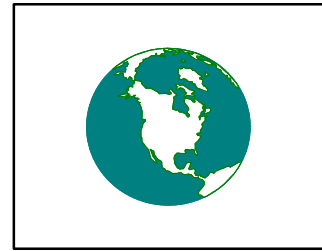


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Table of Contents

1.	Peugeot to Launch Diesel-Based Hybrid Cars.....	3
2.	British Issue Report on Links Between Pollution Controls, Climate Change.....	4
3.	Stockholm Residents Face New Congestion Charge.....	5
4.	Sweden Raises Proposed Air Ticket Tax.....	6
5.	European Airline Industry Attacks Swedish Airline Ticket Tax Proposal.....	6
6.	Lorries Face £200 Pollution Charge In London.....	7
7.	Switzerland Proposes Plan To Control Particulate Pollution.....	8
8.	Belgian Survey Predicts Fall in Vehicle Emissions.....	8
9.	Denmark Considering Particle Filters for Fireplaces, Wood Stoves.....	9
10.	Paris Air Quality Improves But Still Fails To Meet EU Targets	9
11.	EU Proposes Strategy for Urban Environment	9
12.	Spain To Penalize Most Polluting Vehicles	10
13.	British Report Sees Compliance With Kyoto Despite Slight GHG Increase	10
14.	Petrom Invests \$50M in Romanian Refinery.....	11
15.	Portugal Approves Laws Intended To Cut Emissions, Boost Efficiency.....	11
16.	France Launches Review Of Tax Policies Following OECD Report.....	13
17.	Italy to Allow Power Plants To Temporarily Exceed Emissions Limits.....	13
18.	Report Sees More Certainty, Rising Costs for Non-Action on Warming	14
19.	French Renewable Energy Use Rises in 2005.....	14
20.	U.K. Study Considers Steps To Reduce Emissions, Develop Nuclear Power.....	14
21.	Switzerland Establishes New Environmental Agency.....	15
22.	Finland May Ease Tax Burden on Biodiesel Producers	16
23.	Mexico Finalizes Low Sulfur Fuel Specifications.....	16
24.	Insurance Company Offers Hybrid Car Owners 10 Percent Discount	17
25.	Honda Big Winner With Vehicle Tax Incentives Beginning Jan. 1	17
26.	Canadian Report Shows Rise in Emissions, Worse Air Quality	18
27.	U.S. Greenhouse Gases Up 2 Percent In 2004, Largest Increase Since 1999.....	19
28.	EIA Projects Growth in Hybrids and Diesels in New Energy Outlook.....	19
29.	6 Ex-Chiefs of E.P.A. Urge Action on Greenhouse Gases.....	21
30.	NASCAR Plans to Switch to Unleaded Fuel in '08.....	21
31.	DaimlerChrysler to Feature Technology for the "Cleanest" Diesel in the World	21
32.	Demand For Diesel, Hybrid-Electric Engines Growing.....	22
33.	Diesel Cars Highlighted At Auto Show	23
34.	Connecticut DEP Presents Diesel Emission Reduction Strategy.....	24
35.	IRS and Treasury Provide Guidance to Hybrid Manufacturers.....	25

36.	EPA Criticized For Neglecting Its Advisory Panel On Soot Standards.....	25
37.	EPA Suggests 15-Year Compliance Window With New Soot Limits.....	26
38.	EPA May Allow 3 PPM 'Adjustment Factor' In Ultra-Low Sulfur Diesel.....	27
39.	Refinery Shutdowns May Complicate Ultra-Low Sulfur Diesel Transition.....	27
40.	Bodman Cites Cellulosic Ethanol Breakthrough In Biomass Budget Hike.....	28
41.	California Air Board Targets Trucks Crossing Border From Mexico.....	30
42.	U.S.-Mexico Board OKs Report On Air Quality, Protection of Cultural Sites.....	31
43.	U.S. Development Program Revises Environmental Guidelines for Projects.....	32
44.	NAFTA Agency Ties Asthma to Pollutants on Children in North America.....	33
45.	Large Canadian Industrial Firms Moving to Control Carbon Emissions.....	34
46.	Two U.S. Senators Release White Paper On Proposal to Limit GHG Emissions.....	35
47.	Mexican Industry Takes Voluntary Action Against Climate Change.....	36
48.	ARB Applauds Diesel Identification Ruling.....	37
49.	UPS Expands 'Green Fleet' with 50 Hybrid Electric Vehicles.....	38
50.	EPA to Cut Benzene and Other Toxic Emissions.....	39
51.	Huancayo, Peru Issues Clean Air Plan the Officials Hail as 'Model'.....	40
52.	Tightened Vehicle Emission Standards Take Effect In Hong Kong.....	40
53.	Singapore Introduces Tax Incentives To Encourage Use of Cleaner Vehicles.....	41
54.	2005 Not A Year Of Clean, Healthy Air In Jakarta.....	42
55.	China Welcomes Small Cars Back to its Streets.....	42
56.	New Taiwan EPA Initiative Aims To Cut Auto Emission Levels In 3 Cities.....	43
57.	Six Asia-Pacific Nations Join in Climate Change Partnership.....	44
58.	Shanghai Takes Step To Clean Up City Center.....	46
59.	Beijing Experimental Buses Aim to Cut Smog, Fuel.....	47
60.	China Suffers Increasing Air Pollution.....	47
61.	China Approves Two PetroChina Pipe Lines.....	48
62.	China Building Coal-to-DME Plant.....	48
63.	New Zealand Reversal On Carbon Tax; Alternatives to Be Considered.....	49
64.	New Zealand Proposes Changes To Vehicle Emissions Requirements.....	50
65.	Air Pollution Rises in Smaller Korean Cities.....	51
66.	Guangzhou Plans New Vehicle Emission Rule.....	52
67.	Air Quality Improving In Hong Kong But Problems Remain.....	53
68.	Bangladesh Government Adopts Plan For Reducing Air Pollution.....	54
69.	South Korea to Follow European Model In Regulating Waste Autos.....	55
70.	China Announces Major Plan to Combat Pollution.....	56
71.	Fake Emissions Decal On The Streets of Shanghai.....	57
72.	Australian Lead Smelter Campaigns To Cut Blood-Lead Levels in Children.....	58
73.	Vehicle Related Air Pollution is Serious in Sri Lanka.....	58
74.	Philippines Eliminates Import Duties On Components of Cleaner Automobiles.....	60
75.	Severe Air Pollution Across Israel.....	61
76.	Study Finds No Safe Level for Ozone.....	61
77.	Arctic Warming, Impacts Accelerating, Threaten Forests, Water, Scientists Say.....	62
78.	Ice Melt in Northern, Southern Hemispheres Contributing to Sea Level Rise.....	64
79.	WMO Says 2005 Second-Warmest on Record; Hansen Says Warmest.....	65
80.	Pakistani, South African, Norwegian Candidates for Top U.N. Environment Job.....	67
81.	Diesel Exhaust May Impair Blood Vessel Function.....	67
82.	Motorbikes '16 Times Worse Than Cars For Pollution'.....	68
83.	New Zealand Ranked Best in World By U.S. Study of Progress on Environment.....	68
84.	OECD Hails U.S. Progress on Air Pollution, Sees Room For Improvement.....	69
85.	Report Says World Resources Insufficient To Satisfy Growing Needs.....	70
86.	Rising Global Population, Greenhouse Gases Predicted by 2050.....	71

EUROPE

1. Peugeot to Launch Diesel-Based Hybrid Cars

PSA Peugeot Citroen has unveiled two demonstrator models for diesel-based hybrid cars, which seek to cut emissions and reduce fuel consumption, the carmaker expects to be on the market from 2010. France's second-biggest carmaker showed off a Peugeot 307 and a Citroen C4 demonstration car with a hybrid diesel system on Jan. 31.

The announcement coincides with a call by French President Jacques Chirac to develop such cars within 10 years. Chirac called for the development of diesel-based hybrids at an affordable price for consumers as a way for the country to cut its dependence on hydrocarbons in a time of rising oil prices, and to move towards its goals to reduce the emission of greenhouse gases. Most hybrids, which were pioneered in the volume car industry by Japanese manufacturers, are currently based on petrol, while in France most new cars use diesel. PSA Chairman Jean-Marie Folz has been dismissive about the current generation of petrol-based hybrid cars, saying as recently as the Frankfurt Motor Show in September that current diesel engines were more fuel efficient and emission-friendly than petrol hybrid cars.

Toyota's Prius hybrid model has been a runaway hit and it aims to sell 1 million annually by 2010. Honda offers Civic Hybrid and Ford markets an Escape Hybrid. Costs, storage space and engine performance issues have limited the take-up of this technology among some carmakers.

US group General Motors has unveiled an Opel/Astra Diesel concept vehicle with a hybrid system. Diesel hybrids have been used mainly for city buses or submarines, due to the size of the engines and their relatively high cost.

A diesel hybrid can offer further fuel savings of about 25 percent over a diesel engine. Rivals such as Ford, DaimlerChrysler and Toyota are also embracing diesel hybrids but for big cars, such as the Jaguar S-type, Mercedes E, or for trucks.

The two demonstration cars -- a Peugeot 307 and Citroen C4 -- are in the highly competitive compact car segment and their fuel consumption is cut to 3.4 liters per 100 kilometers (69.2 miles per gallon).

For the moment, however, the cars are too expensive.

"Our objective is to reduce the cost by a factor 2.5 to 3 so that the difference a consumer has to pay for a diesel hybrid is the same as that between a petrol and a diesel car -- because the gain in fuel economies and emission reduction is the same," Folz told reporters.

The cost difference between the demonstration vehicles and a conventional diesel model is about 8,000 euros (5,450 pounds) now and has to be cut to 1,500-2,000 euros.

Folz said high energy prices were supporting the business case for more fuel efficient

cars, while he expected government regulation and fiscal measures to promote "eco citizenship" would also provide a boost for the new vehicles.

PSA's system combines a 1.6-litre high-pressure diesel injection engine with a particle filter and a Stop & Start system that switches the engine off automatically when the vehicle stands still.

At low speeds, such as in towns, the car can drive entirely electrically with low noise and very low pollution, while at higher speeds the diesel engine kicks in. But even on motorways, when the diesel engine is the main power source, the electric motor can provide an extra boost for acceleration when overtaking another vehicle.

Folz said the diesel-hybrid engine could power any compact car on so-called Platform 2 or even bigger Platform 3 vehicles. A planned four-wheel-drive car was unlikely to get one, however, because drivers of those vehicles were considered less interested in fuel efficiency.

In a related development, Chairman Folz and French Education Minister Gilles de Robien will open a research center for the development of fuel cells at Carrieres-sous-Poissy, northwest of Paris. Advocates support fuel cells as a way to develop clean engines that do not use petrol or diesel, but generate energy by combining hydrogen and oxygen and emitting only water as exhaust.

France will spend [Euros]190 million (US\$ 230.4 million) in public money on research and development of alternative fuel vehicle technology in 2006 according to the Minister, which is more than double last year's spending level of [Euros]80 million. Robien made the announcement at the unveiling of a new hydrogen fuel cell developed through a public-private partnership between the Atomic Energy Commission (Commissariat a l'Energie Atomique, CEA) and French automaker PSA Peugeot Citroen. PSA said it plans to gradually integrate fuel cell technology into future generations of vehicles, with an initial development phase focused on urban utility vehicles. It said the new compact fuel cell and similar technologies now under development could become standard equipment on electric-powered Peugeot and Citroen vehicles by 2020. France has been guiding joint public-private efforts on the development clean car technologies since 2002. Government funding as part of the effort that year totaled [Euros] 40 million.

2. British Issue Report on Links Between Pollution Controls, Climate Change

On December 19th, British environmental authorities released a detailed report for consultation on the links between climate change and air quality controls. Some air quality technologies and controls lead to an increase in carbon dioxide emissions and could exacerbate climate change, according to the report, which was published by the Air Quality Expert Group (AQEG) and commissioned by the U.K. Department of Environment, Food, and Agriculture (DEFRA.)

DEFRA says it asked AQEG to "examine linkages between mitigation policies for climate change and air quality" to examine the scientific background to those interactions and "to identify synergies where measures to improve air quality can help to ameliorate climate change, and trade-offs where policy measures in the two areas act in opposition."

The group says that the focus of the report was on the UK and Europe and "on likely rather than catastrophic future events."

The report warned that "many 'end-of-pipe' technologies for air quality controls result in small increases in carbon dioxide emissions, e.g. flue gas desulfurization and some forms of abatement of road vehicle exhaust emissions."

Other key findings of the report were that:

- Pollutants such as particulate matter and ozone precursors influence climate change and that "this is not currently recognized in international definitions of harmful emissions."
- "Hot summers like the 2003 heat wave are likely to become the norm by 2040, leading to summer smog unless emissions affecting ozone concentrations are substantially reduced."
- National and European policies should "recognize the interaction between the effects of pollutants on air quality and on climate change."
- A "holistic approach" to processes that affect the atmosphere "is essential if progress is to be made in limiting the impact of human activity on climate change and air quality."

The chairman of AQEG, Mike Pilling, said the group needed the scientific community to review the draft report and to advise on its assessment and conclusions.

3. Stockholm Residents Face New Congestion Charge

The capital of Sweden will soon have the world's most extensive system of traffic congestion charges. A test run costing 3.8 billion crowns (\$485.2 million) started recently and will last until July. Stockholmers will vote in September 2006 on whether to make it permanent.

Cameras on gantries have sprung up to record the license numbers of vehicles, whose owners have to pay when they enter and leave the zone.

The charge is part of a political deal to secure the support of the Green Party, the smallest group represented in parliament, for Prime Minister Goran Persson's Social Democrat minority government. It is being launched despite the fact that Persson's fellow Social Democrats on Stockholm city council pledged not to introduce such a scheme when they fought and won local elections in 2002.

The Greens insist the charge is needed because of the growing volume of traffic. "The alternative is to sit in traffic jams for the next 10 years," said Claes Roxbergh, a Green Party Member of Parliament and chairman of its traffic committee. Social Democrat mayor Annika Billstrom has also thrown her weight behind the scheme, hammering home the message that traffic jams cost society between 6 billion and 8 billion crowns a year.

The charge will be a maximum 60 crowns (\$7.50) a day, slightly less than London, the only other European capital with similar fees, which charges eight pounds (\$14) a day.

While Stockholm's traffic problems are a far cry from those of bigger cities such as Moscow or London, opinion polls show most Stockholmers agree that the Greens have a point. However, polls also show they are less convinced that congestion charges are the solution. A recent opinion poll showed that nearly 60 percent of those questioned opposed the charge while about 30 percent were in favor.

Despite the criticism and the opinion polls, advocates of the charge may yet win the day. Many inner city dwellers do not drive or own a car, partly because of the lack of parking spaces, instead using public transport which is being beefed up ahead of the experiment.

The experience of London, set to double the area covered by its charging system in 2007, also indicates that a defeat for the Stockholm scheme may be far from certain. Opposition to the charges was widespread in the British capital before their introduction, but three years later polls show Londoners have warmed to the system.

The Swedish charge aims to cut traffic on the most heavily congested roads by 10-15 percent. In London, which introduced charges in 2001, the toll has cut traffic volume by 18 percent. The charge is also intended to bring about an overall improvement in the urban environment in Stockholm, particularly air quality.

4. Sweden Raises Proposed Air Ticket Tax

The Swedish government has announced that a proposed environmental tax on air tickets will be substantially higher than first proposed. The tax, which will come into force in July 2006, will range from 96 kronors (\$12.50) per ticket for economy class in Europe to 430 kronors (\$56) for business class passengers on transcontinental flights. The levy is markedly higher than the 50 kronors to 100 kronors envisioned in the government's 2006 budget plan. Although the tax will take effect from July, it will not apply to tickets ordered before June 1 for travel before January 2007.

The idea of an environmental tax on air tickets has been strongly promoted by the Green Party, one of the junior partners in Sweden's Social Democrat-led ruling coalition, and is described by its supporters as a necessary component of the government's "green shift," a series of financial measures aimed at providing incentives for green initiatives and policies. In a Dec. 22 news release, the Swedish government stated that at the present rate the rise in carbon dioxide emissions from aircraft will have risen by 150 percent in 2012 compared to 1990 levels.

5. European Airline Industry Attacks Swedish Airline Ticket Tax Proposal

On January 30th, the Association of European Airlines (AEA), Europe's leading airline lobby, launched a sharp attack on Sweden's recently announced plan to place a new tax on airline tickets, suggesting that the proposed levy would penalize airlines and passengers without achieving environmental goals.

Swedish officials said the airline ticket tax is part of a wider "green shift" in fiscal policy,

which aims to use taxation and other economic instruments to discourage environmentally harmful activities while providing greater incentives for less-polluting activities. AEA disagreed, suggesting in its policy statement that the Swedish plan runs counter to environmental objectives and the fight against climate change.

The AEA's new salvo against the Swedish tax comes after the lobby waged an unsuccessful bid to shoot down a French plan to launch a [Euros]1 (\$1.21) to [Euros]40 (\$48.34) tax on airline tickets beginning July 1, 2006. France says that its "solidarity tax" will raise upwards of [Euros]210 million (\$253.8 million) annually for the fight against poverty, AIDS, and other health problems in the developing world.

6. Lorries Face £200 Pollution Charge In London

Lorry and coach drivers who fail to meet strict new pollution standards face a £200 charge for driving in Greater London from 2008 under new plans unveiled by Mayor Ken Livingstone. While Mr. Livingstone hailed the plans as a vital weapon in tackling pollution, the freight industry voiced concern about the cost of meeting the new standards. The mayor's political opponents also attacked the proposals, pointing out that the cost of implementing the scheme had already doubled since the original estimates were drawn up by Mr. Livingstone's officials. The latest estimate puts the bill for the project at £78 million.

The scheme would apply initially to lorries weighing more than 7.5 tons from February 2008. Lorries and buses weighing more than 3.5 tons would have to comply by July 2008.

Under the scheme they would have to comply with European Union standards - known as Euro III - which set a limit to the allowable pollution level from heavy vehicles' diesel engines. This limit would be dropped to the tighter Euro IV standard in 2010, when smaller vehicles, including vans, could also be forced to comply.

However it is the enforcement of the scheme that is likely to prove particularly controversial - especially with the threat of a £1,000 fine for vehicles that fail to pay the initial £200 charge.

Transport for London will rely on a network of fixed and mobile cameras to identify polluting vehicles. A lorry or bus will be deemed to be a polluter if it was manufactured before October 2001 or not recorded as having been fitted with an anti-pollutant filter by the Vehicle Operator and Services Agency (VOSA).

Although an appeal process would be in place, it was unclear last night whether this would include setting up testing stations that could verify the level of pollutants coming out of a vehicle's exhaust. It was also unclear how the scheme could be applied to foreign lorries driving in the capital.

But Mr. Livingstone defended the scheme. "The proposed low-emission zone is the most effective way of reducing the most harmful vehicle emissions quickly and will make London one of the only cities in the world to have taken such a radical step to tackle air pollution," he said.

7. Switzerland Proposes Plan To Control Particulate Pollution

Swiss Environment Minister, Moritz Leuenberger, has proposed an action plan to reduce exposure to ambient particulate matter. A number of proposed measures focus on the control of PM emissions from diesel engines and from wood combustion.

The Swiss Department of Environment (UVEK) estimates that ambient particulate pollution in Switzerland--named the biggest environmental and public health problem--is responsible for 3,700 premature deaths per year and annual extra health costs of SFr4.2 billion (\$3.4 billion). In many Swiss cities, especially in winter, ambient particulate levels exceed the air quality standards (the Swiss and EU 24-hour PM10 limit is 50 µg/m³, compared to 150 µg/m³ in the USA). The sources of manmade particulate pollution include the use of mechanical abrasion (56%), diesel engines (17%), wood burning (15%), burning of other fuels (10%), as well as gasoline and natural gas engines (2%).

Out of the nine proposed measures, three apply to the transportation sector:

- New criteria are to be developed for energy-efficient and low emission light motor vehicles (up to 3.5 tons), based on fuel consumption, PM and CO₂ emissions, and noise. These criteria will be a basis for possible cantonal tax programs or driving bans.
- Diesel buses operated by public transit agencies should be equipped, starting from 2007, with the best available technology for the reduction PM emissions (particle filters or equivalent systems).
- Since Switzerland transfers the EU emission laws into its national legislation, it will participate in the work of the respective UN groups to develop more stringent emission standards for passenger vehicles and truck engines.

Furthermore, Leuenberger intends to propose a rule to make particulate filters mandatory on all new diesel vehicles. Over forty percent of new cars imported to Switzerland are already fitted with filters.

8. Belgian Survey Predicts Fall in Vehicle Emissions

Emissions of dangerous nitrogen oxide gases and polluting particles from vehicles on Belgian roads could decline by 70 percent, by 2030, a study has concluded. The predicted decline comes despite the expected growth in traffic, rising from 80 billion kilometers per year in 2004 to 100 billion in 2030.

Anticipated technological improvements in vehicle engines are cited as the main reasons for a reduction in the emission of dangerous gases, except for carbon dioxide.

The findings were presented by Transport & Mobility Leuven, a joint venture between the Leuven Catholic University and the Dutch research bureau TNO.

The federal Government-commissioned study was presented to the Belgian car industry federation Febiac on Wednesday, January 17.

