOPIC	California LEV II	Tier 2 NPRM
SFTP standards	No changes	<ul style="list-style-type: none">• Full and intermediate (50k) useful life standards derived from LEV 4,000 mile standards• Standards differ by vehicle category and would apply to diesels

TOPIC	California LEV II	Tier 2 NPRM
Evaporative Emissions Standards		
Evap Standards	<ul style="list-style-type: none"> • Evap emissions = 50% of motor vehicle HC emissions in CA • New standards represent 80% reduction from current standards • Reduced 3-day and 2-day diurnal + hot soak emission standards for all vehicle categories. Running loss standards remain same. • 0.50 grams HC/test for PC's (3-day diurnal + hot soak). Standard varies by vehicle category. (See Table 4 attached). 	<ul style="list-style-type: none"> • 50%+ reduction in the diurnal plus hot soak standards • 3 day diurnal plus hot soak standards <ul style="list-style-type: none"> - 0.95 g/test for LDVs and LLDTs - 1.2 g/test for HLDTs • 2 day diurnal plus hot soak <ul style="list-style-type: none"> - 1.2 g/test for LDVs and LLDTs - 1.5 g/test for HLDTs
Useful Life	Increased to 150,000 miles (or 15 years, whichever occurs first) for all vehicles, because little deterioration expected in first 10 years of vehicle's life. In CA, 20% of VMT is driven from vehicles that have accumulated 100k-150k miles.	Same as exhaust standards
Phase-In	<ul style="list-style-type: none"> • 3 years (2004-2006) • 40/80/100% 	<ul style="list-style-type: none"> • Same as exhaust standards • Can be different sets of vehicles meeting exhaust and evap requirements
Test Procedure	Improved quality control procedures to ensure that measurements are accurate at the new standard levels	Certification durability testing must be conducted using worst case fuel for alcohol content (currently 10 percent)
On-Board Diagnostics		
Leak Detection for Evaporative Systems	Lowered detectable leak size from 0.040 to 0.020 inches (orifice size)	No change to OBD
Phase-In	<ul style="list-style-type: none"> • 4 years (2000-2003) • 20/40/70/100% 	

TOPIC	California LEV II	Tier 2 NPRM
CAP 2000		
Program Requirements (streamlined certification with enhanced in-use compliance)	Harmonized with EPA program, with minor exceptions for CA-only programs	No change to program structure
Other		
ZEV	<ul style="list-style-type: none"> • Additional flexibility to broaden scope of vehicles that can qualify as meeting some portion of ZEV requirement • Changes to certification test procedure 	<ul style="list-style-type: none"> • ZEV bin • California test procedures incorporated by reference
Smog Index	Update to correspond with LEV II changes and to make more consumer-friendly. Add fleet average smog index to allow comparison of given vehicle to entire fleet.	N/A
Hybrid Electric Vehicle (HEV) Test Procedure	Changes to accommodate the diverse HEV operating strategies currently being developed by industry	<ul style="list-style-type: none"> • Manufacturers may propose a contribution factor to EPA for purposes of NOx averaging • California test procedures incorporated by reference
NMOG Test Procedure	Updates laboratory test procedures and suggested operating parameters to provide more accurate and reliable data	No change
Technical Amendments to Standards	<p>- Highlights include:</p> <ul style="list-style-type: none"> - Tier I standards no longer apply after 2003 MY for LDVs and MDVs - 50° multiplier for SULEVs = 2.0 (same as for LEVs and ULEVs) - SFTP standard for SULEVs same as for LEVs and ULEVs - Cold temperature CO standard for SULEVs = 10.0 g/mi 	

