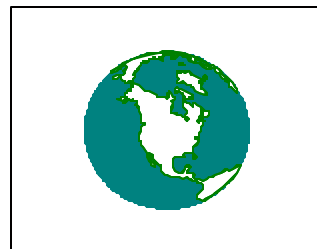


Michael P. Walsh  
3105 N. Dinwiddie Street  
Arlington, Virginia 22207  
USA  
Phone: (703) 241 1297 Fax: (703) 241 1418  
E-Mail [mpwalsh@igc.org](mailto:mpwalsh@igc.org)  
<http://walshcarlines.com>



---

# CAR LINES

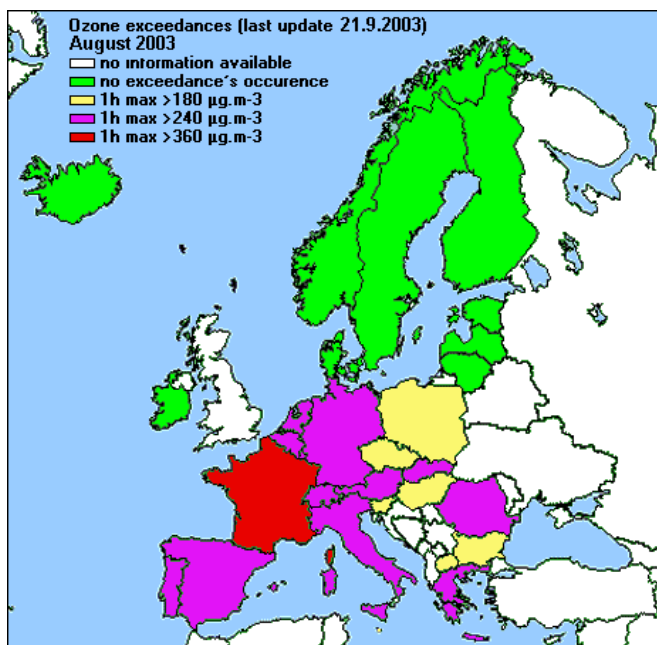
---

Issue 2003- 5

October 2003

---

## Ozone Exceedences in Europe in the Summer of 2003



## Table of Contents

1.	European Heat wave Brought Record Levels Of Ozone	4
2.	Spanish Council Sets National Plan For Fighting Pollution	4
3.	U.K. Transport Commission Urges Taxes on Airlines	6
4.	French Environment Minister to Push Emissions Trading Legislation	7
5.	France Announces Diesel Tax Hike Likely to Be Included in 2004 Budget	7
6.	France Mulls Congestion Charge for Polluted Paris	9
7.	Stockholm Officials Aim to Introduce New Congestion Fee by January 2005	9
8.	Trittin Urges EU-Wide Natural Gas Fuel Network	10
9.	Germany Launches Emissions Trading Debate	11
10.	Sweden Forges Ahead With Its Green Tax Shift	11
11.	Netherlands Unveils Green Spending Squeeze	12
12.	EU Emissions Trading Directive Text Issued	13
13.	European Countries OK Principles to Integrate Environmental Policies	13
14.	EU Considering Using Market To Reduce Ships' Air Pollution	13
15.	INTERTANKO Weighs In On Sulphur Fuel	14
16.	Delay Over Car Efficiency Rules Punished	16
17.	Portugal Transposes EU Motor Vehicle Directive	16
18.	Portugal Enacts Decree to Regulate Disposal Of Vehicles	16
19.	Former Environment Minister Anna Lindh Assassinated	18
20.	Vauxhall Unveils Particulate Filter System For Diesel Engines	18
21.	MEPs Back Tighter Machinery Emission Curbs	19
22.	EU Reaches A Deal On Diesel Non Road Engine Emissions	19
23.	EU Floats Truck Anti-Emissions Kit Standards	20
24.	EU Steps Up Hydrogen Fuel Cell Promotion	20
25.	Mass Production Of Bosch Diesel Particulate Filters To Start In 2005	20
26.	Bigger U.K. Tax Cuts on Biofuels Needed To Meet Expected Targets	21
27.	Energy Agency Says Switzerland May Require Carbon Tax	22
28.	Switzerland Set To Introduce 10 PPM Sulphur Fuel	23
29.	Danes Under Pressure To Incentivize Low Sulfur Diesel	23
30.	U.K. Urged to Introduce Congestion Fees Nationwide	23
31.	BP Says New Fuels Will Cut Emissions	24
32.	Safety Fears Block Hydrogen Filling Station In London	24
33.	EC Releases Report On "External" Costs Of Transport	24
34.	2002 Worst Smog Season In US In Recent Years	26
35.	White House Proposes Reviews for Studies on New Regulations	27
36.	Bond Provision Jeopardizes California's Regulatory Power	28
37.	EPA Study Recommends Tightening Airborne PM Standards	29
38.	Bush Defends Change In Environmental Rules	30
39.	Governors, Canadian Premiers Seek NSR Reconsideration	31
40.	Cheney Wants Supreme Court Review on Energy Case	32
41.	Justice Department Files Brief Supporting Industry Against SCAQMD	33
42.	EPA Denies Petition to Regulate Greenhouse Gases from Motor Vehicles	33
43.	Honda to Begin Mass Marketing of the CNG-Fueled Civic GX	33
44.	EPA Proposes Tighter Aircraft Standards	34
45.	Bush Administration Appeals Restrictions On Mexican Trucks	34
46.	Mexican Environment Minister, Others Dismissed	35
47.	Senate Confirms Leavitt To Head EPA	36
48.	Fuel Suppliers Prepared to Meet Future Low-Sulfur Diesel Requirements	37
49.	CARB Releases Children's School Bus Exposure Study	37
50.	Seattle Area To Get 235 Hybrid Buses	38
51.	2002 Air Quality Trends Report Highlights	38
52.	Canada Finalizes Gasoline Regulations	41
53.	Mexico, EPA Team Up to Cut Air Pollution in Mexico City, Border Zone	42