In 1990, there were 60 billion kilometers driven each year, 80 billion in 2004 and an

expected 100 billion in 2030. The survey also predicted that the percentage of diesel-fuelled cars would also increase.

The study also took into account expected economic growth and factored in the fact that truck-driven kilometers would increase from 5.6 billion in 1990 to 11.5 billion in 2030.

9. Denmark Considering Particle Filters for Fireplaces, Wood Stoves

The Danish government is considering requiring particle filters for the nation's 700,000 wood-burning stoves and fireplaces, Danish Environment Minister Connie Hedegaard said in a statement on January 15th. The announcement follows studies that found what the government described as unacceptably high levels of ultra-fine (PM-2.5) particulate matter polluting the air. Suspended particles smaller than 2.5 microns in diameter are thought to cause serious breathing disorders such as bronchitis and asthma.

The statement said that a report on the logistics of introducing a filter requirement for all wood-burning equipment has been commissioned. The study, which will be undertaken by Denmark's Environmental Protection Agency (EPA), will investigate the technical and social consequences of such a requirement, the Minister said.

Wood burning stoves and fireplaces are extremely popular among Denmark's population of 5.5 million. But a recent EPA report shows that such appliances are responsible for 47 percent of all national PM-2.5 emissions and that the pollution caused by winter wood burning in some urban area is equivalent to that of a central Copenhagen street used by 70,000 vehicles per day.

10. Paris Air Quality Improves But Still Fails To Meet EU Targets

Air quality improved slightly during 2005 in the Greater Paris region (Ile de France), but the French capital is unlikely to meet European Union targets for 2010 without new action to curb transport, industrial, and household emissions, air quality monitoring authority Airparif said on January 12th. Airparif's annual air quality survey recognized that new emissions control technology introduced by major European carmakers has substantially reduced some forms of transport-based pollution. The report nonetheless points to worrisome trends in some forms of air pollution, including nitrogen oxides, ozone, and particulate matter, and suggests France must further reduce traffic while taking new steps to curb industrial and household emissions if it hopes to comply with the EU's clean air initiative.

11. EU Proposes Strategy for Urban Environment

On January 13th, the European Commission unveiled a proposed "Thematic Strategy on the Urban Environment" that aims to broadly improve environmental conditions in European cities. The proposal outlines measures intended to improve air quality, reduce traffic congestion, contain urban sprawl, cut greenhouse gas emissions, and curtail the generation of waste.

EU Environment Commissioner Stavros Dimas said the plan would enhance policymaking at the municipal level.

This "thematic strategy" is the fifth proposed by the Commission out of a total of seven that are planned. Those already issued cover air pollution, the marine environment, natural resources, and waste. The final two will address pesticides and soil.

Under the urban environment strategy, the Commission will coordinate community programs and will support related investments, research, and demonstration projects. Specific provisions outline support for the development of "sustainable urban transport plans," for the exchange of "best practices," and for the creation of an Internet portal to provide relevant information to local authorities.

12. Spain To Penalize Most Polluting Vehicles

Spanish environment minister Cristina Narbona has announced that the government plans this year to introduce fiscal measures to discourage the purchase of diesel-engined cars, SUVs and other heavily-polluting private vehicles. No details have been released but Spanish daily El Pais quotes official sources as saying that the vehicle tax on medium-sized engines would be raised from 7% to 12%, removing the current fiscal incentives for diesel, and that a special 17% rate would be levied on engines over 2.5 liters.

The initiative comes at a time when Spain is struggling to hit Kyoto targets for greenhouse gas emissions and the government has acknowledged that all major cities breach European air quality legislation.

In a related development, the Madrid city council announced that, from 2008, heavily-polluting vehicles - generally those over 15 years old - will be excluded from the historic city center in an attempt to reduce nitrogen dioxide emissions. Opposition parties and environmental groups called the plan insufficient, especially in the light of the council's current motorway expansion scheme.

13. British Report Sees Compliance With Kyoto Despite Slight GHG Increase

The United Kingdom is "well on course" to meet its Kyoto Protocol commitments to reduce greenhouse gas emissions, according to a government statement issued on January 23rd. The U.K. Department of the Environment, Food, and Rural Affairs (DEFRA) said that "emissions of the basket of six greenhouse gases [covered by the Kyoto treaty] fell by 14.6 percent between the base year [1990] and 2004." Under Kyoto, the United Kingdom agreed to reduce greenhouse gas emissions by 12.5 percent from 1990 levels by the period 2008-2012.

The statement added that carbon dioxide emissions in 2004 rose 0.5 percent from 2003 due to "increases in emissions from gas and oil consumption, which were greater than the slight fall in emissions due to less coal consumption," but that between 1990 and

2004 net emissions of carbon dioxide had fallen 5.6 percent. The government said it expected emissions to fall by more than 10 percent by 2010, "taking account of projected energy prices, economic growth, and the effect of policies currently in the climate change program."

The findings came out of the government's draft report to the United Nations Framework Convention on Climate Change (UNFCCC), submitted Jan. 15, and also form part of the new National Atmospheric Emissions Inventory, a log of greenhouse gas emissions and air quality.

DEFRA said it had also submitted to the European Commission a draft report setting the maximum limit of greenhouse gases which it may emit over the first commitment period of the Kyoto Protocol, 2008-2012.

Final reports are required to be sent to the UNFCCC by the end of 2006.

14. Petrom Invests \$50M in Romanian Refinery

Austrian-owned OMV-Petrom, the country's largest oil company, said Tuesday it was investing euro42 million (US\$49.8 million) in one of its refineries to allow the facility to produce greater quantities of low-sulfur fuels. The investment in the Arpechim plant in the southern Romanian city of Pitesti will produce 1.2 million tons of low-sulfur fuel a year. South Korean company SK&EC-LG International will build the new installation at the refinery according to an OMV-Petrom statement.

The company plans to invest some euro1 billion (US\$1.19 billion) to modernize its two refineries of Petrobrazi and Arpechim by 2010.

OMV-Petrom is the largest refining operator in Romania, with a refining capacity of 8 million tons per year, the release said.

In 2004, then state-owned oil company Petrom was sold to Austrian group OMV AG for euro1.5 billion (US\$1.8 billion).

15. Portugal Approves Laws Intended To Cut Emissions, Boost Efficiency

On January 26th, Portugal's Council of Ministers (cabinet) approved five "decree-laws" and one resolution aimed at reducing greenhouse gas emissions and improving energy efficiency in buildings. The rules will take effect following publication in the Diário da República, Portugal's national register.

"[These laws] add to the fight on climate change and aim to help fulfill the goals of Kyoto and the measures provided in the National Climate Change Program (PNAC)," the Council said in a statement.

The first rule amends Portugal's emissions trading law (Decree-Law 233/2004) to

transpose the EU Linking Directive (2004/101/EC), to require qualified specialists to verify reports filed by installations, and to streamline administrative processes related to emission rights requests and modifications. It also gives more power to the General Directorate of Geology and Energy in implementing the national emissions license regime.

The second approved rule creates the Portuguese Carbon Fund, which will invest in domestic and international projects to reduce emissions in exchange for earning tradable credits. The fund will be managed by the Climate Change Commission (CAC) and will be regulated by the Finance, Environment, and Economy ministries.

A separate resolution gives greater powers and technical resources to the CAC in its capacity as national authority for overseeing the employment of flexible mechanisms allowed by the Kyoto Protocol. The commission, which includes representatives from several government ministries, will facilitate both public and private investment in such mechanisms.

"This resolution reinforces Portugal's ability to maximize the advantages of Kyoto flexible mechanisms and helps Portuguese economic agents to obtain emission reduction credits, thus promoting international partnerships that value sustainable development in developing countries and economies in transition," the Council said.

A second set of laws deals with energy efficiency in buildings.

Under the first law in this series, buildings will be required to obtain a Certificate of Energy Performance. The requirement will apply to all new buildings starting in 2007 and to all existing buildings starting in 2009. The law aims to give owners, buyers, and renters an idea of the energy efficiency they can expect from a building, as well as the assurance that it meets air quality standards.

In addition to transposing EU Directive 2002/91/EC on the Energy Performance of Buildings, the new law implements measures contained in Portugal's National Climate Change Plan.

With the goal of reducing both energy consumption and related carbon dioxide emissions, a separate law specifically targets improving energy efficiency in buildings by imposing energy efficiency standards on heating and air conditioning systems and monitoring the ongoing maintenance of these systems by qualified personnel. The law foresees periodic building inspections and the application of sanctions for non-compliance.

This law will first affect larger buildings with high energy consumption levels, with smaller buildings and residences phased in later in accordance with a schedule to be determined by the government.

Finally, another law alters the regulations dealing with the thermal efficiency of buildings without heating or air conditioning systems. Among other things, the law foresees imposing limits on energy consumption, in accordance with environmental criteria. It also increases technical training standards to be placed on inspectors.

16. France Launches Review Of Tax Policies Following OECD Report

On February 3rd, France launched a wide-ranging review of national tax policies with goals of identifying environmentally harmful taxes and proposing reforms within one year. The tax policy review will be overseen by an interministerial commission led by officials from the finance and environment ministries.

The government has given the commission a two-part mandate.

First, the commission will study France's existing tax framework to identify environmentally harmful taxes and propose means of improving them.

The commission will analyze existing tax policies in agriculture, energy, and polluting activities. It then will publish a progress report on phase one of its work by mid-2006, after which it will study the possibility of improving environmental performance or protection through the creation of new taxes, the official said.

Among the controversial subjects slated for coverage in the second phase of the tax review are the potential impacts of new fuel or energy taxes and new taxes on pesticide or water use, the official said.

The review is a direct response to a suggestion from the Organization for Economic Cooperation and Development, which recommended in September 2005 that France study the environmental effectiveness of tax policy and other economic instruments.

17. Italy to Allow Power Plants To Temporarily Exceed Emissions Limits

On February 3rd, Italy's Ministry of Industry issued a decree to allow energy utilities to temporarily surpass emissions limits allowed under the terms of Italy's emissions reduction schedule, which was established in 2002. The schedule allows for such a move under its emergency provisions, but this is the first time the government has used that authority.

The ministry said the step was required in response to a rise in prices and drop in supply of natural gas from Russia, which may force Italian energy utilities to rely more on dirtier energy sources, such as fuel oil.

"Nobody is happy that the emissions reduction schedule may have to be suspended, but the alternative is to leave parts of the country with no energy for heat," the ministry said in a statement. "The time period will be brief and, hopefully, it will not produce a great deal of additional emissions."

The decree allows large utilities to make the switch when they deem it necessary up to March 31. At least one utility, former electricity monopoly Enel SpA, said it would likely need to exercise its option within days, given weeks of colder-than-normal temperatures in northern Italy.

Environmental groups said they were concerned the move would set a precedent.

18. Report Sees More Certainty, Rising Costs for Non-Action on Warming

On January 30th, the U.K. Department for Environment, Food, and Rural Affairs (DEFRA) released a book on climate change that describes current technological options for stabilizing greenhouse gases and key projected impacts of global warming. The book, titled *Avoiding Dangerous Climate Change*, builds on the content of a conference of the same name held in Exeter, England, in February 2005.

According to the book, since the Third Assessment Report (TAR) of the Intergovernmental Panel on Climate Change (IPCC) in 2001, "there is greater clarity and reduced uncertainty about the impacts of climate change across a wide range of systems, sectors, and societies" and that "in many cases the risks are more serious than previously thought."

The book emphasizes the urgency of collective action to reduce greenhouse gas emissions, and asserts that "different models suggest that delaying action would require greater action later for the same temperature target and that even a delay of 5 years could be significant." It says that if action to reduce emissions were delayed by 20 years, rates of emission reduction may need to be 3 to 7 times greater to meet the same temperature target.

It states that there are no technological "magic bullets" for solving the climate change problem and that a "portfolio of options" will be required, including multi-gas strategies, emissions trading, nuclear energy, and carbon capture and storage in fossil fuel plants.

19. French Renewable Energy Use Rises in 2005

French use of renewable energies showed "spectacular" growth in 2005 with wind, solar, and biomass-based energy systems all growing at levels well above those seen in 2004, according to data released on February 1 by the French Agency for the Environment and Energy Management (ADEME). Wind power led the way, as energy firms installed 354 megawatts of new production capacity at France's 120 wind farms, representing a 140 percent jump over new installations in 2004. The new installations brought total capacity to 745 megawatts, 90 percent above 2004. Solar energy, boosted by new tax breaks, also showed strong growth in 2005, the agency said. Households and local authorities installed an estimated 106,400 square meters of new rooftop paneling last year, 92 percent more than in 2004. ADEME said last year's performance indicates that France is on its way to meeting European Union requirements that renewable energies grow from today's 14 percent of electricity production to at least 21 percent by 2010.

20. U.K. Study Considers Steps To Reduce Emissions, Develop Nuclear Power

The United Kingdom published a national energy strategy Jan. 23 that considers whether to build a new generation of nuclear power plants and what government subsidies are appropriate to encourage the use of renewable fuels. The consultation document, *Our Energy Challenge: Securing Clean, Affordable Energy for the Long Term*, notes that the United Kingdom has put itself "on a path to cut CO2 emissions by some 60 percent by about 2050, with real progress by 2020" and notes that the "energy debate" takes place in the context of increasing evidence about the effects of global warming and "a general heightening of sensitivity around global energy issues, affecting perceptions of the security of supply from major exporter countries."

Means to achieving "clean, affordable energy" suggested by the review include: increasing energy efficiency; further developing renewable energy sources; and using carbon abatement technology, which the review describes as "the greatest long-term potential to reduce emissions."

On the issue of nuclear energy, the document says the chief "considerations bearing on the issue" include its carbon profile (though the report notes that the mining and enrichment of uranium are both carbon intensive), the reliability of access to fuel, safety, the risk of proliferation, and the risks associated with radioactive waste.

According to the report, the most weight will be given to the issue of nuclear waste. The report adds, however, that the body set up to examine options for the long-term storage of nuclear waste, the Committee on Radioactive Waste Management (CORWM), has "confirmed that waste from a new build program could be technically accommodated by the options it is considering."

Upon the release of the report, U.K. Secretary of State for Trade and Industry Alan Johnson said, "By 2020, coal and nuclear power plants generating about 30 percent of today's electricity are expected to have closed. Companies will need to decide how this capacity should be replaced. These are big investment decisions, so the government needs to provide a clear framework. If gas, as well as renewables, were to fill the gap, how comfortable will we be relying on imports for 80 percent of our supplies? And what would be the impact on our ability to reduce carbon emissions?"

21. Switzerland Establishes New Environmental Agency

On January 1st, Switzerland established a new environmental protection agency, called the Federal Office for the Environment. "FOEN" brings together the Federal Office for the Environment, Forests, and Landscape and the Federal Office for Water and Geology. As with the preexisting agencies, FOEN will be under the authority of the Swiss Federal Department for the Environment, Transportation, Energy, and Communications. The Swiss government has described FOEN as its principal actor for implementing environmental policy at the federal level. FOEN will coordinate efforts on air, water, and soil quality; forests; and environmental zoning. FOEN will also be responsible for matters relating to the protection of vulnerable populations from floods, avalanches, and erosion, as well from industrial risks such as chemical accidents. The agency will also be responsible for developing the legal basis for environmental measures and helping Swiss cantons and other authorities to implement laws and regulations related to the protection of the environment.

22. Finland May Ease Tax Burden on Biodiesel Producers

On January 28th, Finland's Minister of Trade and Industry Mauri Pekkarinen confirmed that the country was considering granting tax breaks for producers of crops used in biodiesel fuel. Pekkarinen told Finnish media that he was considering reducing or completely scrapping excise duty for farmers producing crops such as rapeseed or oilseed. A government working group charged with suggesting ways to increase the amount of biofuel used by vehicles will present its recommendations by February 10th, and the findings will influence future government policy on the taxation of biofuels. Although Finland has granted partial tax relief for producers of biofuels intended for research and testing, the nation still taxes biodiesel and ethanol at the same level as fossil fuels, a policy which has recently been the subject of criticism from politicians and environmentalists alike. The Finnish Bioenergy Association has also claimed that administrative obstacles are preventing biofuels from reaching the market. Under the European Fuel Tax Directive (92/81/EEC), 2 percent of fuel used in road traffic should be biodiesel, ethanol, or biogas by the end of 2006, but the government has already conceded that Finland is unlikely to meet this target.

NORTH AMERICA

23. Mexico Finalizes Low Sulfur Fuel Specifications

The Mexican government has finalized and published the official Mexican NOM-086 which updates and sets new specifications for the coming years for both gasoline and diesel. NOM-086 will take effect 60 days after its publication. Essentially, the new specifications set lower sulfur specifications for both gasoline and diesel fuels for the coming years as the table below summarizes:

Table 1. Evolution of Gasoline and Diesel Sulfur Specifications in Mexico

Type	2003	2004	2005	2006	2007	2008	2009	2010	2011
PEMEX Premium	300/500								
		250/300							
				30/80					
PEMEX Magna, Mexico City	500								
			300/500						
						30/80 (1)			
PEMEX Magna, Rest of Country	1000								
			300/500						
							30/80		
	500								

				300	15 Only in the frontier zone (2)				
						15			

Notes: (1) Applies to Mexico City, Guadalajara and Monterrey only. (2) The frontier zone is essentially the northwest corner of Mexico, but the territory is more specifically defined in the regulation.

Gasoline and diesel sulfur specifications are subject to the approval of the Fuel Quality multi-annual project included in the “Federation’s Debit Budget 2006” (However, the availability of the required investment to meet the new specifications remains somewhat uncertain). These same specifications can be delayed up to 180 days after the stated dates if they cannot be accomplished for reasons beyond the will of the responsible ones.

24. Insurance Company Offers Hybrid Car Owners 10 Percent Discount

Travelers, the fourth largest property and casualty insurer in the United States, is giving a 10 percent discount on auto insurance to hybrid owners beginning in February. It is the first auto insurer to implement such a discount nationwide. While data is still sparse on how hybrid owners compare to other drivers, Travelers' research indicates they fall into a low-risk category historically rewarded with cheaper premiums. They found that drivers tend to use hybrids to commute between home and work and generally stay within speed limits, thereby reducing some of the risk associated with driving a motor vehicle.

Hybrid sales have doubled every year since the first such car was offered in the United States in 1999, making it a growing sub-market for insurers, with as many as 30 models planned or in production. Hurricane Katrina, which sent gas prices spiraling, has contributed to this trend.

25. Honda Big Winner With Vehicle Tax Incentives Beginning Jan. 1

Honda appears to be the initial big winner as the CLEAR Act provisions of the Energy Policy Act of 2005 (EPACT’05) took effect on January 1st. It is able to take advantage of all the major tax incentives the bill contains for spurring sales of advanced technology and alternative fuel vehicles.

Unlike any other automaker, Honda is in a position to benefit from all three tenets of the original CLEAR Act (Clean Efficient Automobiles Resulting from Advanced Car Technologies) i.e. tax incentives for:

- alternative fuel and advanced technology vehicles;
- alternative fuels; and
- the infrastructure for dispensing alternative fuels.

Honda, along with its Japanese rival, Toyota, has the most complete lineup of hybrid-electric vehicles. Both companies are likely to have reached the 60,000 vehicle limit per manufacturer that is eligible for the full incentive. Ford is the only other manufacturer to currently offer a hybrid model.

Purchasers of a hybrid Honda Civic automatic are able to take an estimated \$2,100 off their tax bill, according to a table prepared by the American Council for an Energy Efficient Economy. Ironically, the first hybrid vehicle to be sold in the U.S., the Honda Insight, which boasts the highest fuel economy of any vehicle on the market, is not eligible for a CLEAR Act incentive because it does not meet the strict emissions standards eligibility requires.

Honda is also the only automaker in a position to take advantage of CLEAR Act incentives for fuel cell vehicles. They are able to do so by virtue of being the only manufacturer to have a fuel cell vehicle certified by both the federal and California's environmental agencies for emissions. They are also the first automaker to lease a fuel cell vehicle to an individual instead of to university or municipal entities.

The second component of the vehicle incentives is for alternative fuel vehicles, i.e. those running on natural gas, compressed or liquid, liquefied petroleum gas (propane), hydrogen and methanol. Honda is one of two remaining original equipment manufacturers building production alternative fuel cars which run on compressed natural gas, specifically its Civic GX. The energy law provides a tax incentive of as much as 80 percent of the incremental cost of the alternative fuel vehicle, or \$3,600 per vehicle. The incentive is not subject to the 60,000 vehicle manufacturer limit and it runs for a year longer than the incentives for hybrids and vehicles using advanced lean-burn technology (diesel fueled), through Dec. 31 2010, as opposed to Dec. 31, 2009. The incentive for fuel cell vehicles continues through Dec. 31, 2014.

Originally the CLEAR Act included incentives for alternative fuels, but that component became law as part of the transportation bill.

Honda is absolutely unique in that it is the only manufacturer that can take direct advantage of the tax incentive for installing alternative fuel refueling infrastructure. Through its collaboration with Fuelmaker, a Canadian developer and manufacturer of compressed natural gas refueling equipment, Honda is marketing a home refueling device (so-called Phil) to go with its Civic GX. The energy law allows for a tax credit of \$1,000 to defray the cost of purchasing residential alternative fuel refueling equipment. In California the \$1,000 incentive would be in addition to \$1,000 already available from the South Coast Air Quality Management District and another \$1,000 available from a state program. Phil will now cost the home owner \$400 plus the cost of installation, the \$3,400 purchase cost minus \$3,000 in federal, state and municipal incentives.