Table 1

California LEV II Exhaust Emission Standards							
Vehicle Type	Mileage for Compliance	Vehicle Emission Category ("Bin")	NMOG (g/mi)	CO (g/mi)	NOx (g/mi)	Formaldehyde (mg/mi)	Diesel Particulate (g/mi)
All PCs and LDTs <8500 lbs. GVW ²	50,000	LEV	0.075	3.4	0.05	15	N/A
		LEV ³ (option)	0.075	3.4	0.07	15	N/A
		ULEV	0.040	1.7	0.05	8	N/A
	120,000	LEV	0.090	4.2	0.07	18	0.01
		LEV ² (option)	0.090	4.2	0.10	18	0.01
		ULEV	0.055	2.1	0.07	11	0.01
		SULEV	0.010	1.0	0.02	4	0.01
	150,000 (Optional)	LEV	Same numerical emission standards as 120,000 miles				
		LEV ² (option)					
		ULEV					
		SULEV					

²Vehicles in this category are tested at their loaded vehicle weight (curb weight plus 300 lbs).

³This optional LEV standard applies to up to 4% of a manufacturer's LDT2 fleet with a maximum base payload in excess of 2500 lbs.

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MDVs 8500-10,000 lbs. GVWR ⁴	120,000	LEV	0.195	6.4	0.2	32	0.12
		ULEV	0.143	6.4	0.2	16	0.06
		SULEV	0.100	3.2	0.1	8	0.06
MDVs 10,001-14,000 lbs. GVWR ³	120,000	LEV	0.230	7.3	0.4	40	0.12
		ULEV	0.167	7.3	0.4	21	0.06
		SULEV	0.117	3.7	0.2	10	0.06

⁴Vehicles in this category are tested at their adjusted loaded vehicle weight (curb weight plus ½ payload). Optional 150,000 mile useful life available for MDVs, with credits used to satisfy LEV/ULEV vehicle sales requirements.

Table 2
Proposed Tier 2 Light-Duty Full Useful Life (120,000 mile) Exhaust Emission Standards
(grams per mile)

Bin Number	NOx	NMOG	CO	HCHO	PM
7	0.20	0.125	4.2	0.018	0.02
6	0.15	0.090	4.2	0.018	0.02
5	0.07	0.090	4.2	0.018	0.01
4	0.07	0.055	2.1	0.011	0.01
3	0.04	0.070	2.1	0.011	0.01
2	0.02	0.010	2.1	0.004	0.01
1	0.00	0.000	0.0	0.000	0.00

Table 3
Light-Duty Intermediate Useful Life (50,000 mile) Exhaust Emission Standards
(grams per mile)

Bin Number	NOx	NMOG	CO	HCHO	PM
7	0.14	0.100	3.4	0.015	----
6	0.11	0.075	3.4	0.015	----
5	0.05	0.075	3.4	0.015	----
4	0.05	0.040	1.7	0.008	----

Table 4

California Evaporative Emission Standards			
Vehicle Class	Hydrocarbon Standards		
	3-Day Diurnal + Hot Soak (grams per test)	2-Day Diurnal + Hot Soak (grams per test)	Running Loss* (g/mi)
Passenger Cars	0.50	0.65	0.05
Light-Duty Trucks (#8500 lbs. GVWR)			
#6000 lbs. GVWR	0.65	0.85	0.05
6,001-8500 lbs. GVWR	0.90	1.15	0.05
Medium-Duty Vehicles (8501-14,000 lbs. GVWR)	1.00	1.25	0.05
Heavy-Duty Vehicles (> 14,000 lbs. GVWR)	1.00	1.25	0.05

* The running loss standards were not changed from CA's existing requirements.

Types of Evaporative Emissions:

“Diurnal” emissions are caused by daily ambient temperature changes and occur when a vehicle is parked.

“Hot-soak” emissions are due to high temperatures under the hood, and occur immediately after a fully warmed-up vehicle is stationary with the engine turned off.

“Running loss” emissions occur when a vehicle is driven and can originate from numerous sources within the fuel system and from fuel vapor overflow of the on-board carbon canister.

Purpose of Evap Tests:

- 1) 3-day diurnal + hot soak: ensures control of running loss emissions, high-temperature hot soak emissions, and 3 days of diurnal emissions.
- 2) 2-day diurnal + hot soak: verifies that the carbon canister is well purged during vehicle operation.
- 3) Running loss: measures emissions that occur when vehicle is driven.