54.	Industrialist, Climate Change Experts Named To Mexican Environment Ministry Top Spots	42
55.	South Korea Drafting Law to Push Environment-Friendly Cars	43
56.	Sinopec To Voluntarily Offer Lower Sulfur Diesel Fuel	44
57.	Japan's Hino Markets Eco-Friendly Truck	45
58.	China Applied Euro II Emission Standards On Heavy Trucks From Sept.	46
59.	FY 2001 Emissions Dip 2.5 Percent in Japan	46
60.	Japanese Environment Ministry Unveils Draft of Tax Plan	47
61.	UNEP, Mongolia Sign Framework Agreement	47
62.	Indonesia Introduces Euro 2 Standards	48
63.	China Working On New Standard For Gasoline Additives	48
64.	New Zealand Exempts Ethanol Blends From Tax	49
65.	Japan Launches Plan To Promote Efficiency in Transport Sector	49
66.	Indian State Establishes Green Park, Takes Steps to Clean Up Industry, Cars	50
67.	New South Wales May Set "Best Technology" Emission Standards	51
68.	New Zealand Drafts Air Quality Standards On Priority Contaminants	53
69.	Tokyo Emission Standards For Diesel Trucks Go Into Effect	53
70.	Japan Considering Regulations to Reduce Emissions From New Trucks, Buses	55
71.	Clean Cars Of The Future To Dominate Tokyo Show	55
72.	New Zealand to Adopt Vehicle Emissions Testing Scheme	57
73.	India Unveils National Policy On Auto Fuel To Curb Pollution	58
74.	SEPA Tightens Control Over Sulfur Dioxide Emissions	59
75.	China and the IEA's Key World Energy Statistics 2003	59
76.	Philippine Refiners Start Sale Of Low-Sulphur Diesel	62
77.	WHO Warns Of Deteriorating Health In Asia's Booming Cities	63
78.	Two Million Motor Vehicles in Beijing	63
79.	Australia to Review SO <sub>2</sub> , Ozone Standards	64
80.	Argentina Pushing Legislation to Boost Use of Natural Gas in Public Transportation	64
81.	Chile Plans to Amend Framework Law; Legislation to Be Introduced in December	65
82.	Toyota's Hybrid Push Forces Others to Play Catch-Up	65
83.	Global Auto Makers Increasingly Looking To Diesels	66
84.	World Automakers to Discuss Harmonization Of Standards	67
85.	Ozone Hole Reaches Record Size, U.N. Weather Experts Say	68
86.	S&P Issues Report On Global Truck Industry	68
87.	Researchers Suspect Link Between Brain Cancer, Dirty Air	69
88.	Asthmatic Children React To "Moderate" Pollution	70
89.	Global Warming Conditions Responsible For 160,000 Deaths a Year, Study Says	70
90.	Air Pollution May Increase Stroke Risk	71
91.	Tiny Particles Can Trigger Bronchitis	72

## EUROPE

### 1. European Heat wave Brought Record Levels Of Ozone

Levels of ground-level ozone reached their highest levels in 10 years in some parts of Europe this summer due to the heat wave in which thousands of people died, the European Commission has announced. London experienced its highest ozone levels in 10 years, and the pollution in France, Belgium, the Netherlands, and Austria exceeded dangerous levels on several days in August, presenting a serious health risk, the Commission said.

The pollution is caused by oxides of nitrogen and volatile organic compounds reacting in sunlight and is partly due to car exhaust emissions on sunny days. Until this summer, levels had been decreasing in recent years.

A French air quality agency said that ozone might have killed between 1,000 and 3,000 people in France during the heat wave. France recorded around 11,400 more deaths than usual in the first two weeks of August.

"This summer has shown that we have not yet come to grips with levels of air pollution that directly affect citizens' health," EU Environment Commissioner Margot Wallström said in a statement announcing the start of new antipollution rules. The new legislation requires all countries to monitor ozone levels and inform the public if they exceed certain limits, advising those at risk to stay indoors and avoid strenuous exercise.

The law also requires governments to consider short-term measures to reduce pollution, such as limiting road traffic and the use of solvents and paints that emit harmful fumes.

Hit by the hottest weather in some 60 years, France recorded around 11,400 more deaths than usual in the first two weeks of August. Pensioners have been the worst affected, with many struck down by hypothermia and dehydration as temperatures rose over 40 degrees Celsius (104 Fahrenheit).

The European Union has also recognized high ozone levels as a health concern in a study published before the heat wave. "Nearly 1,000 hospital admissions and more than 2,000 premature deaths per year can be attributed to this pollution (high ozone levels) in the EU countries," the European Environment Agency said in a report published in May.

As temperatures rocketed in France this summer, the French also suffered from record levels of air pollution.

### 2. Spanish Council Sets National Plan For Fighting Pollution

Spain's Council of Ministers announced on July 25 a national plan for fighting air pollution, acid rain, and ozone concentrations and established a national climate change office. As required by EU Directive 2001/81/EC on National Emission Ceilings for Certain Atmospheric Pollutants, the Council approved a program to reduce emissions of the four major air pollutants contributing to acidification, eutrophication, and high tropospheric ozone concentrations, specifically sulfur dioxide (SO<sub>2</sub>) and ammonia (NH<sub>3</sub>) and the key ozone precursors nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds (VOCs).

The emissions reduction strategy, with the required reduction target goal of 2010, will focus on transportation, industry, agriculture, and the energy sector. The plan will be revised annually

until 2005 and biannually thereafter.

Early in 2003, the European Commission sent Spain and 12 other member states letters of formal notice of infringement proceedings for "failure to notify measures incorporating directives into national law." Art. 15 of the directive required member states to transpose the directive into national law by Nov. 27, 2002--a deadline that Spain missed.

Under the directive and its implementing legislation:

- Spain must reduce its SO<sub>2</sub> emissions by 49 percent by 2010, down to 714 metric kilotons. Out of all EU member states, Spain has the highest 2010 target ceiling allowance for SO<sub>2</sub> emissions.
- The country must reduce its NO<sub>x</sub> emissions, caused mainly by industry, power plants, and transportation, by 36 percent to 471 kilotons.
- Emissions of NH<sub>3</sub>, which are produced by the agricultural sector, must be reduced by 23 percent to 105 kilotons in 2010.
- The largest reduction requirement is applied to VOCs, caused mainly by the transportation sector; Spain must reduce VOC emissions by 57 percent to 875 kilotons.

In the energy sector, the government plan emphasizes the use of gas and renewable energy sources, the promotion of energy cogeneration, and energy efficiency. In order to reduce industrial SO<sub>2</sub> emissions, proposals include reducing the coal and fuel oil consumption of energy plants, improving the efficiency of Spain's approximately

200 thermal power stations, and improving the quality of the fuel used. Several of the thermal plants also will be equipped with flue gas desulfurization systems. The government also expects to apply measures prescribed in Council Directive 2001/80 on the Limitation of Emissions of Certain Pollutants Into the Air From Large Combustion Plants.