26. Canadian Report Shows Rise in Emissions, Worse Air Quality

On December 14th, Statistics Canada published environmental data showing a significant increase in greenhouse gases emissions and deteriorating air quality in Canada between 1990 and 2003. The data also show that water pollution guidelines are being exceeded at sites across Canada, the agency said in its inaugural Canadian Environmental Sustainability Indicators report.

Canada's emissions of the six greenhouse gases covered in the Kyoto Protocol--carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons--increased by 24 percent between 1990 and 2003 to 740 megaton's of carbon dioxide-equivalent, which is 32 percent above the country's target under the

treaty, it said. Canada is committed under the Protocol to a 6 percent decrease in greenhouse gas emissions from 1990 levels by the 2008-2012 period.

Carbon dioxide accounted for almost 80 percent of greenhouse gases emissions in 2003, with methane representing 13 percent and nitrous oxide 7 percent, it said. The remaining compounds accounted for less than 2 percent of overall emissions, it said. The share of overall emissions held by each gas did not change significantly between 1990 and 2003, it said.

Canada's urban air quality also deteriorated between 1990 and 2003, Statistics Canada said. Seasonal ground-level ozone concentrations averaged about 40 parts per billion in Canada in 2003, up 16 percent from 1990 levels.

27. U.S. Greenhouse Gases Up 2 Percent In 2004, Largest Increase Since 1999

U.S. greenhouse gas emissions rose 2.0 percent in 2004 to 7,122 million metric tons carbon dioxide equivalent from 6,983 million tons in 2003, the Energy Department's Energy Information Administration reported on December 19th. It was the largest rate of increase since 2000, when emissions rose 2.4 percent from the previous year, and it was well above the average annual growth rate of 1.1 percent recorded since 1990, according to the EIA report, Emissions of Greenhouse Gases in the United States 2004.

Although emissions rose in 2004, greenhouse gas intensity--the measure of emissions per unit of real economic output--fell 2.1 percent from 2003, due largely to robust economic growth that outpaced the rise in emissions, according to the report. The U.S. economy expanded by 4.2 percent in 2004, the highest growth rate since 1999.

Greenhouse gas intensity has declined 23 percent since 1990, an average of 1.9 percent per year, according to EIA.

The 2004 emissions increase was due primarily to a 1.7 percent rise in carbon dioxide emissions, along with increases in emissions of nitrous oxide (5.5 percent) and methane (0.9 percent). Emissions of engineered gases, a group that includes hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, increased 9.6 percent.

Emissions of all U.S. greenhouse gases were 15.8 percent higher than in 1990, the base year established under the Kyoto Protocol for emissions reductions by the world's industrialized countries.

28. EIA Projects Growth in Hybrids and Diesels in New Energy Outlook

The Energy Information Administration (EIA), in preparing projections for the Annual Energy Outlook 2006 (AEO2006), evaluated a wide range of trends and issues that could have major implications for U.S. energy markets between today and 2030. In preparing AEO2006, EIA reevaluated its prior expectations about world oil prices in light of the current circumstances in oil markets. As a result of this review, the AEO2006 reference case, world crude oil prices, which are now expressed in terms of the average price of imported low-sulfur crude oil to U.S. refiners, are projected to increase from

\$40.49 per barrel (2004 dollars) in 2004 to \$54.08 per barrel in 2025 (about \$21 per barrel higher than the projected 2025 price in AEO2005) and to \$56.97 per barrel in 2030.

Net petroleum imports are expected to account for 60 percent of demand (on the basis of barrels per day) in 2025 in the AEO2006 reference case, up from 58 percent in 2004. In the AEO2005 reference case, net petroleum imports were projected to account for 68 percent of U.S. petroleum demand in 2025.

Higher world oil prices are also projected to affect fuel choice and vehicle efficiency decisions in the transportation sector. Higher oil prices increase the demand for unconventional sources of transportation fuel, such as ethanol and biodiesel, and are projected to stimulate coal-to-liquids (CTL) production in the reference case. In some of the alternative AEO2006 cases, with even higher oil prices, domestic production of liquid fuels from natural gas—"gas-to-liquids" (GTL)—is also stimulated.

The projected fuel economy of new light-duty vehicles in the AEO2006 reference case in 2025 is higher than was projected in the AEO2005 reference case, primarily because of higher petroleum prices. The AEO2006 reference case does not include implementation of the proposed, but not yet final, increase in fuel economy standards based on vehicle footprint for light trucks—including pickups, sport utility vehicles, and minivans—for model years 2008 through 2011.

Much of the increase in new light-duty vehicle fuel economy in the AEO2006 reference case reflects greater penetration by hybrid and diesel vehicles. Sales of "full hybrid" vehicles in 2025 are 31 percent (340,000 vehicles) higher in the AEO2006 reference case, and diesel vehicle sales are 29 percent (290,000 vehicles) higher, than projected in the AEO2005 reference case. In spite of the higher projected sales of hybrid (1.5 million) and diesel (1.3 million) vehicles in 2025, each is expected to account for only 7 percent of new vehicle sales in the AEO2006 reference case, even though the projected hybrid sales are higher than current industry expectations. The projected sales figures for hybrids do not include sales of "mild hybrids," which like full hybrids incorporate an integrated starter generator, that allows for improved efficiency by shutting the engine off when the vehicle is idling, but do not incorporate an electric motor that provides tractive power to the vehicle when it is moving.

The AEO2006 reference case includes minimal market penetration by hydrogen fuel cell vehicles, as a result of State mandates. Although significant research and development are being conducted through the FreedomCAR Program, a co-funded partnership between the Federal Government and private industry, those efforts are not expected to have a significant impact on the market for fuel cell vehicles before 2030.

AEO2006 includes consideration of the impacts of the Energy Policy Act of 2005 (EPACT2005), signed into law on August 8, 2005. Consistent with the general approach adopted in the AEO, the reference case does not consider those sections of EPACT2005 that require funding appropriations for implementation or sections with highly uncertain impacts on energy markets. For example, EIA does not try to anticipate the policy response to the many studies required by EPACT2005 or the impacts of the research and development funding authorizations included in the bill. The AEO2006 reference case includes only those sections of EPACT2005 that establish specific tax credits, incentives, or standards—about 30 of the roughly 500 sections in the legislation.

A total of 6 gigawatts of newly constructed nuclear capacity is projected to be added by 2030 in the AEO2006 reference case as a result of the incentives in EPACT2005.

29. 6 Ex-Chiefs of E.P.A. Urge Action on Greenhouse Gases

Six former heads of the Environmental Protection Agency, including five who served Republican presidents, said recently that the Bush administration needed to act more aggressively to limit the emission of greenhouse gases linked to climate change. The agency's Annual Energy Outlook for 2006, which was released last month (see above), showed that carbon emissions from inside the United States are projected to increase by 37 percent by 2030. The 37% increase is twice as large as the 17% CO₂ emissions increase over the past 25 years.

30. NASCAR Plans to Switch to Unleaded Fuel in '08

NASCAR will use unleaded fuel for its racecars and trucks beginning in 2008, making the switch from the high-octane leaded fuel that it has used for decades.

Gary Nelson, NASCAR's vice president for research and development, said that the series had been testing a new fuel since the fall and that early results had been promising. The fuel, Sunoco 260 GTX, will be used in NASCAR's three main racing series - Nextel Cup, Busch, and Craftsman Truck. Nelson said it was already being used in the Grand American road racing series.

In the past year, NASCAR has faced criticism for its continued use of leaded fuel, because exposure to lead is a known health risk. A study by doctors at Indiana University School of Medicine, published in the Journal of Occupational and Environmental Hygiene, found that some mechanics and crew members of a Nascar Nextel Cup multicar team had elevated lead levels in their blood.

31. DaimlerChrysler to Feature Technology for the "Cleanest" Diesel in the World

DaimlerChrysler began the New Year with a group-wide initiative for advanced clean diesel powertrains to be launched at the North American International Auto Show (NAIAS) in Detroit. The technology called BLUETEC will be capable of producing the "cleanest diesel vehicles in the world" according to DaimlerChrysler.

The company will present vehicles featuring BLUETEC at the Mercedes-Benz and Chrysler Group stands, highlighting a bright future for diesel-powered automobiles around the world. BLUETEC offers diesel passenger cars the potential to meet the most stringent emissions regulations worldwide and be approved for sale in all 50 U.S. states. This will enable advanced diesel engines to develop their full potential for reducing fuel consumption and help to reduce emissions in the U.S. as well.

The BLUETEC vehicles that DaimlerChrysler will be showcasing in Detroit – the Mercedes-Benz E 320 BLUETEC, the Vision Mercedes-Benz GL 320 BLUETEC, and

the Concept Car Jeep® Grand Cherokee BLUETEC – are capable of being the most fuel-efficient and cleanest diesel passenger vehicles in their segments in the U.S. BLUETEC can only achieve its full effect in passenger cars when it is used with diesel fuel that has a sulfur content of less than 15 ppm. Such fuel will further reduce the emissions of diesel vehicles already on the market in the U.S. This low-sulfur diesel has already been introduced throughout Europe and is expected to become available in the U.S. in the fall of 2006. DaimlerChrysler's first BLUETEC passenger car will be the Mercedes-Benz E 320 BLUETEC, which will be launched in the U.S. next fall.

Mercedes-Benz trucks are already available with BLUETEC diesel technology as standard. Around 9,500 Mercedes-Benz trucks equipped with the exhaust-gas technology were delivered to customers in 2005. This means that more than 98 percent of all truck customers have opted for vehicles that already fulfill the Euro 5 emissions standard.

BLUETEC is a combination of technologies for passenger cars and light trucks to reduce all relevant emission components. The system for passenger cars includes an oxidizing catalytic converter and a diesel particulate filter, as well as systems for reducing nitrogen oxide emissions. Whether a combination of Denox and a BLUETEC catalytic converter, or AdBlue injection with a BLUETEC catalytic converter is used will depend on the individual design concept of the vehicle. Regardless of which technical solution is used, BLUETEC makes diesel vehicles in every class the cleanest diesels in the world. BLUETEC diesel technology for Mercedes-Benz commercial vehicles combines highly efficient engines with an exhaust gas treatment system based on selective catalytic reduction (SCR) technology.

BlueTec is a combination of emissions technologies that will be rolled out in two phases. The Mercedes diesels coming this fall will be available only in 45 states. They'll use PM filters in the exhaust system. The E 320 utilizes a NOx adsorber-catalyst (NAC) system.

Then, in the fall of 2008, BlueTec will add a urea-injection system that will reduce oxides of nitrogen. Urea injection will enable Mercedes to sell its diesels in California, New York and at least three other states that have adopted California's clean-air standards. (Negotiations continue with EPA regarding the conditions under which urea systems can be approved.)

To be offered for sale nationwide, the car must be emission certified to the Tier 2 / California LEV II standards, which have not yet been met by a commercialized diesel car.

32. Demand For Diesel, Hybrid-Electric Engines Growing

Diesel and hybrid-electric engines are expected to continue their gain in market share through 2014 as fuel prices remain high, according to a study released by the Cleveland-based Freedonia Group Inc. From 1999 through 2004 demand for diesel internal combustion engines (ICE) have grown at an annual rate of 16.9%. Full hybrid engines with large high-voltage battery packs have grown 44.3% annually during the same period while mild hybrid engines have grown 126.3% annually.

Despite rapid gains in alternative power sources, the conventional spark ignition ICE will remain the dominant technology in the U.S. through 2014 because of its ability to cost

effectively meet tighter emissions standards and provide high power levels, according to The Freedonia Group.

33. Diesel Cars Highlighted At Auto Show

Five automakers revealed plans at the North American International Auto Show to introduce fuel-saving diesel engines in cars and trucks. Mercedes-Benz confirmed that it will introduce five diesel models beginning this fall (see discussion above). Honda, BMW, Nissan and the Chrysler group each confirmed plans to add diesels to their lineups over the next three to four years.

"All vehicle manufacturers are at least looking at the possibility of adding diesels to their cars and crossovers," said Anthony Pratt, senior manager for global powertrain forecasting at J.D. Power and Associates.

In the early 1980s, diesels virtually vanished from U.S. cars because of difficulty meeting emissions standards and issues such as noise, smoke and reliability. In the United States, Volkswagen is the only manufacturer that consistently offered diesel-powered cars. Now, cleaner fuel and breakthroughs in fuel injection and emissions technology are giving diesels a second chance. In 2005, Volkswagen sold more than 29,000 diesel-powered cars in the United States, and a top company executive said that the company could have sold even more.

The diesel's return comes after 18 months of record gasoline prices. Heavy-duty diesel pickups have proved popular, but hybrid-powered vehicles dominate the market for fuel-efficient cars. Consumers have been willing to pay a premium for the gasoline-electric Toyota Prius and Ford Escape Hybrid.

Several factors have convinced automakers that diesels are poised for a comeback. In September, low-sulfur fuel will be available in the United States. That, along with improvements in engine and aftertreatment technology, will allow diesels to meet the stringent new emissions standards. Also, a diesel engine is less complex to design, manufacture and service than a hybrid powerplant. Diesels are easier to install in existing vehicles, and their price premium of \$3,000 to \$5,000 is no greater than that of hybrid engines.

J.D. Power forecasts U.S. diesel sales will grow to 9 percent of light-vehicle sales in 2012, up from 3.2 percent last year. Plans include:

- BMW will have a diesel in the United States by 2008, said Burkhard Goeschel, BMW board member for purchasing and development.
- Nissan plans to put diesels in its Titan pickup and large SUVs, such as the Armada and Infiniti QX56. Unlike BMW, Nissan does not have a ready supply of truck diesels. But it could source an engine from International Truck & Engine Co., Detroit Diesel or another supplier.
- Honda Motor Co. is developing diesels for the United States. Honda already offers three gasoline-electric hybrids in its lineup. First, Honda will introduce a four-cylinder diesel for use in cars or light trucks. Honda wants to sell diesels in the United States by the end of the decade. Honda sells a diesel Accord in

Europe.

- Toyota executives have all but confirmed a heavy-duty diesel engine for the next generation of the Tundra pickup. Toyota does not build a truck-sized diesel engine, but it could adapt an engine produced by its truck-making affiliate, Hino Trucks.

34. Connecticut DEP Presents Diesel Emission Reduction Strategy

The Connecticut Department of Environmental Protection (DEP) has outlined measures for consideration by the General Assembly that would significantly reduce emissions from diesel buses and construction equipment. DEP also suggested other steps that could provide cost-effective approaches to improving the state's air quality.

The DEP analysis of pollution caused by diesel emissions and particulate matter is contained in a Clean Diesel Plan presented to the legislature's Environment Committee. The DEP concluded it would cost approximately \$20 million to retrofit or replace transit buses, school buses and construction equipment to meet the specific targets for diesel emissions reductions suggested in the 2005 legislation. These targets were:

- Transit buses: 85 percent reduction of diesel particulate matter by December 31, 2010;
- School buses: maximize the reduction of diesel particulate matter emissions and prevent diesel emissions from entering the passenger cabin of the buses by December 31, 2010;
- Construction equipment: maximize the reduction of particulate matter emissions servicing state construction projects valued at more than \$5 million by July 1, 2006. (Note: the Department of Transportation has already implemented this type of requirement.)

The DEP report suggests the legislature consider steps to reduce diesel emissions in areas beyond the "mobile sources" specified in its Special Act of 2005. These include:

- Consider the use of low sulfur and biodiesel blended home heating oil
- Address emissions from wood burning
- Develop a more comprehensive anti-idling strategy

Exposure to diesel pollutants, especially in urban areas, is exacerbated when diesel powered vehicles idle excessively. This poses serious health risks, especially for children, the elderly, and other sensitive groups. Excessive idling is also a waste of fuel. While there are anti-idling laws for school buses, broader legislative and legal enforcement action – including strong penalties for violations – is needed to reduce excessive idling by all types of motor vehicles.

- Encourage fleet turnover

Beginning with the 2007 model year, all new heavy-duty diesel engines will be required to meet federal emission standards that are more stringent than the emissions reductions recommended in Special Act 05-7. This requirement will help reduce diesel emissions – as well as other pollutants that contribute to unhealthy ozone levels – as the

operators of public transit and school bus fleets replace older vehicles. Tax incentives could be considered to encourage the earlier retirement and replacement of older buses, which would speed up air quality benefits of the new engines.

35. IRS and Treasury Provide Guidance to Hybrid Manufacturers

The IRS and Treasury have provided guidance on a process that manufacturers can use to certify the amount of credit the purchaser of a hybrid or lean burn vehicle can claim. Taxpayers who are purchasing these vehicles will be able to rely on the manufacturer's certification when they claim the credit on their tax return.

The tax credit for hybrid vehicles, which was enacted by the Energy Policy Act of 2005, may be as much as \$3,400 for those who purchase the most fuel-efficient vehicles. Many currently available hybrid vehicles will qualify for the tax credit. The guidance also provides a similar certification process for advanced lean burn technology vehicles.

Since taxpayers may claim the full amount of the allowable credit only up to the end of the first calendar quarter after the quarter in which the manufacturer records its sale of the 60,000th hybrid and advanced lean-burn technology motor vehicle, consumers seeking the credit may want to buy early in the year.

The Energy Policy Act also provides tax credits for motor vehicles that are not covered by today's guidance. The other vehicles eligible for credits are fuel cell vehicles, alternative fuel vehicles, and hybrid heavy trucks. The IRS will issue guidance providing certification procedures for these vehicles in the near future.

36. EPA Criticized For Neglecting Its Advisory Panel On Soot Standards

Scientists, advocacy groups and nine senators challenged the Bush administration's proposed air quality standards for microscopic soot particles, arguing U.S. EPA adopted the least stringent levels recommended by a panel of outside science advisers.

Bart Ostro, chief of the air pollution epidemiology unit at California EPA, said the White House Office of Management and Budget and others outside the government influenced the proposal with edits and opinions that circumvented the peer-reviewed recommendations of EPA's Clean Air Science Advisory Committee. EPA's plan to change the fine particulate matter standard includes passages that "overstate uncertainty and misrepresent the scientific consensus," Ostro said during an EPA-sponsored teleconference on the soot proposal.

Echoing Ostro's allegations, the American Lung Association's Debbie Shprentz said the role of the White House and others could have a chilling effect on the EPA advisory panel's future efforts. "Who are these folks, and why are they more credible than the leaders of our nation's leading air pollution research centers?" she said.

Eight Senate Democrats and Vermont independent Sen. Jim Jeffords, the ranking member of the Environment and Public Works Committee, also expressed concern

about the EPA proposal. In a letter to EPA Administrator Stephen Johnson, the lawmakers said the science panel's recommendations should be heeded as the administration works toward issuing a final regulation by September 27th.

The senators also took issue with a separate but related administration order to review the entire scientific and regulatory process used for establishing safe levels of air pollutants. EPA Deputy Administrator Marcus Peacock, a former senior White House OMB official, issued a memo on December 15th, 2005, calling for a "top-to-bottom" review of the air pollution standards process to ensure it reflects the latest in scientific standards and methods.

Of both air pollution issues, the senators wrote, "Playing politics with public health is unconscionable."

CASAC is a 22-member board created by Congress that includes scientists from New York University, Harvard Medical School and the National Jewish Medical and Research Center in Denver. After a review of the latest studies on fine particulates, the panel concluded last summer that the administration would be justified in adopting new annual and daily standards for the federal soot limits. The scientists said EPA could take annual levels from the current 15 micrograms per cubic meter requirement down to between 13 and 14 micrograms. For the 24-hour threshold, the scientists said EPA would be justified in cutting the levels from 65 micrograms to between 30 and 35 micrograms.

But EPA's proposal released in December departed from those recommendations and suggested keeping the annual standard at the same level. EPA did propose dropping the 24-hour standard to 35 micrograms per cubic meter.

In remarks during the teleconference with the science advisers, EPA officials explained that they agreed with many of the panel's conceptual recommendations. But the agency opted to take a different course and said that too many scientific uncertainties remain. "We've made every effort to explain the reasons for any such differences and we solicit broad public comment on the ranges you've identified," said EPA's acting air chief, William Wehrum.

EPA's proposal to change the fine PM standards is now the subject of a 90-day public comment period slated to end April 17.

37. EPA Suggests 15-Year Compliance Window With New Soot Limits

Some of the nation's most polluted areas may not be required to achieve new federal soot standards for another 15 years or more under a series of potential compliance schedules offered by U.S. EPA. EPA did not name which areas could have the most time to meet any new limits for microscopic particles but it did indicate that states with the dirtiest air may be given the most time to comply.

In the case of a new limit on the smallest fine particles, final cleanups could be delayed until 2020, EPA said. And for inhalable coarse particles -- a level of air pollution that EPA is currently considering regulating for the first time -- deadlines could be stretched until 2023.

Current soot levels, set in 1997 by the Clinton administration, were upheld over industry challenges by the Supreme Court in 2001. Since EPA is still in the implementation stage for the 1997 limits, the Bush administration agreed to open a 60-day comment period in order to address early concerns about the overlap between the old limits and any new ones. To solicit feedback, EPA spelled out some of the potential compliance deadlines for its proposed new soot levels.