In the area of transportation, the Spanish government said several measures could be used including promoting the purchase of less-polluting vehicles, introducing cleaner fuels, training motorists to have more fuel-efficient driving habits, offering tax incentives for "more environmentally efficient" transportation, and promoting the purchase and maintenance of low-emissions public bus fleets. For transporting merchandise, the government proposes promoting greater railroad usage and improved management of the national highway network.

In a separate decision July 25, the Council modified the structure of the Environment Ministry to create the Spanish Climate Change Office. The new office will be a sub directorate under direct control of the General Secretariat of the Environment and thus an official division of the Environment Ministry. The key function of the new office will be to work with public and private entities to adopt a Strategy for Fighting Climate Change and to apply the Kyoto Protocol mechanisms.

Spain's Council of Ministers (Cabinet) on Sept. 12 agreed to ratify the plan. The council said it would submit its decision for approval by Parliament, which is guaranteed passage given the ruling Popular Party's absolute majority.

According to the United Nations Economic Commission for Europe Environment and Human Settlements

Division, lower ozone levels and reduced exposure to particulate matter in the air will prevent 47,500 premature deaths.

Spain, like most other EU nations, signed the protocol on Dec. 1, 1999, and the European Union acceded on June 23, 2003. As of Sept. 15, Sweden, Denmark, and Luxemburg were the only member nations to have ratified it. The requirements of the protocol are reflected in EU Parliament and Council Directive 2001/81 on National Emission Ceilings for Certain Atmospheric Pollutants, which was to have been transposed into national laws by Nov. 27, 2002--a deadline that Spain and 12 other member states missed.

In terms of cutting pollutant emissions, Spain will have the toughest job with VOC emissions, which must be cut to 875 kilotons by 2010--a 57 percent reduction; in addition to placing emissions limits on industrial solvents, the government has said it will promote cleaner fuels and fuel efficiency in the transportation sector--the main source of VOC emissions.

Meeting the 49 percent reduction target on sulphur dioxide emissions will include reducing coal and fuel oil consumption at energy plants, upping the efficiency of some 200 thermal power stations, and improving the quality of the fuel used, mainly by reducing the sulphur content in some liquid fuels, as prescribed by Royal Decree 287/2001.

### **3. U.K. Transport Commission Urges Taxes on Airlines**

The United Kingdom's Commission for Integrated Transport Sept. 1 called for a major shake-up of the taxes airlines face for the air pollution they cause, arguing that the current aviation passenger duty is poorly designed to achieve

environmental objectives. The commission, which is funded by the government to provide independent advice and scrutiny on its progress, told the U.K. Department of Transport that taxes should be raised because airlines "are responsible for far more pollution than they are held accountable for."

An aviation passenger duty was introduced in 1993 on the grounds that airlines did not pay fuel duty or value added tax (VAT) and were under-taxed compared with other sectors of the economy. But the tax collected from the airlines--£800 million (\$1.26 billion) a year, from between £5 (\$7.87) and £40 (\$62.96) per passenger--is only a fraction of the tax that would be collected if the airlines paid fuel duty and VAT, the report said.

The commission said the aviation industry continues to receive significant benefits from the present taxation system. Tax exemptions for airlines from VAT and the fuel duty--worth £7.5 billion (\$11.80 billion) in 2000--will be worth £16.6 billion (\$26.12 billion) in 2020 and £21 billion (\$33.04 billion) in 2030, if passenger numbers increase as forecast, the report said.

The commission said passengers at U.K. airports tripled in the 20 years to 2001, rising from 50 million to 162 million. Future forecasts show demand rising by between 4 percent and 5 percent a year with fare prices expected to fall, it said.

"Ten years ago, the aviation industry worldwide was responsible for 3.5 percent of all human-caused climate change emissions--the equivalent of the United Kingdom's entire greenhouse gas emissions," the commission said. "By 2050 it is forecast to rise to 15 percent of the world total."

The commission estimated that the

airline industry is responsible for £1.4 billion (\$2.2 billion) in costs due to climate change emissions in the United Kingdom.

The commission said that passing on these costs to the airlines is both in line with the U.K. government's view that the "polluter pays" and "incentivizes airlines to raise their standards further." Existing charges give the airlines little incentive to reduce costs or passengers to consider their journey against the damage it is causing, the report said.

The European Commission floated the idea of an environmental tax on aviation in September 2002 with a study on the issue. "A European tax based on calculated emissions seems to be the best choice and can probably be implemented in practice," it concluded. It said the tax would have "no noticeable influence on competition between European and non-European airlines."

The House of Commons Environmental Audit Committee July 29 issued a report accusing the Department for Transport of "overt bias" by emphasizing the economic benefits of aviation, while seeking to mitigate rather than avoid the environmental impacts. The committee recommended replacing the U.K. current air passenger duty with "an emissions charge levied on flights and clearly displayed on travel documentation." The committee also urged the Treasury to consider the case for introducing a VAT on ticket sales for domestic flights within the United Kingdom.

#### **4. French Environment Minister to Push Emissions Trading Legislation**

French Minister of Ecology and Sustainable Development Roselyne Bachelot-Narquin announced Sept. 1 plans to introduce new legislation in

early 2004 laying out the details of a national emissions trading system that is seen as one of the key elements in the battle against climate change. The legislation, now being prepared by Environment Ministry staff, will create a framework for the distribution of emission quotas for the principal greenhouse gases to about 1,500 of France's largest industrial firms, Bachelot-Narquin said. The law will also establish rules for emissions trading, which will eventually be merged with the European Union's wider scheme for trading emissions permits across the 15-member bloc.

Emissions trading is one of the market-based flexible mechanisms that nations may use to meet their greenhouse gas reduction targets under the Kyoto Protocol to the United Nations Framework Convention on Climate Change. The climate change treaty calls on industrialized nations to collectively cut carbon dioxide emissions 5.2 percent by 2012, based on 1990 levels; the accord requires the EU as a bloc to reduce CO<sub>2</sub> emissions 8 percent by 2012.

Bachelot-Narquin outlined several other climate change-related initiatives set to launch in the coming weeks during her Sept. 1 announcement, including new government support for research and development of low-emission vehicles (see below) and a 2003 Climate Plan that will establish immediate priorities for reducing greenhouse gas emissions in the transport and residential housing sectors.

#### **5. France Announces Diesel Tax Hike Likely to Be Included in 2004 Budget**

French Prime Minister Jean-Pierre Raffarin announced Sept. 15 that the 2004 budget bill will likely contain a "moderate" tax hike on diesel fuel, the

proceeds of which will be used "exclusively" to fund new investment in cleaner railway infrastructure. Taxes on diesel fuel will "probably" rise by about 2.5 euro-cents (2.8 cents) per liter, according to Minister of Ecology and Sustainable Development Roselyne Bachelot-Narquin, who accompanied Raffarin during the announcement of a new plan aimed at stoking research and development of clean car technology.

Raffarin's diesel tax increase announcement--likely to raise about [Euros]800 million (\$902.6 million) in new revenue--trumped the presentation of a new Clean Car Program, which will see the state triple subsidies and other fiscal advantages for specialized research and development in 2004.

Government critics noted that the new diesel tax--not applicable to professional drivers or transport companies--will offset nearly half the [Euros]1.8 billion (\$2 billion) in tax cuts expected from a 3 percent cut in personal income tax also slated for the 2004 budget bill.

Raffarin said the new diesel tax offered "continuity" with a plan launched in 1999 by France's previous Socialist-Greens coalition to reduce the gas tax differential between normal unleaded fuel and higher-pollution diesel. That project--suspended in 2001 after a sudden rise in fuel prices--called for a gradual rise over seven years in the tax on diesel, until the gas tax differential was similar to that seen in other European Union countries.

At present, taxes make up between 57 percent and 62 percent of the per-liter price for regular or super unleaded fuel, but just 38 percent of the per-liter diesel price.

The gas tax is France's third-leading revenue-raiser, behind value-added tax and personal income tax, bringing in an

estimated [Euros] 24 billion (\$27.1 billion) annually.

Raffarin justified the diesel price increase on "ecological" grounds, describing the tax hike as "environmental financing" that would help fund railway infrastructure needed if France is to "meet its international obligations to curb greenhouse gas emissions as part of the fight against climate change."

Bachelot-Narquin, for her part, signaled the government's willingness to consider a new system for encouraging the sale of low-emission vehicles, hinting that the Ministry of Ecology and Sustainable Development was studying the possibility of imposing new environmental charges on high-pollution vehicles.

The clean car plan also aims to reduce greenhouse gas emissions by funding research aimed at increasing fuel efficiency, improving motor technology and filter systems, and reducing consumption caused by extras like air conditioners, Bachelot-Narquin said.

The clean car plan included few new fiscal advantages for low- or no-emission vehicles, but it did:

- roll over an existing individual tax credit of up to [Euros] 2,350 (\$2,651) on the cost of purchasing natural gas-powered vehicles;
- implement subsidies of [Euros] 3,050 (\$3,441) to [Euros] 3,810 (\$4,298) on the purchase of electric vehicles;
- allow local governments to offer professional tax exonerations of up to [Euros] 350 (\$395) per vehicle for firms switching to electric light-utility or delivery vehicles; and
- offer subsidies of [Euros] 1,000 (\$1,128) per vehicle for car rental firms trading in traditional vehicles for those using clean car technology.



## **6. France Mulls Congestion Charge for Polluted Paris**

France is considering a London-style vehicle congestion charge for Paris in an effort to reduce choking pollution which has pushed the capital close to emergency traffic restrictions, a government minister said.

"An urban toll is one solution," Ecology Minister Roselyne Bachelot told Europe 1 radio last week as Paris braced for another day of high ozone and carbon dioxide levels.

"All aspects of the London experience are worth studying," said Bachelot, who on Monday said a 2.5 cent per liter rise in taxes on diesel next year was an environmental measure.

London mayor Ken Livingstone introduced a controversial five pound a day (\$8) "congestion charge" in February to cut traffic in the capital's center.

Traffic driving into the eight-square-mile central zone covered by the charge fell 16 percent in the first three months.

Some funds raised by the charge are to be pumped back into London's stressed public transport. The measure has also boosted crawling traffic speeds and let buses and taxis move more freely.

The London charge has generally been deemed a success despite much initial opposition in a country where road charging is barely known - unlike France, where drivers are already used to paying tolls for using motorways.

Pollution levels in Paris saw police impose speed restrictions last week for the third day running. The authorities could order every other car off the road

at the weekend in an attempt to limit pollution levels.

The summer heat wave, which killed more than 11,000 mainly elderly people, had kept ozone levels high for an unprecedented period, Bachelot added.

Alternate car travel - under which vehicles are only allowed on the road every other day, depending on whether their registration plates end in an odd or even number - has been imposed only once before in Paris in October 1997. The measure cut traffic by 20 percent.

## **7. Stockholm Officials Aim to Introduce New Congestion Fee by January 2005**

Congestion fees for driving vehicles into central Stockholm are expected to be introduced as early as Jan. 1, 2005, according to Industry Ministry Political Adviser Per Bolund. Stockholm will be one of the only cities in the world to impose such fees once its scheme is put in place; only London and Singapore currently impose citywide congestion fees on vehicles, according to Bolund.

The primary aims of Stockholm's plan are to reduce air and noise pollution, compel industry to use roadways more efficiently, and ease rush-hour congestion, Bolund said.

The fee will be introduced despite a Sept. 14 nonbinding referendum in which 12 of Stockholm County's 26 municipalities overwhelmingly opposed the fee. Fees are scheduled to be imposed only in one municipality, Stockholm City, whose voters did not participate in a referendum on the issue.

The Stockholm City Council, which governs the Stockholm municipality, June 2 voted 51-49 to approve the fee (Act No. 2003:61). But the city needs

national parliamentary approval because the scheme involves introducing a new type of tax never used in Sweden. A final proposal to make the needed changes to national law being prepared by the ministries of Industry and Finance should be submitted to the Swedish Parliament in early spring 2004, Bolund said.

The national law, as written, would permit any Swedish municipality to introduce congestion fees. Bolund said Stockholm's goal is to put the scheme in place Jan. 1, 2005, and no later than March 1, 2005.

A trial period will last until the autumn of 2006, at which time a referendum will be put to Stockholm voters on whether to continue the program.