38. EPA May Allow 3 PPM 'Adjustment Factor' In Ultra-Low Sulfur Diesel

To make up for disparities in diesel sulfur test results, oil companies may get further EPA relief in meeting the 15 parts per million (ppm) diesel sulfur regulations for ultra-low sulfur diesel (ULSD) in the form of an increase in the sulfur content "adjustment factor," from the current 2 ppm to 3 ppm, for two years. The need arises from the disparity in results from diesel sulfur content tests that use the same samples, same test, but at different labs. This is referred to as reproducibility as opposed to repeatability, which is the same sample, the same test at the same lab.

Refiners would still have to produce a 7 or 8 ppm fuel for injection in pipeline systems. However, if EPA allows the extra 1 ppm margin, fuel at the pump could contain 18 ppm sulfur and still meet ULSD specifications for the first two years of the transition.

Tests runs of ULSD through major pipelines demonstrated significant sulfur contamination, in some cases as much as 7 ppm or more. A rule of thumb is each hand off from one pipeline segment to another or pipeline to a terminal adds 1 to 2 ppm of sulfur contamination. If diesel fuel leaves the refinery gate with a sulfur content of 8 ppm and picks up 7 ppm before it reaches the retail pump, under the current EPA regulations, any more than a 2 ppm variation on the plus side would bump the entire fuel shipment into non-compliance. This would lead to downgrading a valuable highway diesel fuel to off-road fuel (or would require it be re-refined).

39. Refinery Shutdowns May Complicate Ultra-Low Sulfur Diesel Transition

A number of refineries may be off-line for potentially several weeks leading up to the June 1 deadline for making the switch to producing ultra-low sulfur diesel (ULSD), possibly causing supply disruptions, according to some in the oil industry. The schedule for refiners to make the switch to ULSD has been compressed by shortages of skilled labor and specialized equipment, and compounded by aftershocks of the Gulf Coast hurricanes.

Refiners must begin producing the clean, 15 parts per million (ppm) sulfur content, diesel fuel by June 1. In fact, refiners must produce diesel fuel with a sulfur content of between 4 and 5 ppm so that it leaves the refinery gate with a sulfur content of no more than the 7 or 8 ppm that pipeline companies are demanding so that it can be delivered to retail stations at the 15 ppm standard. The more than 95-percent reduction in sulfur, from the current 500 ppm standard for highway diesel fuel, entails major overhauls of diesel units

at most major U.S. refineries.

The twin Gulf Coast hurricanes impacted not only refineries but companies that manufacture equipment needed to overhaul distillate units in order to produce ULSD. Repairing shut-in refineries and damaged ones also drew skilled labor away from distillate unit overhaul projects to undertake basic refinery repairs, further impacting progress toward meeting the June 1 ULSD deadline. Press reports indicate that as 10 refineries have sent EPA force majeure letters citing hurricane fallout as the reason they may not be able to meet the June 1 deadline.

The outages could last anywhere from two weeks to one month and more. A case in point is a relatively small refinery in Colorado, a region that would be less affected by hurricane induced shortages than the Gulf Coast, that Oil and Gas Journal reports will have "some units that will be idle for as many as 42 days." The good news is that this refinery as well as others with units being shut down will have a host of different upgrades made that will result in increased capacity. In the case of the Colorado refinery it will have a greater capacity to handle problematic heavy, sour crudes coming from the tar sands of Alberta. The same is likely true for many of the refineries undergoing upgrades, they will emerge with higher capacities to make cleaner fuels from dirtier crudes. This should result in increased distillate production in the long-run.

Even though ULSD does not have to be sold at the retail level until Oct. 15 refinery shutdowns in late spring could impact the diesel fuel market well before that. It also comes at a time of a confluence of fuel regulations take, or have taken effect. Low sulfur gasoline regulations became effective Jan. 1. The switch to summer gasoline begins April 1 followed closely by the repeal of the Clean Air Act's oxygen mandate, May 5, which will have little immediate effect on gasoline blending.

40. Bodman Cites Cellulosic Ethanol Breakthrough In Biomass Budget Hike

The Bush administration's dramatic budgetary shift towards biofuels was spurred by cost breakthroughs in producing fuel ethanol from cellulosic materials, such as agricultural and forestry waste, according to Energy Secretary Samuel Bodman. Bodman confirmed the administration is seeking to exploit the new breakthroughs, while at the same time denying that enthusiasm for hydrogen economy is waning.

Speaking to reporters at the launch of the 2007 budget cycle, Bodman said the administration's energy policy was focusing on technologies "best positioned to yield results in our lifetime, my lifetime." A massive increase in the use of biofuels, mostly ethanol, is the linchpin of President Bush's call for reducing oil by the equivalent of 75 percent of expected imports from the Middle East in 2025, a figure estimated to be 4.5 million barrels per day. Last week top White House economic policy adviser Allan Hubbard said, "We will have the capability of producing 60 billion gallons of ethanol from cellulosic material."

To that end the budget request for fiscal year 2007 calls for a 65 percent increase in DOE's "biomass and bio-refinery systems R&D," from the \$90.718 million Congress appropriated last year to \$149.687 million requested, an additional \$60 million. To give some idea what a dramatic shift in policy this represents, just three years ago the

administration only requested \$78.558 million for the program, which would have represented a 25 percent cut in the \$109.333 million Congress appropriated for 2003. Congress ended up appropriating \$93.977 million, almost a 15 percent reduction.

Another program that saw an equally startling turnaround is solar, from the administration's 2004 request of \$79.693 million to the 2007 request of \$148.372 million. Using solar power to produce electricity for powering a hydrolysis process is seen as one of the greenest ways to produce hydrogen. Another path to green hydrogen, wind power, also would see a healthy boost in budget, from \$38.857 this year to \$43.819 in 2007, a 12.8 percent increase, or almost \$5 million.

President Bush's signature energy initiative in his 2003 State of the Union message, the FreedomCAR (Cooperative Automotive Research) program would also enjoy an increase in funding if Congress goes along. The total request for the hydrogen initiative is \$289 million, up \$53 million. While the administration is still on a path of funding research, development and deployment of fuel cell vehicle prototypes to allow for an auto industry decision on commercialization of the technology by 2015, others have become more circumspect. For example, it is reported that there was only one fuel cell vehicle at this year's Detroit auto show.

The fault lines between supporters of new fuels and vehicles could occur in Congress if hydrogen funding is seen to be competing with biomass funding. Already energy committee Democrats have ripped the administration for undercutting hydrogen funding levels called for in the energy law enacted last August. The Energy Policy Act of 2005 calls for \$560 million in funding for hydrogen programs while the administration's request is only for \$195.8 million, according to a side-by-side comparison put out by energy committee Democrats.

Ethanol is one of those issues that unites across party lines and divides across regional ones. Farm state Democrats and Republicans love it, East Coast and West Coast lawmakers have been less than enthusiastic. By adding the cellulosic aspect to it, California rice farmers would have an outlet for their hulls and straw waste and New York lumber and paper mills would have an outlet for their waste. Cellulosic ethanol also unites national security conscious conservatives and environmentally aware activists. It is seen as both a way to reduce dependence on imported oil and part of a strategy to reduce greenhouse gas emissions from the transportation sector. In fact, observers saw much of the administration's new energy policy borrowed from Democrats and a group of conservatives and activists calling themselves the Set America Free coalition.

Ethanol in and of itself has several advantages over the gasoline it displaces. Erecting ethanol plants, whether corn or cellulosic ones, does not attract the types or vehemence of opposition building a new greenfield refinery would. Almost 100 ethanol plants are currently under construction in the U.S today, adding 1.5 billion gallons of volume over the next 18 months, according to the Renewable Fuels Association.

Although ethanol has to be for the most part transported to gasoline terminals it has the advantage of not having to go through traditional oil hubs, such as the Gulf Coast. Therefore, after Hurricane Katrina and a significant portion of the U.S. gasoline production capacity was shut in, spot ethanol prices rose even faster than gasoline prices, more than doubling almost over night. Oil companies saw the fuel as a way to immediately make up for at least some of the supply disruption in the Gulf Coast.

41. California Air Board Targets Trucks Crossing Border From Mexico

On January 26th, the California Air Resources Board approved revisions to its roadside inspection program to allow fines for heavy-duty diesel vehicles not certified to meet U.S. emission standards or better. Adopted in a unanimous voice vote, the action primarily targets foreign purchased and registered commercial vehicles operating in California, particularly those crossing the border from Mexico.

CARB developed the regulations to implement legislation enacted in 2004 (A.B. 1009) making it illegal for commercial vehicles weighing more than 10,000 pounds to enter and operate in California unless their engines meet the U.S. emission standards required for their year of manufacture. A.B. 1009 also required operators of the vehicles to carry evidence documenting compliance with federal standards.

To implement the law, CARB opted to expand the existing Heavy-Duty Vehicle Inspection Program, which is used to reduce excess smoke emissions caused by poorly maintained diesel vehicles or by tampering with emissions control equipment. Any commercial vehicles found through roadside inspections without a label affixed to the engine verifying compliance with the U.S. standards will be fined \$300 for the missing label and another \$300 for operating a noncompliant engine.

However, for the first year the regulations are in effect, truck owners would first receive a "fix-it" ticket that would waive the penalty if the owner obtains a replacement label from a manufacturer-authorized engine repair or service facility within the 45 days of the citation date.

Costs to replace the labels will range from \$30 to \$150 per engine, depending on the age and weight of the vehicles, CARB said. Noncompliant vehicles will have to be replaced with U.S. certified equivalents, according to CARB. The agency said it will cost \$15,000 to replace a noncompliant engine with one certified for the United States.

Fleetwide compliance costs will total about \$20 million, CARB estimated.

In response to concerns from the California Trucking Association, CARB will propose a change to the regulations before they become final that would allow truck owners to show other documentation, such as a document from the truck manufacturer demonstrating when it was built and its compliance with applicable emissions standards, to avoid penalties. The provision would apply to trucks found to be without a label after the one-year "fix-it" ticket period ended, Tom Cackette, CARB chief deputy executive officer, told the board.

CARB will issue a 15-day notice of the proposed change, which will trigger a 45-day public comment period. After that comment period, the board must approve the change before the entire regulatory package can become final.

About 3,500 Mexican commercial vehicles currently cross into the state each day to operate within the commercial zone along the California-Mexico border, an area that extends from five miles to 20 miles inside the border. When cross-border travel

restrictions are lifted pursuant to the North American Free Trade Agreement, five times as many Mexican vehicles may be crossing the border, according to state analysts.

A.B. 1009 and CARB's implementing regulations seek to curb diesel emissions from vehicles largely based in Mexico, where emissions standards for commercial vehicles for the 2004 model year are less stringent than those in the United States and Canada. CARB data indicate about 1 percent of the 400,000 heavy-duty commercial vehicles operating in California do not meet federal emissions certification standards. In 2006 alone, these engines will account for 2.9 tons a day of excess of NOx and 0.12 ton a day of particulate matter, CARB said in a report.

The new regulations also will prevent future excess emissions from the noncompliant vehicles as trade around the state's cargo ports expands and border crossings are removed, CARB said.

CARB's legal staff concluded the regulations do not conflict with NAFTA or laws involving foreign commerce, the agency said in its report.

The agency put the cost of the regulations at \$1.09 per pound of NOx and PM reduced for 2004 and newer vehicles and \$10.62 per pound for NOx and PM reduced for pre-1993 model year vehicles. Using only federally certified vehicles for cross-border trips would reduce compliance costs significantly, CARB said.

42. U.S.-Mexico Board OKs Report On Air Quality, Protection of Cultural Sites

On January 25th, the good neighbor Environmental Board approved a draft ninth report that included recommendations on air quality related to transportation and protection of the U.S.-Mexico border region's cultural resources. An overriding theme to the report, as with many binational issues between the United States and Mexico, is the need to develop integrated, binational structures for overcoming the barriers associated with the clash of two governmental systems.

The board members held a teleconference to reach consensus on the draft report, as required under the Federal Advisory Act, according to Elaine Koerner, the designated federal officer to the board.

Absent a few technical changes and editorial polish, the existing draft report will be the same one released March 14 when the Good Neighbor Environmental Board meets in Washington, D.C.

The draft report said that "chronic" sources of air pollution are the border crossings between large sister cities such as Tijuana and San Diego or El Paso and Ciudad Juarez.

"And looming on the horizon," it predicted, "is an additional scenario that could create even more cross-border traffic: As the ports of Los Angeles and Long Beach [Calif.] become increasingly congested, Mexican seaports could serve as viable alternatives, and Mexico could become a 'land bridge' to the United States for millions of sea-borne containers each year."

The Good Neighbor Environmental Board advises the president and Congress on how the U.S. government can work with partners to improve the environment at the border.

While reviewing a number of efforts between the countries' federal governments, as well as individual states or municipal bodies, the report said cross-border planning entities have failed to generate a list of common priorities or mutual time lines.

By way of example, the report highlighted a proposed crossing, designated as a priority by both governments, between the Mexican state of Sonora and Arizona. Mexico began the process of identifying a concessionaire to build its facility, but President Bush's fiscal year 2006 budget provided no funding.

As such, the report called for the development of a long-range plan integrating border stations and transportation infrastructure priorities as well as the passage of corresponding multiyear authorization bills.

The report again lauded ongoing efforts at applying new fuel technologies in the region, such as that announced in Tijuana, Mexico, in October to accelerate the introduction of cleaner diesel fuels along the border ahead of that country's interior regions. Nonetheless, there are barriers to emissions reduction such as a lack of data on Mexico's drayage fleet and a "lack of necessary binational mechanisms in border communities to encourage cleaner passenger vehicles."

Another major source of air pollutant emissions are older cars that do not meet federal or state emissions standards being sold as "junk cars" in Mexico. The report called for a requirement that U.S. sellers of cars south of the border "certify that their cars meet basic U.S. and local emissions standards."

The report recommended greater use of mass transportation systems and the development of these between the two countries.

The report's second part focused on "the dynamic interplay among the region's cultural resources, their surrounding natural resources, and the region's environmental quality." The board chose to emphasize the importance of the border region's many archaeological sites and the threats urban development, foot traffic, off-road vehicles, and trash associated with illegal immigration represent to them.

The report highlighted a lack of financial resources and the improper inventory of such cultural resources as factors exposing them to vandalism or simple neglect. It urged increased public/private partnerships, the designation of "National Heritage Areas," increased monitoring of archaeological sites, and stronger public education about their value.

43. U.S. Development Program Revises Environmental Guidelines for Projects

A U.S. government-sponsored corporation that provides economic assistance for developing countries released revised its guidelines on January 24th to ensure funded projects do not harm the environment. The Millennium Challenge Corporation (MCC) issued revised guidelines that require environmental impact assessments for projects

that have "the potential to have significant environmental and social impacts that are sensitive, diverse, or unprecedented, and that may affect a broad area." Examples include crude oil refineries, power plants with output of 300 megawatts or more, nuclear fuel processing, and iron and asbestos extraction and processing.

The corporation issued interim guidelines March 4, 2005, "to help ensure that MCC-funded projects are environmentally sound," according to a January 24th corporation statement. The corporation revised the guidelines to reflect comments it received on the interim guidelines, the statement said.

According to the guidelines, the corporation may not provide assistance for any project that is "likely to cause a significant environmental, health, or safety hazard." In addition, the guidelines said, "implementing entities will be expected to incorporate timely, participatory, and meaningful public consultation in the development of Compact-related Environmental Impact Assessments, analyses, and Environmental Management Plans."

44. NAFTA Agency Ties Asthma to Pollutants on Children in North America

On January 26th, the Commission for Environmental Cooperation warned that the growing incidence of childhood asthma across North America may be directly related to children's exposure to outdoor and indoor air pollution. Data on the incidence of asthma in children provided by the United States, Canada, and Mexico point to a rising number of childhood asthma cases, the CEC said in a statement accompanying its first report on environmental indicators and children's health in North America.

"One possible contributor is outdoor air pollution, such as ground-level ozone and particulate matter, which remains a problem for all three countries," added the CEC, which was established to oversee the environmental side agreement to the North American Free Trade Agreement. Exposure to indoor environmental pollution also remains an issue, the agency said in *Children's Health and the Environment in North America*.

Smoke from indoor burning of wood or charcoal is a problem in Mexico, where 18 percent of the population still used those materials in 2000 for cooking and heating, it said. And while children in the United States and Canada are increasingly less likely to be exposed to tobacco smoke, U.S. data show that some minority groups remain disproportionately exposed to it.

Likewise, the report noted that children continue to be exposed to large amounts of toxic chemicals released to the environment. Although available data indicate that lead levels in children's blood are declining, particular socioeconomic groups remain at higher risk of exposure.

"On the positive side, available data indicate that pesticides residues in foods in Canada and the United States, and acute poisonings in Mexico, are on the decline," the report said.

The report stressed that the data represent only a first step in addressing the health impacts on children of environmental issues. Significant data gaps and comparability

issues remain that must be addressed before the reporting system can be considered "robust," the CEC said.

The CEC noted that economic status remains an important determinant of child health, as children living in poverty are more likely to be exposed to multiple environmental risks. That remains an issue in North America, where a proportion of children are living in poverty in each of the three countries, it said. "In Canada, 15.6 percent of children lived in families with an income level below the low-income cutoff in 2001, while 24.2 percent of Mexico's total population reported difficulty in obtaining basic necessities such as food. In the United States, 16.1 percent of children were living in conditions below the nationally defined poverty level in 2001," according to the report.

45. Large Canadian Industrial Firms Moving to Control Carbon Emissions

On February 2nd, the Conference Board of Canada issued a report which found that large industrial emitters in Canada are acting to reduce their carbon dioxide emissions. The companies' actions are driven partly by their commitments to environmental stewardship, but are also part of a forward-looking effort to improve efficiency, David Greenall, a senior research associate with the Ottawa-based private sector think tank, said in the report.

"Large, energy-intensive Canadian industrial emitters are positioning themselves to manage the transition to a carbon-constrained near-term future," he said. "They are building their capacity to understand, evaluate, and implement corporate approaches to carbon management." He added, however, that "in some areas, there is more that companies can do to successfully manage this transition."

Canadian regulatory requirements for carbon dioxide emissions reductions are still unsettled, and so companies are "somewhat cautious" in their approach, but some are taking action early in a bid to spread cost of reducing emissions over a longer time period, he said.

The report, *Carbon Management Strategies of Canadian Industrial Emitters: Competing in a Carbon-Constrained World*, is based on a survey of 60 medium and large corporations in the electricity generation, mining, and manufacturing sectors.

According to the report, 85 percent of respondents indicated that their companies have assessed their physical positions regarding carbon emissions, and 63 percent have assessed how emissions regulations might affect their financial position.

Nevertheless, corporate reporting of carbon risks and management strategies remains inconsistent, Greenall said. "Disclosure on carbon management issues in publicly traded companies' securities filings is both limited and inconsistent," he said. "Where carbon issues are included, the discussion usually flags the issue but does not provide substantive information to improve the investor's ability to assess future projects."

Other highlights of the report included:

- companies are starting to use carbon pricing, with 77 percent of survey respondents indicating that they factor "shadow" carbon prices into corporate economic analyses and investment planning and appraisals;
- although overall awareness of carbon issues is high, 35 percent of respondents said the extent of their integration into overall business strategies is low;
- 60 percent of survey respondents' corporate finance departments are not yet engaged in overall carbon management; and
- two-thirds of respondents said they are likely to participate in a domestic carbon trading market, but 35 percent said they did not plan to trade or purchase international carbon emissions reduction credits.

The report is based on a survey conducted between November 2004 and November 2005 of Canadian companies deemed likely to be subject to proposed federal regulations governing carbon emissions of large final emitters. Of 224 questionnaires, 60 were completed and returned. The responding companies included 17 in the oil and gas sector, 10 electricity generators, 10 pulp and paper producers, eight mining companies, and eight chemical producers.

46. Two U.S. Senators Release White Paper On Proposal to Limit GHG Emissions

On February 2nd, U.S. Senators Jeff Bingaman (D-N.M.) and Pete Domenici (R-N.M.) released a white paper outlining key policy questions for regulating carbon dioxide and other greenhouse gas emissions, the first step toward the senators' plans for bipartisan Senate legislation proposing mandatory curbs later this year. Release of the paper, *Design Elements of a Mandatory Market-Based Greenhouse Gas Regulatory System*, will be followed by a request for public comments and a conference gathering climate change experts this spring, according to Bob Simon, a Democratic staff director for the Senate Energy and Natural Resources Committee. The senators hope to build a consensus on joint legislation that they hope to introduce later in the year, Simon said.

The collaboration between Domenici, chairman of the Energy and Natural Resources Committee, and Bingaman, the committee's ranking Democrat, is being closely watched by industry groups and environmental organizations. Bingaman in December announced he would introduce by late 2006 a bill that would place a mandatory cap on U.S. carbon dioxide emissions and include a mechanism for industries to trade greenhouse gas allowances. Domenici has not specifically outlined whether he would support a similar approach, but the chairman has suggested over the last year that some form of mandatory curbs on greenhouse gas emissions is inevitable and agreed last summer to work with the Democrat toward a compromise bill.

Simon, the committee staff director, predicted it would be "very difficult" to get legislation through the energy committee and passed by the Senate in 2006. The senators hope that discussions over the white paper and the spring conference will be followed by hearings, incremental steps they believe are necessary to gain support from a majority of senators toward some form of mandatory greenhouse gas limits.