Fees will be imposed during, around, and between rush-hour periods. Rush-hour periods are defined as 7.30 a.m. to 8.30 a.m. and 4:00 p.m. to 5:30 p.m. The fee will be 20 Swedish kroners (\$2.50) during rush hour. A 10 kroner (\$1.25) fee will be assessed between rush hour periods, for 30 minutes immediately prior to the morning rush hour, and the 30 minutes immediately after the evening rush hour period ends. No charges will be assessed on weekends.

Every time a vehicle enters or exits the city it will be charged; a daily maximum charge has been established.

As currently envisioned, devices fitted over roadways will scan a ticket or other emblem affixed to windshields, automatically deducting fees from ticket balances. If a vehicle has no ticket, a camera will snap a picture of its license plate and an invoice will be sent to the vehicle's registered owner. Non-Swedish registered vehicles are subject to the fee.

The system exempts emergency and certain other public vehicles, motorcycles, taxis, hybrid fuel, and certain other environment-friendly vehicles, and vehicles used by handicapped persons.

Estimates forecast the fee will rise up to \$150 million annually, all of which will be spent on public transportation improvements, Bolund said.

In the referendum, 81.4 percent of voters in participating municipalities opposed the fees, while 15.1 percent supported them. A total of 74.1 percent of eligible voters cast ballots, the data showed.

Stockholm municipality, comprising the city's center, has the authority to make decisions regarding its own fee structures and need not bow to protests from other municipalities. Municipalities abutting Stockholm's borders fear commuters will crowd autos into their neighborhoods before boarding public transportation for the last leg of their journey into the city center. Suburban residents also fear they will have to pay to pass through city outskirts on journeys to other Stockholm County municipalities.

In addition to meeting Stockholm city aims, the congestion-fee scheme should also assist Sweden in meeting air pollution reduction targets required by European Union directive 1999/30/EC, related to sulfur dioxide, nitrogen dioxide, and oxides of nitrogen, particulate matter, and lead in ambient air, Bolund said.

## **8. Trittin Urges EU-Wide Natural Gas Fuel Network**

Jürgen Trittin, Germany's environment minister, called for the establishment of a Europe-wide network of natural gas

fuelling stations for cars. The minister made his statement after being presented with a study demonstrating that more widespread use of natural gas as a road fuel would bring significant environmental benefits. The report was produced by economics think-tank the Wuppertal institute and sponsored by an industry association that supports the use of natural gas.

### 9. Germany Launches Emissions Trading Debate

German government and industry representatives will soon start to thrash out a formula to share emissions allowances between sectors due to come under the EU carbon dioxide emissions trading directive. All member states are required to submit a so-called national allocation plan by the end of next March.

The environment ministry is finalizing its position on issues including handling of new entrants after launch, how to deal with plant closures and how to take into account emission cuts made before the scheme's launch.

Firms have been given until mid-November to give their views. By this time emissions data for 2000-02 should be available for the 4,500 or so facilities that will be affected by the scheme in Germany, so "completing the picture".

The government is preparing to decide on an overall target for firms covered by the scheme to reduce emissions (an emissions cap) in parallel with debate over allocation of allowances.

It wants industry overall to cut 45m tons of carbon dioxide (CO<sub>2</sub>) from a 1998 baseline by 2010, in line with targets in an existing voluntary agreement. This would also be consistent with Germany achieving its Kyoto protocol goal of a

21% emissions cut between 1990 and 2008-12.

### 10. Sweden Forges Ahead With Its Green Tax Shift

Sweden should next year reach an important milestone in an ambitious ten-year green tax shift program under 2004 budget proposals just unveiled. The budget appears to reflect Swedish determination to advance its green policy agenda even as other European countries are downgrading theirs. It could also reflect a greater freedom of maneuver due to Sweden's relatively good current economic performance.

Under the budget, SKr2bn-worth (€221m) of taxes will be switched next year from economic "goods" to environmental "bads". This will take the total shifted in this way since 2000 to over SKr10bn and put the government one-third of the way towards its target of SKr30bn by 2010.

Energy dominates the environmental tax rises. Sweden's carbon dioxide tax on households and the service industries will jump by a whopping 18%. Electricity tax paid by the same groups will rise by SKr0.01 per kilowatt hour (kWh), and **diesel tax will rise by SKr0.10 per liter**. Meanwhile, taxes on pesticides will rise by SKr10 per kilogram of active product.

The green tax rises are to be compensated by a SKr200 per person cut in state income tax for all employed individuals and a 0.12 percentage point reduction in payroll tax, worth SKr640m. Meanwhile, **biofuels will be given full exemption from excise duty and carbon dioxide-neutral fuels will be exempt from both carbon dioxide and energy taxes.**

Other budget proposals include the

creation of a center for "environment-driven business development" under the Swedish business development agency. Previously announced tax changes to encourage greater energy efficiency in thermal power stations will be implemented. The government will make formal proposals soon on introducing tax reductions on environmental investments.

The budget's single faint whiff of deregulation comes in a decision to shorten processing times for environmental impact assessments (EIAs), part of a package of measures designed to encourage greater entrepreneurship. Sweden's "environmental code" committee has been ordered to make EIAs "more efficient without setting aside health and environmental protection requirements".

Environmental spending per se is to rise, as already proposed in the spring. As expected, big allocations are included for biodiversity and habitat conservation.

### **11. Netherlands Unveils Green Spending Squeeze**

Dutch environmental spending is to be slashed by €900m over the next four years under a new austerity budget. NGOs and opposition parties accused the government of downgrading environmental protection. Junior environment minister Pieter van Geel denied this. The government stood by all agreed environmental aims, he insisted, but wanted to achieve them more cheaply.

Fully 70% of the environment budget cuts derive from lower cost estimates for purchasing carbon dioxide (CO<sub>2</sub>) credits abroad to help the Netherlands meet its greenhouse gas reduction target. The government initially expected to pay

€10/ton of CO<sub>2</sub> but now puts the price at €5/ton, an environment ministry spokesperson said.

Meanwhile, the government is to axe subsidies worth nearly €200m over the next four years available for home CO<sub>2</sub> emission reduction activities. Environmental groups described the move as "the final blow to energy saving and solar energy".

But Mr. van Geel defended the measure. An assessment had shown that three-quarters of home insulation activity was not dependent on the subsidy. The government therefore expected only to lose 0.5m out of 2m tons of CO<sub>2</sub> cuts programmed from this sector. Moreover, energy and road fuel tax rises also announced in the budget should lead to compensatory CO<sub>2</sub> cuts, he added.

State support for contaminated site clean-up is another of the budget's environmental casualties, with spending due to be cut by nearly €100m over the period 2004-2007. Road and rail noise abatement programs are also to be cut by €22m over the four years.

Probably uniquely in Europe, the budget has been scrutinized by an official environmental assessment agency, currently based in the national institute of public health and the environment (RIVM) but in the process of becoming independent. The agency concludes that the government has cleverly managed to cut spending without inflicting much short-term damage. It also notes that nature conservation spending is to rise by €700m. However, it identifies longer-term risks of cutting major spending programs and of cost-overshoots should the international price of CO<sub>2</sub> credits rise in future.

The budget reflects a broader government goal of cutting the costs of

environmental regulation by a quarter. A thorough review of all green legislation is currently underway, based on which every piece of law "will be toned down, streamlined and where necessary improved" the government says. Concrete proposals are expected to emerge next month.

## **12. EU Emissions Trading Directive Text Issued**

The council of ministers has published the definitive text of the EU's new greenhouse gas emissions trading directive. The law was finalized in July based on a compromise deal reached with MEPs. It will enter force once published in the EU's official journal. The deadline for transposition will be the last day of this year. By early next year member states will have to submit emission allowance allocation plans for approval by the European Commission.

## **13. European Countries OK Principles to Integrate Environmental Policies**

The 15 members of the European Union, 10 incoming member states, and three candidate countries have agreed to a series of general principles designed to help integrate the environmental policies of the European Union. The agreement was reached at a meeting held in the northern Italian city of Trieste on July 8; this was the first major initiative of the six-month Italian tenure as European Union president, which began July 1.

Although the 28-nation group did not agree to specific policy initiatives, delegates to the talks did agree on a series of priorities, identifying water quality and waste disposal as the most important environmental policy areas facing the incoming EU members.

Additionally, officials said, countries agreed to the principle of integrating economic development and environmental protection as a common policy. That means EU structural funding set to start when the 10 new countries join the European Union in 2004 will take that principle into account.

According to a statement from the Italian Ministry of the Environment, the points agreed to in Trieste will be officially presented to the European Union at a special meeting of the EU ministers for Environment, Development, Internal Competition, and Cooperation at an Oct. 27 meeting in Luxembourg.

In addition to the 15 current members of the European Union, incoming members Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia attended the meeting. Additionally the candidate states of Bulgaria, Romania, and Turkey were represented.

## **14. EU Considering Using Market To Reduce Ships' Air Pollution**

The EU is considering one or even a series of market-based measures to control shipping air pollution. The European Commission has asked a consultancy to suggest promising schemes by January. Possible options were discussed at a stakeholder workshop in Brussels. The new focus on economic instruments comes as legislative debate continues over European Commission proposals issued in 2002 to tighten permissible ship fuel sulphur levels in pollution-sensitive areas.

Shipping industry interests have called for economic instruments to be introduced instead of legislative sulphur curbs. The Commission has rejected

this, though the European parliament has accepted that such approaches could be used to achieve an envisaged second round of pollution cuts.

Consultancy Nera has now been asked to suggest appropriate economic instruments for cutting air pollution from ships. Possible candidates were discussed at last week's workshop.

Sweden's ship owners' association is proposing an ambitious cap-and-trade scheme for both sea and land emissions of sulphur dioxide and nitrogen oxides. (see below) This would cover not only all ships entering EU waters but also all land-based sources regulated by the integrated pollution prevention and control (IPPC) directive.

Participation by ships would be voluntary, but since their abatement costs are lower they would have strong incentives to cut emissions and sell the credits to installations on land. The idea would demand amendments to several major EU directives, however, and received a cool reception from policymakers at the workshop.

Another proposal is an emissions trading scheme called "offsetting", proposed by a consortium of ship-owners and fuel producers named SEAA.T. Under it, some ships would install abatement technology cutting emissions well below levels required by law. These credits would be transferable to vessels without the technology.

Other options expected to be considered by Nera are differentiated charges for entering national waters or ports depending on a vessel's environmental profile, plus a version of kilometer-charging for ships. Though these could be directed at cutting other types of pollution, all are subject to various difficulties and look less likely

than emissions trading to get off the ground.

Any new EU legislation that might result would probably emerge through the clean air for Europe (Cafe) program, the Commission's thematic strategy on air quality, by 2005.

## **15. INTERTANKO Weighs In On Sulphur Fuel**

European moves to reduce sulphur emissions into the atmosphere, while praiseworthy in their intent, could create logistical and operational difficulties for ship owners and could actually pose a significant safety risk for ships according to shippers association, INTERTANKO. INTERTANKO members are conscious that air emissions from ships need to be reduced and are therefore fully supportive of the international legislation aimed at reducing emissions which are noxious to the atmosphere. However INTERTANKO believes that Europe's moves on sulphur emissions are counter-productive to a more rapid implementation of MARPOL Annex VI and are going against what tanker operators can reasonably and safely achieve.

The European Commission's proposed amendments to the Directive on Sulphur Content in Marine Fuel 1999/32 include a provision imposing mandatory use of fuel with a sulphur content of maximum 0.2% for ships while at berth. INTERTANKO strongly recommends that the 0.2% sulphur provision be deleted from the proposals, pointing to major difficulties that would arise if such a deletion were not made.

- The first difficulty is that this grade of fuel is not a standard marine fuel and may not be available in sufficient quantities for all ships to use. A secure