Alex Flint, the Republican staff director for the committee, said Domenici "believes some sort of greenhouse gas limitations will be inevitable" and said addressing climate change

remains one of the chairman's "top four or five" legislative priorities, along with natural gas, nuclear waste disposal, and other energy issues.

According to the document, the senators intended the white paper to "lay out some of the key questions and design elements of a national greenhouse gas program in order to facilitate discussion" and establish consensus around a specific bill.

The regulatory options outlined in the paper range from regulating U.S. industries "economy-wide" to addressing only some mix of specific energy-dependent sectors, such as transportation, commercial, and residential activities that actually emit greenhouse gases.

According to the paper, the two senators "recognize that there are many ways to structure such a regulatory program and that there are entirely different approaches that might include a carbon tax, technology incentives, and voluntary programs, but we have limited our consideration here to 'mandatory, market-based systems' contemplated by the Sense of the Senate" resolution approved by the chamber in June. The resolution, while not binding as legislation, said Congress should enact "a comprehensive and effective national program of mandatory, market-based limits and incentives on emissions" while cautioning that any legislation should not "significantly harm the United States economy."

The senators said they hope the paper lays the groundwork "for a national program that would achieve" the objectives of that nonbinding Senate resolution.

The first decision for the Senate, the paper suggests, is determining whether to construct an economy-wide regulatory program or to address specific industry sectors. The second decision, it said, is whether to regulate greenhouse gas emissions early (or upstream) in their "life cycle" by regulating energy producers such as petroleum, coal, and natural gas, or downstream, where emissions are ultimately released by the transportation, commercial, industrial, and residential sectors.

Other decisions include whether to launch a cap-and-trade system, akin to the emissions trading system already launched in the European Union, under which overall emissions are capped and firms trade rights to such emissions, called allowances. Other key questions include how those allowances would be distributed and whether a portion of the allowances should be reserved to stimulate new technologies or help low-income consumers address any increased fuel and heating costs that might occur as a result of a new federal regulatory system.

47. Mexican Industry Takes Voluntary Action Against Climate Change

Mexico's environment ministry (SEMARNAT) has recognized fifteen major companies for publicly reporting their greenhouse gas emissions through a voluntary public-private initiative known as the Mexico Greenhouse Gas (GHG) Program.

The Mexico GHG Program, the first of its kind in a developing country, is a voluntary program established in 2004 through an agreement between the Mexican Secretariat of Environment and Natural Resources, the World Resources Institute (WRI) and the World

Business Council for Sustainable Development (WBCSD). Mexico-based CESPEDES is also involved as a program administrator.

The companies being recognized are: Altos Hornos de Mexico, Grupo Cementos Chihuahua, Cooperativa La Cruz Azul, CEMEX, Cementos Portland Moctezuma, Ford de Mexico, Grupo Modelo, Grupo Porcicola Mexicano, Holcim Apasco, Mittal Steel Lazaro Cardenas, NHUMO, PEMEX, SICARTSA/Villacero, Siderurgica Tultitlan, and Sumitomo Corporativo de Mexico. The GHG emissions reported by this group represent roughly 25 percent of total national emissions generated by stationary combustion (heat and electricity generation) and industrial processes.

The Mexico GHG Program provides technical tools and training to develop inventories of corporate GHG emissions based on the accounting and reporting principles of the WRI/WBCSD Greenhouse Gas Protocol. Companies that participate in the program can identify opportunities to improve their energy efficiency and develop effective strategies to participate in carbon markets and reduce GHG emissions.

Twenty-seven companies in Mexico are currently participating in the program, including those from the most-energy intensive sectors. The entire cement and petroleum sectors are engaged, as well as major representatives of the iron and steel sector. Besides the companies being recognized, twelve more are currently in the process of developing GHG inventories.

On August 25, 2004, Mexico became the first country to adopt the GHG Protocol Corporate Standard, published three years earlier by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD).

The activities of the Mexico GHG Program are supported by SEMARNAT, WRI, WBCSD, the US Agency for International Development, and the Global Opportunities Fund of the British Embassy in Mexico.

48. ARB Applauds Diesel Identification Ruling

The California Air Resources Board (ARB) has applauded a decision by the Superior Court of California, Fresno County that affirms the legality of the 1998 identification of diesel particulate as a toxic air contaminant (TAC).

"We are pleased the court has confirmed that the ARB acted within its authority and used appropriate scientific procedures. This ruling allows us to continue our vigorous efforts to reduce the public's exposure to diesel particulate," said Catherine Witherspoon, ARB Executive Officer.

In 1998, the state's Scientific Review Panel and staffs of the Office of Environmental Health Hazard Assessment (OEHHA) and the ARB presented the Board with evidence on the health impacts of supporting the identification of diesel particulate as toxic. After hearing more than six hours of testimony the Board identified diesel particulate as a toxic air contaminant. Once a compound has been identified as toxic, California state law then requires the ARB to reduce public exposure.

In 2000, the ARB developed its Diesel Risk Reduction Plan that set the goal of cutting diesel emissions by 85 percent by 2020. The plan includes a series of measures designed to achieve that goal. As part of that plan the Board has adopted measures that require the use of low sulfur diesel fuel in most applications statewide, tighter tailpipe limits on in use diesel trucks and buses and to control emissions from port equipment and ships operating in California waters.

"Since the Board's 1998 identification further evidence of the potential health damage from fine particles has been found, making that decision an even more important step in protecting public health," Witherspoon added.

49. UPS Expands 'Green Fleet' with 50 Hybrid Electric Vehicles

UPS has announced it had placed an order for 50 new-generation hybrid electric delivery trucks and also would acquire 4,100 low-emission conventional vehicles during 2006. The hybrid electric vehicles (HEV) are being purchased in two sizes from International Truck and Engine and Freightliner LLC. The trucks will feature lithium ion batteries that are capable of faster-charging and have a longer life than batteries used in previous generations of HEVs. The truck bodies will be identical externally to the signature-brown trucks that now comprise the UPS fleet.

The first of the 50 HEVs will be deployed in Dallas this June and will join more than 10,000 low emission and alternative-fuel vehicles already in use. The UPS alternative fuel fleet -- at 1,500 vehicles one of the largest in the United States -- currently includes trucks powered by compressed natural gas, liquefied natural gas, propane, electricity and hydrogen. Research also is underway with the Environmental Protection Agency on a hydraulic hybrid drive train.

"We're excited to be among the first to deploy this latest in HEV technology because it promises a 35% increase in fuel economy in addition to a dramatic decrease in vehicle emissions," said Robert Hall, UPS's fleet environmental manager. "UPS has been involved in HEV research for more than eight years, but that's just one part of a multifaceted strategy to reduce fuel dependency, cut greenhouse emissions and in the long run, reduce operating costs."

The 50 HEV delivery trucks collectively are expected to reduce fuel consumption by roughly 44,000 gallons over the course of a year compared to a normal diesel truck. The hybrids also should reduce by 457 metric tons the amount of CO₂ gases released into the atmosphere over the course of a year. The 4,100 low emission vehicles offer a 15percent improvement in fuel economy over the vehicles that will be retired. These vehicles will save roughly 1.5 million gallons of fuel over the course of a year, emitting 16,000 fewer tons of CO₂.

A hybrid electric vehicle replaces a conventional engine and transmission with a small fuel-efficient diesel engine that acts as a generator to provide electrical energy for batteries and drive motors, which in turn assume the primary role of powering the vehicle. When additional power is required, the truck can draw it directly from the small engine.

The hybrid electric vehicles also use what is known as regenerative braking, meaning

the energy generated when stopping the moving vehicle is captured and returned to the battery system as electrical energy.

UPS was the first package delivery company to introduce a HEV into daily operations with a research program it launched in early 1998. In 2001, the company deployed the industry's first hybrid electric package car into regular service in Huntsville, Ala., where the truck worked a 31-mile route with about 160 pickups and deliveries each day. UPS then introduced its second generation HEV to its Kalamazoo, Michigan fleet in 2004, while at the same time deploying the first hydrogen fuel cell delivery trucks into regular service.

While continuing to develop its alternative fuel fleet - UPS already has invested more than \$15 million in the effort - the company also has purchased and is operating more than 8,800 low emission conventional vehicles. These vehicles have regular gas- and diesel-powered engines but employ the very latest technology and manufacturing techniques to reduce emissions as much as possible.

The majority of the 4,100 low-emission vehicle chassis to be purchased in 2006 will be made by Freightliner LLC and will enter the UPS fleet throughout the year, allowing the retirement of older trucks.

"Our long-term goal is to minimize dependence on fossil fuels, and we will get there by deploying a wide variety of new automotive technologies in our fleet," Hall said.

50. EPA to Cut Benzene and Other Toxic Emissions

Toxic fumes from gasoline, vehicles and gas containers would drop significantly and further reduce health risks under proposed new emissions standards just announced by EPA Administrator Stephen L. Johnson. By 2030 EPA's proposed Mobile Source Air Toxic (MSAT) regulations and fuel and vehicle standards already in place will reduce toxic emissions from passenger vehicles to 80 percent below 1999 emissions.

The MSAT proposal would set new benzene standards for gasoline, hydrocarbon emissions standards for passenger vehicles at cold temperatures and evaporative standards for fuel containers. Once the new standards are fully implemented in 2030, they are expected to reduce emissions of mobile source air toxics annually by 350,000 tons, including 65,000 tons of benzene. The estimated annual cost for the entire proposal would be \$205 million. EPA estimates annual health benefits from the particulate matter reductions of the vehicle standards to total \$6 billion in 2030.

Today's action would also harmonize federal and California evaporative emission standards for light duty vehicles.

The proposed MSAT standards would take effect in 2011 for fuel requirements, 2010 for passenger vehicles, and 2009 for fuel containers.

SOUTH AMERICA

51. Huancayo, Peru Issues Clean Air Plan the Officials Hail as 'Model'

On February 2nd, Peru's highland city of Huancayo issued a "Clean Air Plan" to reduce air pollution from nitrogen dioxide, sulfur dioxide, lead, and fine particulate matter. All Peruvian cities are required to develop such plans under the Air Quality Standard of 2001. Thirteen cities nationwide are currently preparing plans.

According to Huancayo Mayor Fernando Barrios, his city's plan has national importance because of the city's location in the heart of the fertile Mantaro Valley, Peru's breadbasket.

Peru's National Environmental Council (Consejo Nacional del Ambiente, CONAM) is hoping that the Huancayo plan can serve as a model not only for other cities in Peru but also for other countries with mountain regions.

Meanwhile, Peru's National Weather Service is conducting an acid rain study, drawing on data from 14 stations that measure acidity in rain. The principal contributor of acid rain in the Mantaro Valley is the La Oroya smelting complex owned by U.S.-based Doe Run Peru, officials said. CONAM lists the multi-metal smelting complex as a "persistent polluter."

The acidic level in rain around La Oroya is 3.5, while normal rain has a pH around 5.6, officials said.

Nevertheless, according to CONAM, vehicle emissions are the principal source of air pollution in Huancayo.

ASIA-PACIFIC REGION

52. Tightened Vehicle Emission Standards Take Effect In Hong Kong

Starting from January 1, 2006, all newly registered light motor vehicles are required to comply with the Euro IV emission standards while emission standards for diesel private cars will be tightened up to the most stringent Californian standards.

Under the Amendment Regulation, newly registered motor vehicles having a design weight up to 2.5 tons and newly registered diesel private cars are required to comply with the tightened emission requirements.

"The tightened standards will help reduce emissions from motor vehicles further. A Euro IV light duty vehicle emits about 50 per cent fewer pollutants than a Euro III one," a Hong Kong spokesman added.

The Amendment Regulation also requires those vehicles weighing between 2.5 tons and 3.5 tons to comply with the Euro IV standards from January 1, 2007, at the same time when the European Union will be introducing the standards.

To improve air quality, the Government has been implementing a comprehensive

program since 1999 to reduce emissions from motor vehicles. Under the program, it is the Government's plan to continue tightening up vehicle fuel and emission standards in tandem with the European Union as well as to introduce the most stringent available emission standards for diesel private cars.

"The comprehensive program is in good progress," the spokesman said, citing that the suspended particulates and nitrogen oxides emitted by motor vehicles in the urban areas had been reduced by 79 per cent and 41 per cent respectively by September 2005.

"Nowadays, virtually all taxis use LPG as fuel. Over 60,000 pre-Euro diesel vehicles have been retrofitted with emission reduction devices. Smoky vehicles have also been reduced by about 80 per cent," he added.

"We also plan to tighten the emission standards for vehicles over 3.5 tons from October 1, 2006. The legislation drafting work is in progress and will be submitted to the Legislative Council for approval when ready," he added.

53. Singapore Introduces Tax Incentives To Encourage Use of Cleaner Vehicles

On December 30th, Singapore's National Environment Agency and Land Transport Authority (LTA) jointly announced a new incentive package for vehicles that use clean fuels or that meets the EU's strict Euro IV emissions standards. The agencies said in a statement that an exemption from the special tax applied on cars would be extended for compressed natural gas (CNG) taxis from the end of 2005 to Dec. 31, 2007, as would a 40 percent rebate on the additional registration fee (ARF) paid when CNG taxis are registered with the LTA. The ARF is usually assessed at 150 percent of a vehicle's market value.

In addition, from January 1st, all "green" vehicles--those with CNG, electric, or hybrid engines--will pay a road tax at the same rate as their petrol-driven equivalents instead of at the same rate as diesel cars, a 20 percent tax reduction, the agencies said.

To "ease the transition" to Euro IV standards for diesel vehicles, which will be introduced on Oct. 1, new Euro IV-compliant diesel taxis will also receive a 40 percent ARF rebate while Euro IV buses and commercial vehicles will be entitled to an ARF discount of 5 percent.

Owners registering Euro IV diesel passenger cars will also see the special tax applied to their vehicles dropped from six times their current road tax to four times their road tax.

The agencies said the incentive package would encourage a shift toward vehicles that emit lower levels of particulate matter (PM 2.5), carbon dioxide, and other pollutants.

"PM 2.5 is a key air pollutant of concern in Singapore as it is linked to higher incidences of respiratory and heart diseases," the agencies said. "In Singapore, diesel vehicles contribute about 50 percent of our total level of PM2.5 emissions."

54. 2005 Not A Year Of Clean, Healthy Air In Jakarta

Indonesians in many parts of the country were still unable to enjoy clean air in 2005 due to chronic pollution. Choking haze from the annual forest fires in Sumatra earlier in the year covered most of the region's sky, including Malaysia's and Singapore's, for weeks before firemen from neighboring countries came to help put out the fires raging over thousands of hectares of forests in the western part of Indonesia.

Sumatrans, Malaysians and Singaporeans had to put on masks to keep them from inhaling the smoky air. Schools were closed and flights were delayed as visibility only reached between 300 to 500 meters. Noted environmentalist and former environment minister Emil Salim called it the Asia brown haze and urged Asian countries to cooperate in tackling the environmental problems.

The Center for Environment Management at the Office of the State Minister for the Environment reported that fires had burned forest areas in North Sumatra, Riau and Jambi provinces. The conflagration in Riau, which had over 500 hot spots, razed 25,000 hectares of forest this year.

Even without the haze, Indonesians still have to deal with ongoing chronic air pollution caused by motorized vehicles. A joint study carried out by the Office of the State Minister of the Environment and the Committee for Leaded Gasoline Phase-out (KPBB) revealed in late November that cars and motorcycles in three major cities in the country -- Palembang, Makassar and Medan -- were still using leaded gasoline, which poses a threat to people's health and can stunt mental development in children.

The report of the monitoring showed that gasoline samples taken in Palembang contained 0.58 g/L of lead, Makassar (0.272 g/L) and Medan (0.213 gr/L), while the content of sulfur in diesel fuel sold in 10 major cities reached more than the acceptable maximum limit of 500 parts per million (ppm).

The study said that last year, people in major cities only enjoyed clean air for less than two months in a year, with Jakarta residents enjoying clean air for only 18 days.

The government argued that it could not afford to produce about 15 million kiloliters of lead free gasoline to supply some 40 million cars and motorcycles across the nation. According to the Office of the State Minister for the Environment's calculation, each liter of unleaded gasoline requires Rp 200 in extra costs, which is equal to about Rp 2 trillion every year. Challenging the government's argument, environmental activists said a World Bank study showed that the air pollution had cost Indonesians US\$548 million in social and health losses from 1995 to 2000.

55. China Welcomes Small Cars Back to its Streets

China will encourage the manufacture and use of small, low-emission cars, overturning current restrictions on them to help curb its growing appetite for oil, the country's top economic planning body said. Parking fees for small cars should be lower, officials should lead the way in using them and limits on their use as taxis should be lifted, the National Development and Reform Commission said in a statement on its Web site. "The

safety, power and appearance of energy saving and environmentally friendly low-emission cars have all improved greatly," the commission said, adding that all restrictions should be lifted by March 1st.

China will also promote the development of cars that use fuels other than gasoline and diesel and draft tax policies to coax customers towards smaller and more efficient vehicles.

At present 84 Chinese cities restricted the purchase and use of small cars, the China Daily said. Authorities in the southern export hub of Guangzhou had stopped issuing license plates for cars with engines under 1.0 liter in 2001. The commission said small cars had been discouraged because of "noise and air pollution, poor safety and unattractive appearance".

But as oil prices rise, the appetite for smaller cars had been growing - those with under 1.6 liter capacity had accounted for 66 percent of sales of domestically made vehicles in the first 11 months of last year - and car makers were keen to capitalize on the opportunities the new policy offers, the China Daily said.

Domestic small-car specialist Chery Automobile Co. expected to do much better business and planned to launch more low-emission models, the paper quoted sales manager Qing Lihong as saying.

China imports more than 40 percent of its crude oil.

56. New Taiwan EPA Initiative Aims To Cut Auto Emission Levels In 3 Cities

The Environmental Protection Administration has announced a "Metropolitan Air Pollutant Reduction and Removal Initiative" in a bid to decrease the level of atmospheric pollution from vehicle emissions in Taipei, Taichung, and Kaohsiung. According to the plan, the government will designate more bicycle lanes, increase production of liquefied petroleum cars to 18,000, add 12 more stations for natural gas refueling, and promote the use of hybrid cars and the eventual elimination all 2-stroke engine motorcycles.

Citing Taipei as an example, EPA representatives said that the main cause of air pollution is high emissions of carbon monoxide, nitrogen oxide, and non-methane hydrocarbon, all of which are emitted by automobiles.

The EPA said that the plan will go into effect for the period 2006 to 2008, with the goal of reducing air pollution in the three cities by 30 percent.

Under the initiative, the government will also push for the use of fuels such as bio-diesel and gasohol.

The EPA noted that the smog and the exhaust fumes from cars and motorcycles have greatly endangered public health in Taiwan.

In a press release, the EPA said that improving the air quality is the responsibility of every resident in the country, and it urged that people use the public transportation system more frequently, buy environmentally friendly cars, and properly maintain their

personal vehicles by adhering to a regular inspection schedule.

In addition the new initiative, the EPA has also implemented a comprehensive motorcycle emissions testing system and is offering subsidies to promote the elimination of older, heavily polluting vehicles in order to reduce air polluting emissions.

With over eight million motorbikes in Taiwan, the system also calls for regular and compulsory inspections and requires owners to repair vehicles that do not pass the tests. Owners of motorbikes that fail random roadside inspections will be fined.

57. Six Asia-Pacific Nations Join in Climate Change Partnership

A new partnership of six major Asia-Pacific nations that targets the deployment and commercialization of advanced energy technologies was launched January 11-12 at the Asia-Pacific Partnership on Clean Development and Climate Change in Sydney, Australia. During a January 6 briefing in Washington, U.S. officials said the voluntary initiative among Australia, China, India, Japan, South Korea and the United States is designed to accelerate the development and use of cleaner, more efficient technology in a way that promotes economic development and reduces poverty.

Together, the six countries represent more than half the world's economy, population and energy use, and produce half the world's greenhouse gas emissions.

The partnership, said Under Secretary of State for Democracy and Global Affairs Paula Dobriansky, will feature "actions that address the interrelated challenges of promoting economic growth, reducing poverty, enhancing energy security and mitigating air pollution and greenhouse gas emissions." She said the initiative would "work from the bottom up, through public-private partnerships to build local capacity, improve efficiency and reduce greenhouse gas emissions from industrial facilities, power plants, mines and buildings."

Participating nations have formed task forces to study the following sectors: cleaner fossil energy, renewable energy and distributed generation, power generation and transmission, aluminum, steel, cement, buildings and appliances and mining.

"The central core of this initiative, said James Connaughton, chairman of the White House Council on Environmental Quality, "is to develop work plans that have real commitments behind them." The United States has a very specific two-phase regulatory target to cut harmful air pollution by nearly 70 percent from power plants in 2010 and 2015, Connaughton said. Another target is to cut the sulfur from diesel fuel by 99 percent in 2007, and then cut nitrogen oxide by 90 percent in new vehicles starting in 2007.

"China has a new regulatory commitment in their five-year plan to desulfurize 46 percent of their coal-fired power plants, and they're going to work to improve the energy efficiency of their coal-fired power plants by 20 percent by 2010," he added.

"We are then going to work to sew these [commitments] together," Connaughton said, "to see if we can find common strategies to successfully meet those objectives.

The new initiative is a complement, not an alternative, to the 1992 United Nations Framework Convention on Climate Change (UNFCCC) and the 1997 Kyoto Protocol to that pact. Under the UNFCCC, governments gather and share information on greenhouse gas emissions, national policies and best practices for adapting to expected effects. The Kyoto Protocol, an amendment to the UNFCCC, established limits for greenhouse gas emissions for signatories.

At the Sydney meeting, the Partners formally established eight separate task forces to press for substantial reductions in greenhouse gas emissions, including groups focusing on clean use of fossil energy, issues surrounding renewables and electric power distribution, electric power generation and transmission, and improving reductions in greenhouse gas emissions in the aluminum industry, the Department of Energy announced on January 12th. Other task forces will discuss reducing such emissions in the steel industry, cement manufacturing, mining, and in the construction and manufacture of buildings and appliances, DOE said.

Each task force has been directed to review the current status of its specific industry or energy policy area "with regard to clean development and climate," to share knowledge and best practices on improving efficiency, to detail existing and emerging technologies, and to develop an action plan that identifies wherever possible "ambitious and realistic goals" for improving energy efficiency and addressing climate change.

The communiqué also noted that the **transportation sector** is not a current focus of any of the eight already-established task forces. But it said future cooperative efforts involving that sector are likely "as the partnership develops."

The delegates also announced a work plan to promote already "proven and emerging, cost-effective clean technologies" and practices by:

- accelerating deployment of coal gasification and other clean coal technologies;
- expanding use of renewables to provide lower-cost, clean power in regions without access to modern energy services;
- encouraging power sectors in each of the six countries to improve the efficiency and reliability of their electric power systems;
- developing and deploying advanced manufacturing processes for cleaner aluminum, cement, and steel production;
- strengthening adoption and use of building and appliance efficiency standards, using market approaches; and
- improving capture and use of coal-bed methane as a clean energy source, as well as new techniques and technologies to improve safety and cut emissions in the mining sector.

Greenpeace panned the first meeting and said it amounted to a voluntary agreement that had no specific timeline to reduce greenhouse gas emissions. "By promoting the pact, President (George W.) Bush and Prime Minister (John) Howard of Australia are putting the environment and public at risk in an effort to deflect criticism for their total failure to address global warming," Greenpeace said in a statement.

Philip Clapp, president of the National Environmental Trust (NET), called the Sydney meetings "little more than a photo-op for the leaders of the coalition of the unwilling on

global warming," particularly the United States and Australia, which are the only two developed countries that opted out of the mandatory greenhouse gas reductions called for under the Kyoto pact.

The United States and Australia "are the only two developed countries doing nothing to reduce their global warming pollution," Clapp said.

NET and other environmental groups also derided various financial pledges announced at the Sydney meetings as relatively paltry compared to ongoing clean development and other global investments launched by European Union member states and other parties to meet the mandatory caps on emissions contained in the Kyoto Treaty.

On January 11th, President Bush announced that he would request an additional \$52 million from Congress in his proposed fiscal 2007 budget to support the various efforts under the partnership.

Energy Secretary Samuel Bodman, who led the U.S. delegation at the meeting, said the additional funding will complement the \$3 billion the United States is investing each year under its Climate Change Technology Program, which focuses on technological and efficiency improvements that could reduce global warming, including investments in hydrogen, clean coal, carbon sequestration, nuclear power, and biofuel refining.

Other nations announced similar commitments, with Australian Prime Minister John Howard pledging \$100 million over five years, with 25 percent of the funding earmarked for expanding renewable energy projects.

58. Shanghai Takes Step To Clean Up City Center

The Shanghai traffic authority has announced that it will issue certificates to owners of vehicles which meet the Euro I emission standard from January 20 to February 14. Beginning on February 15, buses, cars and trucks without the special certificate will be forbidden to enter the city's inner ring elevated roads from 7 am to 8 pm. Any driver in the restricted area who fails to show a vehicle emission certificate will be fined 200 Yuan (US\$25). From October 1, all motor vehicles that emit pollutants exceeding the Euro I standard will be prohibited access to all the inner-ring roads between 7 am and 8 pm, the authority said.

A total of 56 service outlets have been set up in the city to accept the certificate applications for vehicles with local license plates.

Vehicles coming from other towns, which will stay in Shanghai for more than a week, are also required to apply for the certificate at one of the 16 road-toll service agents. The city will set up 23 checkpoints to determine whether vehicles are eligible for the emission certificates.

According to Sun Jian, vice-director of Shanghai Environmental Protection Bureau, the bureau will adopt the stricter Euro III standard on vehicle emission in the city next year and probably adhere to the Euro IV standard in 2009.

Air pollution caused by vehicle exhausts has become an increasing problem in Shanghai

as car sales have grown steeply in recent years. It is estimated that the number of automobiles in Shanghai continues to rise by at least 6,000 every month.

Vehicle emissions have worsened the city's air quality at an alarming rate.

Environmental experts expect the latest move to affect about 350,000 motor vehicles, around one-third of Shanghai's approximately 950,000 cars, buses and trucks.

59. Beijing Experimental Buses Aim to Cut Smog, Fuel

Beijing is fitting out 50 of its buses with experimental braking systems that it hopes could cut fuel use by up to 30 percent and help clear its smoggy skies, the China Daily has reported. The 50 buses in the trial will be fitted with hydraulic hybrid vehicle technology, which absorbs energy released as a vehicle brakes and allows it to be released when they restart or speed up, the paper said.

The test run would last one to two years, but if it was successful Beijing could add the technology to its whole fleet of 18,000 buses, the article quoted a municipal official saying.

The move is just one of a series of strategies Beijing is sampling or considering to help clear its smog-laden skies before the 2008 Olympics. It has a trial fuel cell bus plying its roads, and some of its fleet is powered by cleaner gas. It is also planning to build special networks of high-speed buses in exclusive lanes, to make the vehicles run more efficiently and tempt travelers on to public transport.

The skies over the nation's capital were blue for 234 days in 2005, the municipal environmental protection center said at the end of the year. But the city had slipped out of a list of the 10 best Chinese cities to live in, China Daily said, citing heavy pollution as one of the problems.

60. China Suffers Increasing Air Pollution

A comprehensive study of China's climate suggests the Asian nation has suffered a nine-fold increase in fossil fuel emissions, blocking the sun's rays. A team led by the U.S. Department of Energy's Pacific Northwest National Laboratory found China's cloud cover has been decreasing for the past 50 years, while an increased number of hazy days deflect sunlight.

PNNL senior research scientist, lead author Yun Qian and colleagues surveyed records from more than 500 weather stations across China for the years 1954 to 2001. The results, said co-author Ruby Leung, a PNNL laboratory fellow, 'strongly suggest that increasing aerosol concentrations (particles, mainly soot and sulfur, that pollute the air) in the past has produced a fog-like haze that has reduced solar radiation despite more frequent clear days that should lead to increased solar radiation.'

Qian said China's pollution outlook is likely to worsen as population and economic activity burgeon.

The study is reported in the current online issue of Geophysical Research Letters.

61. China Approves Two PetroChina Pipe Lines

PetroChina said it has obtained approval from the Chinese government to lay two pipelines to carry oil products from the northeastern and northwestern areas of China to the country's central regions. PetroChina said it will invest about \$1.5 billion to construct the two lines, which are expected to become operational as early as 2007.

One pipeline will extend from Lanzhou, in northwest China's Gansu Province, and carry 8 million tons/year of products. The other pipeline will begin at Jinzhou, in northeast China's Liaoning Province, and carry as much as 4 million tons/year of oil. The two lines will meet in Zhengzhou, in the central province of Henan. A planned extension will reach Changsha, the capital city of Hunan Province, south of Henan.

The pipelines will transport oil from refineries handling crude oil received by pipelines from Kazakhstan and Russia.

In December 2005, line-fill began on the 614-mile, 32-in. crude oil pipeline between Atasu in northwestern Kazakhstan and Alashankou in China's northwestern Xinjiang region. The Chinese-Kazakh pipeline will initially carry 10 million tons/year of crude, with much of it expected to come from the Kumkol fields in south Kazakhstan and Chinese-owned oil fields in the Aktobe region of western Kazakhstan.

China and Russia are discussing another pipeline project that would transport about 30 million tons/year of oil. This would extend 1,500 miles from Angarsk, Russia, to Daqing in northeast China's Heilongjiang Province.

62. China Building Coal-to-DME Plant

Japan's Toyo Engineering will build a coal-to-dimethyl ether (DME) plant with China's Ningxia Coal Group in northwestern Ningxia Hui Region. It will be China's first major coal-to-DME plant. The Ningxia DME plant will have a production capacity of 210,000 tons of DME annually. It will be completed by the end of 2007. The facility will be part of a larger petrochemical complex.

Toyo is also completing a 110,000-ton per year DME plant for the Lutianhua Group in Sichuan province. This plant, which uses natural gas as feedstock, is due to come online next year.

DME can serve as a synthetic fuel that is to diesel what LPG is to gasoline. It is gaseous at ambient conditions but can be liquefied at moderate pressure. With a high cetane number, DME has very attractive characteristics as an alternative fuel for diesel engines. It is clean-burning, sulfur-free, with extremely low particulates. A dedicated DME vehicle might not require a particulate filter but would need a purpose-designed fuel handling and injection system as well as a lubricating additive.

China's Ministry of Science and Technology recently announced the successful development of a Euro-3-compliant prototype DME-fueled automobile. The test car, built by FAW Dalian Diesel Engine Factory, Xi'an Jiaotong University and Wuxi Fuel Injection Equipment Research Institute, has logged some 4,500 kilometers so far.

The researchers in the "Dimethyl Ether Automobiles R&D Project" are examining:

- High- and low-pressure fuel injection systems to handle DME's low viscosity and low boiling point
- Optimization of the combustion system
- Emissions reduction

In the coal production pathway, coal is first gasified to produce a syngas rich in CO and hydrogen. The syngas is then put through the water gas shift reaction ($\text{CO} + \text{H}_2\text{O} \rightarrow \text{H}_2 + \text{CO}_2$) to maximize conversion in the synthesis reactor. Acid gases (H_2S and CO_2) and other impurities are removed from the syngas, which then moves to the synthesis reactor for production into DME. By-produced CO_2 , methanol and water are separated from the product DME in the distillation columns. Methanol is recycled to DME synthesis reactor to be converted into DME.

This coal-based process can be quite CO_2 -intensive, and would need to be implemented with a strategy for carbon capture and sequestration to fit into any sort of regime for mitigating greenhouse gas emissions.

Because of the abundance of coal in China, and its ever-growing demand for energy, the country will remain dependent on the ultimate carbon fuel for decades to come. Accordingly, developing coal-based polygeneration strategies is of intense interest and exploration in the country. DME as a diesel substitute will be part of that.

63. New Zealand Reversal On Carbon Tax; Alternatives to Be Considered

New Zealand will not proceed with a carbon tax and will instead consider other ways to meet its commitments to cut greenhouse gas emissions, the minister responsible for climate change issues, David Parker, announced on December 21st.

In May 2005, New Zealand had announced it would introduce a carbon tax of NZ\$15 (US\$11) per metric ton of carbon dioxide-equivalent emissions starting in April 2007.

The decision not to implement the carbon tax follows a review of climate change policy initiated last June, when new estimates of New Zealand's most likely net position in the Kyoto Protocol commitment period 2008-2012 turned an expected surplus of 55 megatons to a deficit of 36.2 Mt.

The decision has also been influenced by a review of the carbon tax requested by two political parties (New Zealand First and United Progressive) on whose support the Labor Party has become dependent following the September 2005 general election. Both parties opposed the carbon tax in their election campaign.

Parker said New Zealand remained committed to meeting its obligations under Kyoto

and achieving the domestic goal of lowering emissions. New Zealand's Kyoto target is not to exceed its 1990 greenhouse gas emission level. In 2003, total emissions amounted to 75.3 Mt of carbon dioxide-equivalent or an increase of 22 percent over the 1990 figure of 61.6 Mt.

Compared to other Annex I countries, New Zealand has a unique emissions profile characterized by the large share of methane and nitrous oxide emissions from the agricultural sector (together 48.5 percent of total gross CO₂e) and the low share (10.1 percent) of carbon dioxide emissions from the energy sector due to the large share of hydropower in electricity generation.

The 460-page review of climate change policy was completed in early November and released by the government on December 21st.

The review examines changes in the policy context since New Zealand formulated its current climate change policy in 2002 and presents the results of measures taken to date.

Parker said officials have been asked to undertake further policy work in consultation with stakeholders and to report back to ministers in March.

Parker said some areas that officials would report on include:

- incentives for investment in renewable energy;
- encouraging new tree planting and reducing deforestation;
- improving fuel efficiency of the transport fleet;
- options for a narrow-based carbon tax on major energy users and emitters who do not meet world-best practice; and
- improving energy efficiency and conservation.

64. New Zealand Proposes Changes To Vehicle Emissions Requirements

Proposed changes to the requirements for vehicle exhaust emissions have been released for public comment, including a proposal to introduce a visible smoke check for exhausts as part of regular vehicle inspections. Police currently have the power to ticket smoky vehicles at the roadside, and vehicles entering New Zealand for the first time must meet approved emissions standards, but exhaust emissions are not currently checked as part of Warrant of Fitness (WoF) or Certificate of Fitness (CoF) inspections.

The draft Land Transport Rule: Vehicle Exhaust Emissions (2006) proposes to include a simple visible smoke check as part of WoF and CoF inspections. Vehicles discharging clearly visible, dense smoke from the exhaust would fail inspection.

Director of Land Transport Wayne Donnelly said the proposed new check would only affect a small number of vehicles, but bringing those vehicles up to standard or removing them from the road would benefit all New Zealanders by reducing air pollution. "Less than two percent of vehicles are likely to fail this check, but they will be gross polluters - most likely poorly maintained and with severely worn or damaged engines. These vehicles are a significant source of air pollution, which in turn can cause serious health

problems."

A 2002 report from the National Institute of Water and Atmospheric Research (NIWA) estimates that around 400 people die prematurely each year from exposure to vehicle emissions. The problem is worse in cities and towns with high traffic rates and congestion where a large segment of the population can be exposed to air pollution.

The draft rule also proposes to change the implementation date for the Euro 4 emissions standard for heavy diesel vehicles in order to prevent disruption to the supply of new heavy diesel vehicles, including public transport buses, for New Zealand companies.

The Vehicle Exhaust Emissions Rule specifies vehicle exhaust emission manufacturing standards that vehicles must have been built to before they are certified for use on New Zealand's roads. Under this Rule, heavy duty diesel vehicles (i.e., those weighing more than 3500 kg) have to comply with the emissions standard Euro 4 if they are: New-model vehicles and manufactured on or after 1 January 2007; or Existing-model vehicles and manufactured on or after 1 January 2008.

It is now proposed to delay the introduction date for Euro 4 by one year to prevent problems with the supply of new heavy diesel vehicles into New Zealand. It means that New Zealand companies can continue to import vehicles, including public buses, without the risk of disrupting supply.

The European Union (EU) has only just (26 October 2005) officially adopted the Euro 4 emissions standard, with which new heavy diesel vehicles have to comply from October 2006. Existing models, however, do not need to comply until October 2008.

The EU timing means that New Zealand importers cannot reasonably be expected to guarantee the supply of Euro 4-compliant vehicles in accordance with the dates currently set out in the Vehicle Exhaust Emissions Rule.

In addition, some overseas manufacturers use a technology to reduce engine emissions that needs a supply of urea to ensure compliance. If this type of Euro 4 diesel engine operates without urea, it produces much higher emissions. New Zealand industry needs time to develop a suitable urea supply; that is, allow time for the necessary infrastructure to be put into place.

65. Air Pollution Rises in Smaller Korean Cities

PM10 pollution in big cities such as Seoul has generally improved, but so-called "clean cities" which have been considered safe zones in terms of pollution, are suffering from serious PM10 contamination.

According to a research report, the level of PM10 regulation in Korea is unreasonably low compared to developed countries, and a wide range of pollution prevention measures are not working. Dong-A Ilbo and experts in this field analyzed monthly air pollution statistics from the Ministry of Environment for 2002-2005, air pollution data from 25 districts of Seoul came up with the above conclusions.

The results said that the yearly PM10 pollution level on average in major cities was the

lowest, 48 μ g per cubic meter in Daejeon, Gwangju (49 μ g), Ulsan (51 μ g), Daegu (54 μ g), and Seoul and Busan (above 58 μ g) in order.

But yearly PM10 pollution levels in Goyang City, Gyeonggi Province, which is known to be a clean city, significantly increased from 50 μ g in 2002 to 76 μ g last year.

Pocheon City also conducted PM10 pollution level research for the first time and found out that it amounts to 77 μ g per a cubic meter, which surpasses the standard level set by the Ministry of Environment.

It is said that the reasons why small and medium-sized cities are seeing increases in their level of PM10 pollution is that 3.5 million (more than 20 percent of the total number in Korea) of the 15,390,000 cars across the country are registered in those areas, and that there are a number of factories emitting air pollutants there.

Meanwhile, the level of PM10 pollution in Seoul recorded 58 μ g per a cubic meter last year which was the lowest since 1995 when research on PM10 began.

The introduction of low-pollution cars and more stringent emissions tests have led to an improvement in the level of the pollution in big cities such as Seoul, Daejeon and Daegu. However, some point out that a limit on dust emissions should be strengthened in individual construction sites because the level of PM10 in the country amounts to 70 μ g per cubic meter, which is way above 40 μ g per cubic meter, the standard level set by the Organization for Economic Cooperation and Development.

66. Guangzhou Plans New Vehicle Emission Rule

Guangzhou will implement a new vehicle exhaust emission standard this year to improve the environment, local media has reported. The Guangzhou Municipal Government has handed in a detailed plan to the State Council for approval to implement the State Phase III exhaust emission standard this year, the city's environmental protection bureau said.

Compared to the State Phase II standard implemented in Guangzhou last July, the Phase III standard requires vehicles to reduce exhaust emission by half, according to the bureau.

If approved by the State Council, the city government will ask all the new vehicles in the market to install an on-board diagnostics (OBD) system, which will check for problems in the emission control system.

A new vehicle would cost 1,000 (US\$125) to 2,000 Yuan more because of the OBD system, said Liu Chao, a department chief of the Guangzhou environmental protection bureau. Liu said the government was discussing whether the extra cost could be subsidized.

Guangzhou's air pollution comes mainly from coal-powered plants and vehicles with heavy exhaust emissions, the New Express reported, citing Professor Hua Ben from South China University of Technology.

With the introduction of liquefied natural gas this year, air pollution caused by burning coal will be gradually eradicated. The city should focus more on vehicle emissions, Hua said.

67. Air Quality Improving In Hong Kong But Problems Remain

The number of days with the air pollution index exceeding 100 has dropped from 87 in 2004 to 49 last year, the Environmental Protection Department says. Between 1997 and 2004, nitrogen oxide emissions were cut 16%, respirable suspended particulates cut 28% and volatile organic compounds cut 23%.

Despite the progress, some days with high indices are still unavoidable, the department said. The air pollution index hit 149 at Causeway Bay on February 12, while the nitrogen dioxide and sulfur dioxide concentrations were 5.3 times and 17.9 times the average. The elderly and people with heart and respiratory diseases should check the indices and follow health advice.

The department said while recent calm weather caused pollutant accumulation, cutting emissions is the only solution. With the implementation of a comprehensive program to cut vehicle emissions, particulates and nitrogen oxides in the urban areas have fallen 80% and 40%, while the number of smoky vehicles has dropped 80%.

However, the department said much of the effort has been vitiated by the surge in emissions from power companies. The emission of sulfur dioxide grew 47% between 1997 and 2004.

It said power companies must substantially reduce emissions to achieve a sustained improvement in air quality.

At high levels, sulfur dioxide reduces lung function and increases morbidity and mortality rates. Reacting with other pollutants in the air, it forms very fine sulfur particles, the department warned. Analysis shows that up to 30% of the very fine particles in the air are sulfate.

Power generation emits 92% of the sulfur dioxide and half of the nitrogen oxides in Hong Kong. Between 1997 and 2004, the emission of sulfur dioxide by power generation grew 60%.

The department has put power plants under close surveillance. China Light & Power's plants were inspected six times last year. The department has informed the power companies of the 2010 emission caps.

The Government has been working with Guangdong authorities to reduce emissions in the Pearl River Delta Region. On September 28 the Chief Executive and the Governor of Guangdong Province reiterated both sides would implement the delta regional air quality management plan progressively.

Since November 30, the monitoring network jointly established under the plan has been commissioned and the delta regional air quality index is published daily.

This year major tasks under the plan include:

- completion of phase one construction of the liquefied natural gas trunk pipeline in Guangdong, commissioning of a number of LNG power plants in phases, and installation of more flue gas desulfurisation systems to oil-fired and coal-fired power plants;
- Guangdong authorities will advance the implementation of National III motor vehicle emission standards (on a par with Euro III ones, see above) while Hong Kong will implement Euro IV motor vehicle emission standards in line with the EU;
- the data collected by the regional air quality monitoring network will be analyzed by the environmental protection authorities of the two governments, and a report will be issued on a half-year basis;
- environmental protection authorities will strengthen technical exchange and joint studies, especially on continuous emissions monitoring of stationary pollution sources and commissioning studies on regional air pollution on a need basis; and,
- details of the Emission Trading Pilot Scheme for Thermal Power Plants in the delta region being jointly developed by the two sides are expected to be finalized, and details will be presented to the power plants on both sides in the third quarter so prospective participants can identify their trading partners and draw up emission trading agreements.