- supply of quality fuel needs to be guaranteed to ensure vessels' safety.
- Second, this proposal will mean substantial engine room modifications on many ships. Marpol Annex VI already specifies the use of 1.5% sulphur fuel in designated Sulphur Emissions Control Areas (SECAs). This fuel has to be carried separately from the standard fuel (average 2.6% sulphur) used by ships while in international trade. Mandatory use of 0.2% sulphur fuel while ships are at berth means that a third grade of fuel has to be segregated on board, which will require an increase in the number of bunker tanks on ships, changes in vessels' ability to segregate different fuels (and lubricating oils compatible with those fuels) and modifications to engine room pipeline arrangements, some of which would need to be effected while the vessel is in dry-dock. In addition, engines not needing modification to satisfy Marpol Annex VI may require modification to accommodate the EC proposal.
  - Third, the proposal gives no time allowance to achieve compliance. INTERTANKO suggests that, if the EC will insist on pursuing its current proposal, then its application be applied on completion of a vessel's first dry-dock after the regulation comes into force.
  - Fourth, vessels coming from non-EU ports will not have 0.2% sulphur fuel on board. Nor is there any time allowance given to take on board the fuel necessary for a EU port visit. INTERTANKO suggests at least six hours time allowance, which could be reduced if such fuel could be provided directly from shore tanks.
  - Fifth, there is no time allowance given for the necessary cooling of engine mechanisms between heavy fuel operation and 0.2% gasoil operation. Safety could be compromised if fuel changeover were hurried, resulting in possible engine fuel starvation and blackout of the vessel. INTERTANKO suggests a six hour allowance.
  - Sixth, the use of 0.2% gasoil in boilers designed to burn higher viscosity fuels will create unsafe conditions and unsafe working environments when switching from heavy to lighter fuel when the boiler is on load and the furnace is hot. INTERTANKO proposes a specific dispensation for boilers, which are used by most tankers to power cargo pumps, heat cargo and moor the vessel.
  - Seventh, INTERTANKO points to potential conflicts in timing between the entry into force of the Directive and the entry into force of Marpol Annex VI.
  - Lastly, from a legal point of view, it may be the case that the physical changes to the vessel required by this proposal can actually only be legally imposed by amending the international treaties governing the relevant design, construction and equipment features. Any unilateral regulation and enforcement in this field could potentially trigger violations of the rights of ships flying the flag of other nations being parties to, and operating in full compliance, with the provisions of, MARPOL 73/78.

INTERTANKO stresses that the best, maybe the only, solution safely and effectively to reduce emissions from ships is through a global regulatory system and not through regional arrangements with different standards and requirements. It also suggests that the quality and adequacy of fuel delivered to ships is more important than legislation, which targets the ships themselves.

#### **16. Delay Over Car Efficiency Rules Punished**

Italy has become the second EU member state to be condemned by the European court of justice for failing to require presentation of consumer information on new cars' fuel economy and carbon dioxide emissions by January 2001. A similar judgment against France was issued in June. Italy has still to comply with the requirement, while France did so about a year before its condemnation. The European Commission has threatened several other countries with court action over the same issue.

#### **17. Portugal Transposes EU Motor Vehicle Directive**

The Portuguese Council of Ministers (Cabinet) has approved a law further regulating emissions from motor vehicles and the sale of replacement catalytic converters. The new decree-law, for which a number is pending, will go into effect following its publication in the *Diário da República*, Portugal's national register.

It both alters Portuguese Law 2002/2002 and is a tardy transposition into national law of Council Directive 2002/80/EC Adapting to Technical Progress Council Directive 70/220/EEC on the Approximation of the Laws of the

Member States Relating to Measures to be Taken Against Air Pollution by Gases from Engines of Motor Vehicles.

Whereas existing legislation prohibited the sale or supply of replacement catalytic converters for EU-approved cars and vans other than those fitted with on-board diagnostic systems (OBD), Directive 2002/80/EC extended this requirement to include those fitted with OBD systems. In the interest of ensuring that improvements in emissions standards for new vehicles maintain these standards throughout their lifetime, only EU type-approved replacement catalytic converters can be supplied or sold for use in vehicles meeting EU emission standards.

Directive 2002/80/EC says that replacement catalysts for EU type-approved vehicles (including those produced by or for the vehicle manufacturers) must be marked in compliance with the directive's requirements; it also says that replacement catalysts must be accompanied by specific information and marking requirements. Moreover, the directive requires manufacturers to provide information on replacement catalytic converters sold in the EU before Nov. 3, 2002, when the directive went into effect.

EU member states were required to transpose Directive 2002/80/EC into national law by May 31, 2003, but Portugal missed this deadline.

#### **18. Portugal Enacts Decree to Regulate Disposal Of Vehicles**

More than a year after the transposition deadline of an EU environmental directive, the Portuguese government Aug. 24 enacted a law regulating the management and treatment of end-of-life vehicles, their components, and



materials. The new law expands existing Portuguese waste recovery policy to provide for the recovery and recycling of old vehicles and foresees "adequate" national coverage of used vehicle reception and treatment centers by 2010.

Decree-Law 196/2003, which was approved by the Portuguese Council of Ministers June 26, went into effect the day after its Aug. 23 publication in the *Diário da República*, Portugal's national register. The law transposed into national law European Parliament and Council Directive 2000/53 on End-of-Life Vehicles.

The European Commission in June sent letters of formal notice to Portugal and 14 other EU member nations for "failure to notify measures incorporating directives into national law," given that member states were to have brought into force "the laws, regulations and administrative provisions necessary to comply" with Directive 2000/53 by April 21, 2002.

Under the new law, with its 32 articles and addenda with technical specifications, operators dedicated to the dismantling of defunct vehicles must by Jan. 1, 2006, guarantee that for all end-of-life vehicles produced after 1980 "the reuse and recovery shall be increased to a minimum of 85 percent by an average weight per vehicle and year." Within the same time limit the reuse and recycling must increase to a minimum of 80 percent by an average weight per vehicle and year.

"Reuse" means any operation by which components of end-of-life vehicles are used for the same purpose for which they were conceived. "Recycling" means the reprocessing in a production process of the waste materials for the original purpose or for other purposes but excluding energy recovery.

"Recovery" refers to the recovery of raw materials and/or the production of energy from certain waste.

For vehicles produced before Jan. 1, 1980, the Portuguese law sets the EU's minimum allowed targets of 75 percent for reuse and recovery and 70 percent for reuse and recycling. The reuse and recovery of all end-of life vehicles must by Jan. 1, 2015, be increased to a minimum of 95 percent by an average weight per vehicle and year. Within the same time limit, the reuse and recycling must reach a minimum of 85 percent by an average weight per vehicle and year.

The law also establishes requirements and procedures to be followed by operators. The destruction of all vehicles must be confirmed by a "certificate of destruction" approved by the Institute of Waste, a government agency that forms part of the Ministry of Cities, Territorial Planning, and the Environment; operators must keep a copy of this certificate for at least five years after receiving the vehicle.

According to the European Commission, end-of-life vehicles generate between 8 million and 9 million tons of waste in the EU annually. One of the main goals of Directive 2000/53 was to minimize the impact of end-of-life vehicles on the environment, "thus contributing to the protection, preservation, and improvement of the quality of the environment and energy conservation." Vehicle components containing lead, mercury, cadmium, and hexavalent chromium are of particular environmental concern and, according to the directive, "should be banned."