Twenty-two people were taken to hospital and two of them were in critical condition after taking part in Hong Kong's biggest marathon amid the worst air pollution levels in months, according to the government. A record 40,000 people took part in the Standard Chartered Hong Kong Marathon and many complained of the thick smog which obscured the Tsing Ma Bridge, a key landmark along the route of the annual race.

Of the two runners in critical condition, one collapsed near the finish in Wanchai district, an area where the air pollution index (API) soared to nearly 150, the highest level since September 2005. The other collapsed not far from the Tsing Ma Bridge.

68. Bangladesh Government Adopts Plan For Reducing Air Pollution

The government has introduced Bangladesh-1 and Bangladesh-2 in line with Euro emission norms and adopted a roadmap for improving the air quality of Dhaka and other cities badly afflicted with vehicular pollution. The newly introduced emission norms will come into effect immediately and will be applicable irrespective of locally produced and imported new and reconditioned vehicles run by petrol, diesel and CNG.

In this regard, necessary amendments have been made in the relevant schedules of Bangladesh Environment Conservation Rules 1997 pertaining to motor vehicles emission that predominantly contribute to city's air pollution.

The roadmap comes with the amendment spells out permissible emission limit and time frames applicable for diesel and other vehicles registered before and after September 2004.

During the emission tests of in-use diesel run buses registered before September 1, 2004, Smoke Capacity value 80 HSU will be accepted up to 31 December 2006.

Smoke Opacity value 70 HSU and 65 HSU will be accepted up to December 31, 2008, and December 31, 2009, respectively.

For diesel run truck and other diesel run vehicles Smoke Opacity value 90, 80 and 65 HSU will be accepted up to 2006, 2008 and 2009 respectively, according to the emission roadmap.

The Smoke Opacity for all in-use naturally aspirated and turbo-charged diesel buses registered after September 2004 has been set for 65 and 72 HSU respectively.

Considering that carbon monoxide and hydrocarbon being the harmful pollutants released from petrol and CNG run vehicles, separate emissions norms has been set irrespective of vehicles registered before and after September 2004.

For ambient air quality, the amendment also comes with permissible limit of various pollutants like carbon monoxide, lead, nitrogen dioxide, SPM, PM10, PM 2.5 ozone and sulfur dioxide.

In line with Euro emission norms Bangladesh-1 and Bangladesh-2 will come in to force immediately for all types of imported and locally produced new and reconditioned diesel, petrol and gas run vehicles.

The government expressed its hopes that all in-use vehicle owners would strictly comply with the new emission norms as set out in the roadmap for greater interest of controlling unabated air pollution predominantly from old, worn out and obsolete technology vehicles plying on the city roads.

Abatement of air pollution is also needed to safeguard public health in our cities, the government hoped.

The government hopes that people from all strata of society will actively cooperate with the concerned agencies entrusted with enforcing new emission norms for ensuring healthy living of our citizens.

69. South Korea to Follow European Model In Regulating Waste Autos

On January 24th, South Korea proposed legislation that would expand requirements for manufacturers of vehicles to take responsibility for collecting and disposing of their products after they have reached the end of their useful lives. The draft legislation, titled Act on the Resources Recycling of Electrical and Electronic Products and Automobiles, is modeled on EU directives on waste electronics and end-of-life vehicles. As drafted, it would take effect in July 2007, the Environment Ministry said in a notice (No. 2005-276).

The proposed law would expand existing rules on "extended producer responsibility" (EPR) to cover automobiles for the first time. Take-back requirements and procedures

for automobiles are not clearly defined under existing laws. Current EPR rules cover consumer electronics, tires, lubricant oils, fluorescent bulbs, and packaging materials. They require suppliers of these products to take responsibility for recycling a certain portion of associated waste, either by managing waste recovery operations directly or by paying into a government-run recycling fund.

The new legislation borrows the "integrated product policy" concept from EU environmental directives. This provision holds manufacturers and importers responsible for environmental impacts of their products throughout the product lifecycle, from design and production to end-of-life management.

The current Act on the Promotion of Resources Conservation and Recycling, which provides for EPR mandates, sets forth "recommended guidelines" for using environment-friendly materials in the design and production stage. The new law will make them binding for manufacturers and importers.

The law will contain the same regulatory provisions stipulated in the End-of-Life Vehicles (ELV Directive).

The EU standard for automobile waste reuse and recovery currently set at 85 percent will be imposed on end-of-life vehicles. Accordingly, South Korean automotive junkyards will have to comply with strict environmental guidelines when the new law takes effect in July 2007.

70. China Announces Major Plan to Combat Pollution

China has announced a plan to combat widespread pollution and leave a better environment for future generations, citing the need to stave off possible social instability. The plan, approved by the State Council, focuses on pollution controls and calls for the country to clean up heavily polluted regions and reverse degradation of water, air and land by 2010.

"The move is aimed at protecting the long-term interests of the Chinese nation and leaving a good living and development space for our offspring," according to an announcement published in state media.

Among the most urgent problems cited by the official Xinhua News Agency were acid rain, pollution of the soil, organic pollutants, potential risks from nuclear facilities and a decline in biodiversity.

Most major rivers are polluted and acid rain has damaged more than one-third of China's land area, as well as neighboring countries, the Xinhua report noted.

The government has previously responded to environmental crises largely on a piecemeal basis. The new plan appears to be a broader strategy in keeping with the government's newly stated emphasis on seeking sustainable development after years of breakneck growth. Under the plan, regional governments will be asked to set environmental targets and conduct regular evaluations. It also calls for environmental quality to be considered in assessing the performance of local officials -- until recently

judged mainly on their success in promoting economic development.

"Leading officials and other relevant government officials will be punished for making wrong decisions that cause serious environmental accidents and for gravely obstructing environmental law enforcement," it said.

Government ministries have been ordered to adapt fiscal, tax, pricing, trade and technology policies to the new strategy.

The State Council said the plan was in part prompted by a toxic chemical spill in northeastern China's Songhua River in November that "stunned the nation and sounded an alarm about the country's worsening environment." The environmental protection minister was dismissed following the disaster, which affected water supplies for millions of people in China and neighboring Russia.

"The issue of pollution has become a 'blasting fuse' for social instability," Zhou Shengxian, director of the State Environmental Protection Administration, said in comments posted on the agency's Web site.

71. Fake Emissions Decal On The Streets of Shanghai

It didn't take long for the pirates to figure out how to make money off Shanghai's new vehicle emissions stickers. The deadline for the decals - which are needed to drive on many of the city's elevated highways - fell on Wednesday, and just beforehand Shanghai Daily was put in touch with a counterfeiter who was selling the stickers for 380 Yuan (US\$47).

"We spent a lot of money making the printing plate for the fake stickers," said the seller, a young woman. "We have orders coming in, and I had just sold three stickers to a guy minutes ago."

A Shanghai Daily reporter pretending to be a buyer met with the woman on Nanjing Road W. after receiving a tip from a reader who was given a business card offering the counterfeits.

The fake stickers were spawned by a new rule the city enacted to rein in its growing vehicular emissions and increasing traffic congestion. Starting Wednesday, only vehicles that meet European-1 emissions standards are allowed on elevated highways within the Inner Ring Road during the day. Cars made since 2001 usually meet those standards, and their owners were given free stickers after producing their registrations. Owners of older cars were allowed to take their vehicles to test centers set up by the Environmental Protection Bureau to see if they comply.

Stickers have been issued to 550,000 car owners so far. But some 450,000 autos aren't on the list of approved vehicles and might not be able to pass emissions tests. As a result, a new market was born.

The fake stickers seen by Shanghai Daily appeared to be an excellent copy of the real thing. They lacked a license number, which is printed by authorities on the side of the

decal facing the driver if the sticker is affixed to the windshield. But the seller provided written instructions on how to duplicate the number at home.

She admitted that her product would fail to pass scrutiny if a police officer inspected it with a laser pen designed to authenticate the certificates. But local police are already having trouble identifying motorists who don't have the sticker because there is no set spot for where they should be placed. During the first day of enforcement, officers stopped many cars because they thought they were out of compliance only to find that about half of those drivers did have stickers.

"We can only say we support the new policy and will try our best to spot the violators," a high-level officer with the General Team of Traffic Police said yesterday.

There was no immediate word on what punishment those who use the fake stickers might face.

72. Australian Lead Smelter Campaigns To Cut Blood-Lead Levels in Children

On February 8th, Zinifex Ltd., owner of the world's largest lead smelter, announced it will spend up to A\$56 million (US\$41.5 million) over four years to cut emissions in a bid to bring the blood-lead levels of children living nearby to within World Health Organization (WHO) standards.

New license conditions issued to the Port Pirie smelter by the South Australian Environment Protection Authority (S.A. EPA) require reductions in average annual ambient lead levels at nearby monitoring sites as well as an annual 20 percent cut in the highest recorded 24-hour peak lead level.

According to S.A. air quality data for 2004, published last December, average annual lead concentrations in Port Pirie's air exceeded the national standard at two of three monitoring sites located away from the site boundary. A monitoring site at Port Pirie West primary school recorded an annual average airborne lead concentration of 0.63 micrograms per cubic meter. The national standard is 0.5 [micro]g/m³.

The spending commitment and new license conditions are part of a "10 by 10" campaign by Zinifex, the EPA, the Department of Health, and the Port Pirie Regional Council. The project aims to ensure that by 2010 at least 95 percent of local children under the age of four have blood-lead levels below the 10 [micro]g per deciliter level recommended by WHO. In 2004, about 60 percent of children had blood lead levels above 10 [micro]g/dl, with most of these having blood-lead levels below 15 [micro]g/dl.

The company will use the money to reduce site emissions and fund community projects that reduce the risk of children being exposed to lead.

73. Vehicle Related Air Pollution is Serious in Sri Lanka

The rapidly increasing vehicle population and fuel consumption particularly diesel, high proportion of old vehicles and poor vehicle maintenance; absence of clean fuel, and the high rate of urbanization are contributing to dangerous pollution levels in Sri Lanka. The main culprit in the country's worsening air pollution, which is significantly higher than internationally accepted standards is vehicle emissions which accounts for 65% overall, while thermal power and factory emissions accounts for 33% together; the balance is by open burning such as the burning of garbage.

Although so far approximately 2.4 million vehicles have been registered at the Department of Motor Traffic and only 1.5 million of these vehicles are active, 60% of these vehicles run in Colombo; this was disclosed by the Air Resource Management Center (AirMAC), which comes under the purview of the Central Environmental Authority.

Despite the severity of the situation, most people in the world including Sri Lanka have failed to understand the true implications of air pollution. Adverse reaction to one's health due to air pollution does not only limit to colds, asthma, sore throats, cough, vomiting and headaches, but also results in brain damage, lung diseases, heart diseases, eye irritations and even cancer. Air pollutants include carbon monoxide, ozone, sulfur dioxide, nitrogen oxides, and particulates.

When the Air Resource Management Center (AirMAC) embarked on a pilot project in 2001/2003 where it monitored several hundreds of vehicles to determine whether these vehicles were within the stipulated regulations, approximately 70% of some 700 vehicles taken in for this pilot project failed the necessary standards, as they posed severe implications to the environment.

"The Center then realized that their standards were too strict as removing more than 50% of the vehicles from the road would result in many social and other issues, thus it decided to revise its initial standards and relax it to a certain extent. It was then decided to remove only the extremely worst vehicles amounting to 10% from the road," Program Coordinator Ruwan Weerasuriya said. The balance of the vehicles which did not come under 'good condition' were to be issued with a warning to carry out strict and continuous maintenance of their vehicles or those will also be taken away from the roads.

If everything goes according to plan, probably within the next several months, the Government might enforce this law where the Annual Revenue license will be issued only for the vehicles that confirm certain exhaust emission standards. Vehicles failing to comply with these standards will not be issued their revenue license.

"While only some motorists contribute to traffic fatalities, all motorists contribute to air pollution fatalities," Mr. Weerasuriya pointed out.

AirMAC has also launched a campaign urging vehicle owners and drivers to take better care of their vehicles. The center calls upon all those responsible to clean the air filters regularly and or change it when necessary, adjust tappets of the engine, if the engine is worn out repair it, change the fuel filter in time, examine diesel injector nozzles regularly and replace it when needed, examine the diesel injector pump at the right time and repair it, load the vehicle only to its stipulated capacity, change the spark plug when necessary and examine the ignition systems, tune engines, examine the activity of the catalytic converter and replace it if needed.

The campaign points out that if the vehicle owners follow these instructions they get vast amount of benefits including increased fuel efficiency leading to lower fuel bills, increased life time of the engine, reduce cost of repairs of engines, save foreign exchange due to reduce imports of fuel and increase efficiency and economic development due to reduction of diesel use. The Center also cites reduced cost to the government on health expenditure, as a lesser number of masses will suffer if vehicle emissions reduce significantly.

Despite the environmental ministry making repeated attempts in the year 2003 and 2004 to ban three wheelers and two wheelers which have two stroke engines, the attempts proved futile, as the then respective cabinet of ministers refused to go ahead with the ban.

According to a 2005 survey report by the transport ministry, respiratory disease is the 2nd leading cause of hospitalization. Asthma has become a major respiratory disease due mainly to the explosive growth of three wheelers (mostly 2 stroke) and 2-wheelers (nearly 40% consist of 2-stroke engines) and the significant increase in diesel consumption. The 3-wheelers represent more than 50% of the overall million vehicles population and 85% of the operational road vehicles.

During the 90s, the per capita petrol fuel consumption increased by 23% while per capita diesel fuel consumption increased by 92%. Overall the small diesel fleet increased 300% due to the pricing policies of diesel vs. petrol. About 63% of all the 4-wheelers were diesel in 2000 compared with 46% in 1985.

74. Philippines Eliminates Import Duties On Components of Cleaner Automobiles

Philippine President Gloria Arroyo has signed an executive order abolishing import duties on parts, components, and accessories used for the assembly of environmentally friendly vehicles. A copy of the order was released by the presidential palace on January 31st.

Executive Order 488 covers components for all "hybrid, electric, flexible-fuel, and compressed natural gas motor vehicles" as part of government's nationwide effort to cut the country's dependence on imported oil and to introduce cleaner vehicles.

In the order, Arroyo cited the "need to promote efficient use of fuel in the transport sector" and added that emerging vehicle technology also presents "opportunities for improving energy efficiency of transportation in support of the government's energy independence agenda."

The directive was endorsed by the National Economic Development Authority (NEDA) as well as the energy, environment, and trade departments. It provides for the grant of preferential Most Favored Nation (MFN) rates of zero percent on the importation of the items listed earlier from the present rates of up to 3 percent.

Energy Secretary Raphael Lotilla said that aside from energy conservation, the economy can be insulated from external shocks due to rising oil prices through the use of alternative fuels. With the new executive order, he said government was hoping to

"encourage more active participation from the automotive industry in mainstreaming alternative transportation fuels."

Recently, U.S. auto giant Ford announced it would build a US\$20 million "flexible fuel factory" in the Philippines, Lotilla said.

Government late last year intensified the promotion of so-called indigenous alternative fuels, particularly fuel blends and additives such as bio-diesel from coconuts and ethanol. Currently only about 50 private pump stations offer alternative fuels in Manila, although this is expected to rise this year.

MIDDLE EAST

75. Severe Air Pollution Across Israel

Unusually high air pollution levels were measured in various areas of the country recently, mainly in the Tel Aviv area. The Environment Ministry warned Israelis not to engage in excessive exercise. The warning mainly refers to cardiac patients, elderly people and pregnant women.

Tel Aviv's Sde Dov airport was closed temporarily due to the harsh weather conditions. Heavy haze over Israel limited visibility. Sand storms took place in the south. Southwestern winds blew at 25-40 kilometers per hour across the country.

Dr. Levana Kordova, scientific manager at the Environment Ministry's Air Monitoring Center, said that very high concentrations of polluting particles were measured in the Tel Aviv area – more than 1,000 micrograms per cubic meter. "We can generally say that higher than usual air pollution was noted also across the country. The haze is caused by a dust storm. The natural particles, which originate in a dust storm, move over industrial and urban areas and adsorb the damaging materials, thus creating polluted area, which in different situations would have dissolved. The first rain expected to fall in the evening will wash it all away," she added.

At Ben Gurion Airport, most flights continued to arrive and depart as scheduled. A Lufthansa flight from Germany to Israel landed in Larnaca, Cyprus, after the pilot decided not to land in Israel due to the harsh weather conditions.

The Israel Electric Corporation raised its alert level due to the stormy weather. Sources at the company said they expect a high demand for electricity. The company prepared for winds blowing up to 100 kilometers per hour, and asked the public to remove any objects which may come loose, fly in the wind and hit the electric wires, such as shutters, antennas and plants.

GENERAL

76. Study Finds No Safe Level for Ozone

Even at very low levels, ozone - the principal ingredient in smog - increases the risk of premature death, according to a nationwide study to be published in the April edition of the journal *Environmental Health Perspectives*. The study, sponsored by the US Environmental Protection Agency and the Centers for Disease Control, found that if a safe level for ozone exists, it is only at very low or natural levels and far below current U.S. and international regulations. A 10 part-per-billion increase in the average of the two previous days' ozone levels is associated with a 0.30 percent increase in mortality.

The current study builds on research published in November 2004 in the *Journal of the American Medical Association*, which was the first national study of ozone and mortality.

"This study investigates whether there is a threshold level below which ozone does not affect mortality. Our findings show that even if all 98 counties in our study met the current ozone standard every day, there would still be a significant link between ozone and premature mortality," said Michelle Bell, lead investigator on the study and assistant professor of environmental health at the Yale School of Forestry & Environmental Studies. "This indicates that further reductions in ozone pollution would benefit public health, even in areas that meet regulatory requirements."

Researchers found that even for days that currently meet the EPA limit for an acceptable level of ozone - 80 parts per billion for an eight-hour period - there was still an increased risk of death from the pollutant.

An effort is now under way by the EPA to consider whether more stringent standards for ozone are needed. The agency is mandated to set regulations for ozone under the Clean Air Act. Ozone, a gas that occurs naturally in the upper atmosphere, is created in the lower atmosphere when vehicle and industrial emissions react with sunlight. Levels typically rise when sunlight and heat are highest in the summer.

"Over 100 million people in the United States live in areas that exceed the National Ambient Air Quality Standard for ozone. Elevated concentrations of ozone are also a growing concern for rapidly developing nations with rising levels of ozone from expanding transportation networks," said Francesca Dominici, co-author of the study and associate professor of biostatistics at Johns Hopkins.

77. Arctic Warming, Impacts Accelerating, Threaten Forests, Water, Scientists Say

Rapid warming that has heated the world's arctic region far more than more temperate latitudes appears to have accelerated in the past five to six years, several scientists said at an environmental conference on February 6th to 10th. Records from the Bering Sea show warming temperatures and conditions dramatically different from the past, said Jim Overland, a National Oceanic and Atmospheric Administration scientist who spoke at the Alaska Forum on the Environment.

"The pattern that we've had in the last six years is not the same as any of the climate patterns we've had over the last century," Overland said.

In the last five years, there was virtually no year-round sea ice in the southern Bering

Sea, Overland said. What seasonal ice is there is not in the same pan and floe formations that benefit the migration of sea mammals, he said. "It's not just that the ice is going away in the south Bering Sea. The character of the ice is different," he said.

Robert Corell, a senior policy fellow at the American Meteorological Society and chairman of the eight-nation Arctic Climate Impact Assessment, said Alaska and neighboring areas in northwestern Canada and northeastern Russia are heating up as much as 10 times as fast as other parts of the earth. Last year, the arctic ice pack was the smallest ever measured, Corell said.

Jonathan Overpeck, a climate scientist from the University of Arizona, echoed that point. "The Arctic is changing more than any part of the world now," he said in a presentation.

Corell and Overpeck said the most direct impact to the rest of the world from the warming arctic will come from the flow of melted ice. That flow of water threatens to disrupt established marine currents that give heavily populated regions of the North Atlantic coasts a temperate climate and that cause the rich commercial fish stocks of the North Pacific to thrive.

Within Alaska, the warming is damaging much of the state's boreal forest, said Glenn Juday, professor of forest ecology at the University of Alaska, Fairbanks. Trees in the forest are weakened by huge insect infestations that have been fanned by warmer weather, as well as frequent wildfires and overall dry conditions, he said. "On certain sections in the middle of the boreal forest today, sites are too dry for trees to grow," Juday said. "We're right at the ragged edge."

Satellite observation and on-the-ground tracking show that various species in interior Alaska's boreal forest--such as white spruce, black spruce, and birch--have lost half or more of their normal growth, he said. "The warmer it is, the less the trees grow. Summer warmth makes the trees run out of water and they can't grow."

One result has been wildfires that are more frequent and intense than in the past, he said. In 2004, more wildland acres burned in Alaska than in any year on record. The following year, wildfires burned the third-highest acreage total in Alaska since records have been kept, he said. Wildfires are common and natural in the boreal forest, but it used to be that big fire seasons were separated by nine to 13 years, he said.

More than the acreage totals distinguished the recent wildfires, Juday said. "These fires burned from horizon to horizon," he said. They burned trees that normally do not burn, and "smoldered on until the fall and were put out by snow."

The warming climate also has negative implications for any commercial logging industry in interior Alaska, Juday said. "The trees may be alive now, but if you cut them down and plant another one in its place, that tree has no future."

John Warren, engineering support services manager for the Alaska Native Tribal Health Consortium, said the warming climate poses public-health risks in parts of rural Alaska. Thawing permafrost, erosion, or storm damage can damage critical public facilities, such as wastewater-treatment plants, in turn contaminating public water sources, Warren said in a presentation. Shrinking lakes--sometimes the result when water drains through newly thawed permafrost layers--can mean reduced drinking water supplies, he said.

Serious erosion to coastlines previously protected by pack ice and hard permafrost can mean physical danger to residents, he said.

He said public facilities of the future may be designed to last only temporarily because of the rapidly changing climate. "So it may not be wise to design that new school or wastewater treatment plant on a 50- or 100-year design life when it's really going to be interrupted over a shorter period," he said.

There may be different types of building foundations that should be used in Alaska areas susceptible to dramatic climate changes, he said. In addition, there might be a need for new standards for buildings' capacity to withstand high winds and snow loads, he said.

State lawmakers who represent Alaska's northernmost region have introduced a resolution (HCR 30) that would establish a state climate impact assessment commission. The 13-member commission, with members from the Legislature, the University of Alaska, Alaska Federation of Natives, and other entities, would assess climate change impacts to the state and develop a plan for shoring up vulnerable infrastructure and protecting those who gather their food from the land and the sea.

78. Ice Melt in Northern, Southern Hemispheres Contributing to Sea Level Rise

Several studies recently published in scientific journals or presented at the American Association for the Advancement of Science's annual meeting on February 16th to 20th conclude ice melting in the Northern and Southern hemispheres is contributing to a sea level rise that is faster than projected. A study published in the February 10th issue of Science magazine concludes the period from the late 20th century through the present, "when greenhouse gas concentrations were at their highest," has experienced unprecedented warmth even when compared to the Medieval Warm Period, an unusually warm period from about the 9th century until the 12th.

At the AAAS meeting, Chris Rapley, director of the British Antarctic Survey, said that sectors of the Antarctic ice sheet which lie on rock below sea level are rapidly thinning, and that the effects are not accounted for in current climate change computer models. Five years ago, experts thought Antarctica would be a minor contributor to global sea-level rise because increased snowfall would compensate for ice lost to the ocean, but recent data show that "parts of the Antarctic ice sheet that rest on bedrock below sea level have begun to discharge ice fast enough to make a significant contribution to sea level rise," Rapley said.

Research published on February 17th in Science magazine on ice loss in the Northern Hemisphere reached similar conclusions. Scientists from the U.S. National Aeronautics and Space Administration's Jet Propulsion Laboratory in Pasadena, California, and the University of Kansas' Center for Remote Sensing of Ice Sheets used satellite images to study the Greenland Ice Sheet. They concluded the loss of ice from Greenland doubled between 1996 and 2005 as glaciers and the ice sheet melted in response to a warmer climate. The loss was greater than previous predictions, the study noted.

The research results call predictions from computer models into question, Eric Rignot of the Jet Propulsion Laboratory said in an announcement of the study. "Actual changes

will likely be much larger than predicted by these models," Rignot said.

The scientists found that the largest amount of glacier loss occurred in southeast Greenland from 1996-2000 and then moved to east and west Greenland from 2000-2005.

"In the future, as warming around Greenland progresses further north, we expect additional losses from northwest Greenland glaciers, which will then increase Greenland's contribution to sea level rise," Rignot said.

Research published on February 16th in Nature magazine showed carbon dioxide, a greenhouse gas, is affecting the Earth's water in another way. A team of British researchers found that increased carbon dioxide caused small pores in the underside of leaves to partly close, suppressing the plants' release of water. This in turn causes more water to run off the land into rivers rather than evaporating into the air.

"Our analysis suggests that raised CO₂ levels are already having a direct influence on the water balance at the land surface," the study authors concluded.

79. WMO Says 2005 Second-Warmest on Record; Hansen Says Warmest

Preliminary data from the World Meteorological Organization suggests 2005 will be the second-warmest year on record since temperature data collection began in 1861, the organization said on December 15th. WMO, a United Nations agency, said the global mean surface temperature for 2005 will end up nearly 1 degree Fahrenheit--or 0.48 degree Celsius--above the average temperature recorded between 1961 and 2000.

That would make 2005 the warmest year, globally, since a prominent El Nino effect pushed surface temperatures 0.54 degree Celsius above the mean in 1998, the organization said. Had a similar El Nino occurred in 2005, the increased temperature would have surpassed the 1998 figure, according to Michael Mann, director of the Earth System Science Center at Pennsylvania State University.

According to WMO, all of the warmest years on record since 1861 have occurred in the last 10 years, with the exception of 1996.

Temperatures north of the equator in 2005 are expected to increase even above the global average, or about 1.17 degrees Fahrenheit warmer (0.65 degree Celsius) than the 1961-2000 baseline, the highest since records began. Temperatures south of the equator are likely to end up about the fourth highest since 1861, at 0.32 degree Celsius above the baseline.

According to the WMO report, arctic sea ice has declined about 20 percent from the 1979-2004 average when last measured in September 2005, "the lowest extent ever observed" since satellites began observing the vast area in 1979.

The WMO's preliminary 2005 temperature figures are based on observations through the end of November from networks of land-based weather stations, ships, and buoys.

More extensive WMO data will be released in the annual WMO statement on the status

of global climate in 2005, slated to be published in March 2006.

However, Dr. James Hansen, using a different methodology, has concluded that 2005 is likely the warmest on record. According to Hansen, the highest global surface temperature in more than a century of instrumental data was recorded in the 2005 calendar year in the GISS annual analysis. However, the error bar on the data implies that 2005 is practically in a dead heat with 1998, the warmest previous year.

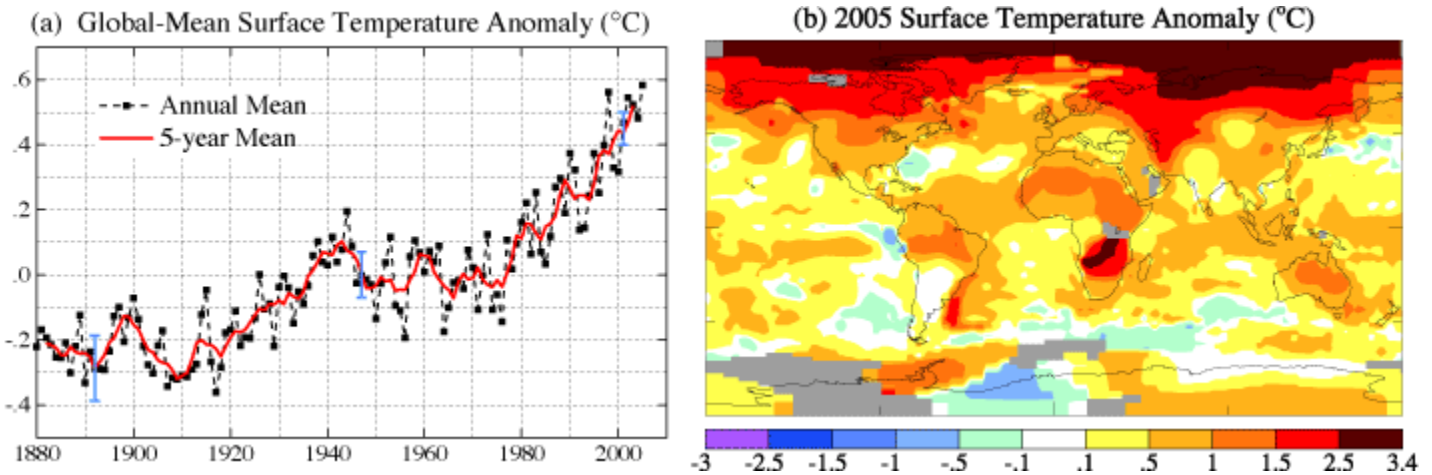


Figure 1: (Left) Global annual surface temperature relative to 1951-1980 mean based on surface air measurements at meteorological stations and ship and satellite measurements for sea surface temperature. Error bars are estimated 2σ (95% confidence) uncertainty. (Right) Temperature anomaly for 2005 calendar year.

Hansen's analysis, summarized in Figure 1 above, uses documented procedures for data over land, satellite measurements of sea surface temperature since 1982, and a ship-based analysis for earlier years. The estimated error (2σ , 95% confidence) in comparing nearby years, such as 1998 and 2005, increases from 0.05°C in recent years to 0.1°C at the beginning of the 20th century. Error sources include incomplete station coverage, quantified by sampling a model-generated data set with realistic variability at actual station locations, and partly subjective estimates of data quality problems.

Record warmth in 2005 is notable, because global temperature has not received any boost from a tropical El Niño this year. The prior record year, 1998, on the contrary, was lifted 0.2°C above the trend line by the strongest El Niño of the past century.

Global warming is now 0.6°C in the past three decades and 0.8°C in the past century. It is no longer correct to say that "most global warming occurred before 1940". More specifically, there was slow global warming, with large fluctuations, over the century up to 1975 and subsequent rapid warming of almost 0.2°C per decade.

Recent warming coincides with rapid growth of human-made greenhouse gases. Climate models show that the rate of warming is consistent with expectations. The observed rapid warming thus gives urgency to discussions about how to slow greenhouse gas emissions.

The map shows that current warmth is nearly ubiquitous and largest at high latitudes in

the Northern Hemisphere. The ranking of 2005 as warmer than 1998 is a result mainly of the large positive Arctic anomaly. Excluding the region north of 75N, 1998 is warmer than 2005. If the entire Arctic Ocean were excluded, the ranking of 2005 may be even lower.

This analysis differs from others by including estimated temperatures up to 1200 km from the nearest measurement station. The resulting spatial extrapolations and interpolations are accurate for temperature anomalies at seasonal and longer time scales at middle and high latitudes, where the spatial scale of anomalies is set by Rossby waves. Thus Dr. Hansen and his colleagues¹ believe that the remarkable Arctic warmth of 2005 is real, and the inclusion of estimated arctic temperatures is the primary reason for the rank of 2005 as the warmest year.

80. Pakistani, South African, Norwegian Candidates for Top U.N. Environment Job

A Pakistani, a South African and a Norwegian are among the candidates to take over the U.N.'s top environmental job in 2006. U.N. Environment Program (UNEP) executive director Klaus Toepfer, a German who has traveled the world tirelessly in the last eight years from UNEP's Nairobi headquarters, is due to retire at the end of March.

Toepfer's deputy Shafqat Kakakhel, a Pakistani career diplomat, gets high marks as a manager from the Stakeholder Forum, which helps represent environmental interests of businesses, scientists and non-government organizations.

Other suggestions include Valli Moosa, a former South African Environment Minister who hosted the 2002 Earth Summit and former Norwegian Environment Minister Boerge Brende, whose candidacy was launched by the Norwegian government.

A Stakeholder Forum publication also suggests ex-environment ministers Simon Upton of New Zealand, Jan Pronk of the Netherlands, Juan Mayr of Colombia and Yolanda Kakabadse of Ecuador along with British environmental expert Derek Osborn.

UNEP has about 1,100 employees. U.N. Secretary-General Kofi Annan will appoint the new UNEP leader after a contest held out of the public spotlight.

81. Diesel Exhaust May Impair Blood Vessel Function

Exposure to diesel exhaust fumes appears to interfere with the normal functioning of the body's blood vessels, European investigators report. "These important findings," they say, provide a potential mechanism that links air pollution to the development of blood clots and heart attack.

Although the harmful effects of air pollution on cardiovascular illness and death are well recognized, the mechanisms involved have been unclear.

Dr. Nicholas L. Mills, from the University of Edinburgh in the UK, and colleagues

¹ J. Hansen, R. Ruedy, M. Sato, and K. Lo, NASA Goddard Institute for Space Studies and Columbia University Earth Institute.

evaluated vascular function in 30 healthy volunteers after they exercised on a stationary bicycle for 1 hour during exposure to fumes from an idling diesel engine. The particulate concentration was maintained at a level encountered in the urban environment. The results were compared with those obtained after breathing normal filtered air.

According to a report in the medical journal *Circulation*, the expected increase in blood flow in the forearm in response to infused agents that dilate blood vessels was significantly blunted after exposure to diesel exhaust fumes but not after exposure to normal air.

Reduced blood flow could fuel blood clots "that could plausibly result in acute cardiovascular events," Mills and colleagues theorize.

Mills suggests in a press statement that retrofit devices that trap diesel exhaust particles might "reduce pollution exposure and benefit public health."

82. Motorbikes '16 Times Worse Than Cars For Pollution'

Motorbikes are churning out more pollution than cars, even though they make up only a small fraction of vehicles on the roads, according to a new report.

Tests on a selection of modern motorbikes and private cars revealed that rather than being more environmentally-friendly, motorbikes emit 16 times the amount of hydrocarbons three times the carbon monoxide and a "disproportionately high" amount of other pollutants, compared to cars. Ana-Marija Vasic at the Swiss Federal Laboratories for Materials Testing and Research, who led the research, said the need to legislate on emissions from motorbikes has been overlooked because there are so few on the roads. The oversight has led to a paucity of research into ways of making their engines run more cleanly.

In Britain, there are 1,060,000 motorbikes on the road but more than 25m private cars.

Dr Vasic's tests showed that, especially in urban traffic, when motorcyclists frequently accelerated quickly, motorbike engines burned fuel inefficiently, giving a sharp peak in emissions. The yearly hydrocarbon emissions of the average two-wheeler in urban traffic measured up to 49 times higher than that of the average car, according to the study, which was published in the journal *Environmental Science and Technology*.

The tests were carried out on a variety of Yamaha, Piaggio and Honda 50cc scooters and Suzuki, Honda and BMW motorbikes with engine sizes ranging from 800cc to 1150cc.

83. New Zealand Ranked Best in World By U.S. Study of Progress on Environment

New Zealand is the top-performing country in the world in protecting the environment, according to a study by Yale and Columbia universities that measured progress on issues such as preserving natural resources, providing clean drinking water, and cutting air pollutant emissions.

New Zealand scored relatively high in the areas of environmental health and management of productive natural resources and biodiversity, according to the environmental performance index developed by analysts at Yale and Columbia. Sweden was ranked second, followed by Finland, the Czech Republic, and the United Kingdom, according to the Pilot 2006 Environmental Performance Index. The United States ranked 28th.

The study rated 133 nations on 16 indicators of environmental progress in broad categories of environmental health, air quality, water resources, productive natural resources, biodiversity and habitat, and sustainable energy.

New Zealand was given an overall score of 88.0 out of a possible 100, which represents the nation's "success rate" toward achieving progress on the 16 indicators, according to the report. Sweden was close behind with a score of 87.8. The United States was given an overall score of 78.5, trailing countries such as Japan (81.9, 14th place), Costa Rica (81.6, 15th), and most nations of Western Europe.

The lowest scores were awarded to Chad (30.5) and Niger (25.7).

New Zealand's top category-specific scores were 98.8 for water resources and 97.9 for environmental health. Its lowest score was 61.4 for management of productive natural resources. Specific scores for the United States included 44.7 for air quality; 73.9 for water resources, 69.7 for sustainable energy, and 66.9 for biodiversity and habitat.

In general, the top-ranked countries "all commit significant resources and effort to environmental protection," which resulted in high rankings across all of the environmental categories, the report said. The lowest-ranked countries tended to be those "underdeveloped nations with little capacity to invest in environmental infrastructure," according to the report.

84. OECD Hails U.S. Progress on Air Pollution, Sees Room For Improvement

The United States has met many of its domestic objectives and international commitments related to the environment, but further progress is possible, according to a report released on January 10th by the Organization for Economic Cooperation and Development (OECD).

For example, since 1996 U.S. emissions of major air pollutants, including carbon monoxide, nitrogen oxide, and sulfur dioxides, declined by between 13 percent and 19 percent, depending on the pollutant, while the U.S. economy grew by 30 percent, OECD Deputy Secretary General Kiyo Akasaka said at a briefing to officially release the 284-page report.

However, OECD recommended the United States manage air pollution through means including: implementing a cost-effective national system to reduce mercury and other emissions from existing power plants; improved monitoring of and public information about the levels of hazardous air pollutants; and development of what are called secondary ambient air quality standards designed to protect U.S. ecosystems.

Problems highlighted in the report include:

- the failure of 45 percent of the nation's rivers, lakes, and estuaries to meet water quality standards for uses such as fishing and swimming;
- the growth in the Mississippi basin of the oxygen-deficient "dead zone" from 10,000 square kilometers (km²), or 3,861 square miles, in the early 1990s to 15,000 km² (5,792 square miles) in 2004; and
- the increase in beach closings from nearly 3,000 days in the mid-1990s to about 18,000 days in 2003.

The report urged the United States to move toward full application of the "polluter pays/user pays" principles as water and wastewater treatment prices are set and to encourage municipalities to work together to improve the cost-effective delivery of their water services.

The report commended the United States for its support in the design and negotiation of many international agreements and for its aggressive efforts to phase out ozone-depleting chemicals. However, the United States' "reputation and influence in multilateral efforts to protect and enhance the global environment are damaged by its failure to ratify major international agreements that it initially advocated and helped design," OECD said in the report. These agreements include the Stockholm Convention on Persistent Organic Pollutants (POPs), the Rotterdam Convention on the Prior Informed Consent (PIC) Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, and the Convention on Biological Diversity.

While the United States did not ratify the 1997 Kyoto Protocol, it did ratify the United Nations Framework Convention on Climate Change, which had aimed to return greenhouse gas emissions to 1990 levels by 2000, the report noted. Although 25 U.S. states have acted either independently or in concert with neighboring states to address climate change, their tendency to move in different policy directions among themselves and from the federal government hinders the United States from achieving the framework convention's goal of reducing greenhouse gas emissions, OECD's report said.

85. Report Says World Resources Insufficient To Satisfy Growing Needs

World resources are insufficient to satisfy the needs of the rapidly growing economies of China and India and sustain the developed economies of the United States and Europe at the same time, the Worldwatch Institute said in a report released January 11th. Although per-capita resource consumption is still low in China and India, the demands on the world's ecosystems by the huge populations of those two countries will "outstrip" the demands of the United States and Europe in the near future, according to the State of the World 2006 report.

While warning of the potential ecological impact of development in those emerging economies, the Worldwatch report also pointed out that the United States still consumes three times as much grain per person as China and five times as much as India and U.S. carbon dioxide emissions per capita are six times the Chinese level and 20 times that of India.

Both China and India have coal-dominated economies, with coal providing more than two-thirds of China's energy needs and half of India's needs. In its International Energy Outlook 2005, released in July 2005, the EIA said coal consumption in the emerging economies of Asia, notably China and India, is projected to more than double over the next 20 years, increasing from 2,118 million tons in 2002 to 3,715 million tons in 2015 and 4,435 million tons in 2025.

The report calls on China and India to avoid the resource-intensive model that the United States and Europe have followed.

Sunita Narain, director of the Center for Science and Environment in India, who wrote the foreword to the Worldwatch report, said China and India have no choice "but to reinvent the development trajectory." The current resource-intensive development model, Narain wrote, is "intrinsically toxic" because it uses huge amounts of energy and materials and generates enormous waste.

The report said both countries already have taken steps to promote the large-scale use of renewable fuels and power from renewable sources. India has the world's fourth largest wind power industry, while China and India are the world's third- and fourth-largest ethanol producers, respectively, according to the report.

86. Rising Global Population, Greenhouse Gases Predicted by 2050

A global surge in population combined with increased emissions of greenhouse gases and new demands for water supplies will place new strains on the global ecosystem by 2050, according to various scenarios studied by 1,300 scientists and detailed in the United Nations' Millennium Ecosystem Assessment released on January 19th. The report, developed over the last four years, was commissioned by the United Nations to examine potential effects of humans on the global ecosystem. The four-volume report said one of the greatest challenges will be meeting a demand for water that is likely to increase by 30 percent to 85 percent worldwide by 2050, with much of the need concentrated in less-developed nations in Africa and Asia.

Overall, the assessment predicts the world will have to sustain an additional 3 billion people by 2050 and a worldwide economy nearly four times larger than today. The report said those estimates suggest an explosion in the consumption of biological and physical resources, which is likely to put enormous pressure on ecosystems around the globe.

The report noted that a massive global commitment to reforestation and preservation would yield only a small reduction in carbon dioxide concentrations--about 15 parts per million to 30 parts per million between 2000 and 2100. Over the same period, fossil fuel emissions alone are expected to drive up carbon dioxide concentrations between 170 parts per million to 600 parts per million, the report said.

Among the other findings in the overall assessment:

- the effects of climate change on the world's ecosystems is "especially" apparent

- in the polar regions, where average temperatures are now warmer than at any time in the last 400 years;
- the global human population, which doubled from 3 billion to 6 billion between 1960 and 2000, is likely to continue to increase over the next several decades but at a slower rate, peaking at between 8.2 billion and 9.7 billion by 2050; and
 - damages to ecosystems caused by contaminants and wastes, such as sewage, are increasing and are likely to outpace human population growth through 2050.