Supervision and ensuring compliance with the Portuguese law will fall under the jurisdiction of the General Inspectorate of Environmental Activities. Individuals failing to comply will see fines of between [Euros] 250 and

[Euros] 3,740 (\$275 to \$4,132.70), while company fines will range from [Euros] 500 to [Euros] 44,800 (\$550 to \$49,280).

### **19. Former Environment Minister Anna Lindh Assassinated**

Swedish foreign minister Anna Lindh, who died after being stabbed in Stockholm, was a passionate environmental campaigner who served four years as her country's environment minister. Ms Lindh, who was 46, became environment minister in 1994. During her tenure she fought in particular for tougher EU and international controls on chemicals, **for stricter limits on sulphur in motor fuels** and for caution over the environmental release of genetically modified organisms. She continued to play an active role in national and EU environmental policy issues after becoming foreign minister in 1998.

Ms Lindh's fellow Swede and social democrat, EU environment commissioner Margot Wallström, praised Ms Lindh as "outstanding as a mother and a politician" and said she considered her murder as an attack on democracy both in Sweden and in Europe.

### **20. Vauxhall Unveils Particulate Filter System For Diesel Engines**

Vauxhall gave first details of a new Diesel Particulate Filter (DPF) system, which needs no additives and avoids other disadvantages of conventional systems. Performance, fuel consumption and CO<sub>2</sub> emissions remain at levels similar to operation without a filter thanks to an intelligent regeneration strategy. The after-treatment system, including a pre-catalyst close to the engine and an

oxidation-catalyst, is designed to reduce all exhaust emissions, especially hydrocarbons (HC) and carbon monoxide (CO).

The DPF-system makes its production debut early next year in Vectra and Signum with the new 1.9-liter CDTi ECOTEC engine, which was unveiled at the Frankfurt International Motor Show in September.

The new diesel particulate filter consists of a honeycomb-like, ceramic core made of silicon carbide, perforated by microscopic channels. Exhaust gasses pass through the channel walls, on which the particulates collect and these must be burned off regularly, to prevent the filter from exceeding back-pressure limits. But instead of using additives in the fuel for the regeneration process, Vauxhall has chosen to apply a precious metal coating to the filter substrata and inject additional quantities of fuel, to raise the exhaust temperature to the necessary 600 degrees C.

This requires an injection system with flexibility under all engine-load conditions, since the system must operate not only under full-load, but also when the car is driven on short journeys. To meet these demands, Vauxhall will use the latest common rail direct-injection system that allows constant and precise control of the fuel-injection process (e.g. amount, pressure).

Another advantage of the system is that regeneration occurs at irregular intervals, according to the way the car is driven. For instance, the combustion of the filtered particulates, and thus the additional injection of fuel, only takes place when the build-up of particulates has caused sufficient back-pressure in the filter. Unnoticed by the driver, the process is controlled via pressure and temperature sensors in the DPF-unit.

Located between the pre-catalyst near the engine and the particulate filter is an oxidation catalytic converter under the floor, which reduces the HC and CO emissions with the help of the oxygen in the diesel emissions. Oxides of nitrogen (NOx) emissions are also lowered to meet the Euro 4 standard which is due to come into force in 2006.

## **21. MEPs Back Tighter Machinery Emission Curbs**

Proposals from German MEP Bernd Lange to strengthen draft new emission standards for engines in non-road machinery, canal barges and railway locomotives received the thumbs-up from the European parliament's environment committee. If adopted by the full assembly Mr. Lange's plans would pit the parliament against the council of ministers over a directive proposal made by the European Commission late last year. The key demand is for a second wave of limits on nitrogen oxides (NOx) from machinery such as heavy-duty construction equipment to come into force from 2010. Ministers so far have only agreed to a first round of cuts from 2006.

Other committee changes which could add to friction with the council are a proposal for a similar second stage of cuts in emissions of NOx, carbon monoxide and particulates from inland waterway vessels. MEPs have also voted for the new emission standards to apply to all railway locomotives instead of the limited coverage proposed by the Commission.

The committee also endorsed a draft directive setting common EU rules on monitoring and reporting greenhouse gas emissions. But it set up a clash with the Commission by saying that member states should be able to choose 1990 or

1995 as the reference date for measuring emissions of the three fluorinated gases covered by the Kyoto protocol. The Commission wants a fixed 1995 baseline, arguing that any other date could endanger emissions data integrity.

## **22. EU Reaches A Deal On Diesel Non Road Engine Emissions**

EU governments and the European parliament have reached an outline agreement on new emissions standards for diesel engines in heavy machinery, trains and inland waterway vessels under a directive on non-road mobile machinery. The compromise requires formal ratification by both sides. The deal follows talks between the council of ministers and parliamentary rapporteur Bernd Lange. Both sides had already agreed that a first round of tighter standards should be implemented around 2006. The compromise secures the European parliament's main demand that further waves of cuts in nitrogen oxide emissions from most engines be agreed now. In return, Mr. Lange has dropped the parliament's insistence on second-stage cuts in emissions from inland waterway vessels.

Under the deal, first-wave cuts - called IIIA - will see new limits on carbon monoxide (CO), hydrocarbons (HC), NOx and particulates (PT) from all vehicles. These will enter force between 2005 and 2008 depending on engine category. A second stage - IIIB - will be introduced from 2010 to engines in all vehicles except waterway vessels. All engines except those in rail vehicles and waterway vessels will be subject to even stricter "stage IV" emission limits from 2013.

The new legislation was proposed by the European Commission late last year to revise a 1997 directive. The

agreement means the revision should be concluded at first reading.

### **23. EU Floats Truck Anti-Emissions Kit Standards**

The European Commission has proposed minimum EU performance standards for emission-reducing equipment fitted to heavy-goods vehicles. The proposals also include a recast of EU truck and bus emission limits. These consolidate 1998 laws into a single text and introduce new decision-making procedures for future changes.

The performance requirements relate to exhaust recirculators, catalytic converters and particulate filters. All are technologies expected to be required to enable vehicles to meet Euro 3, 4 and 5 emission standards being progressively implemented from 2005 to 2009.

Equipment will have to pass durability tests, framed as minimum useful life expressed in either years or kilometers of service, whichever is sooner. Depending on vehicle category, emission-control units will have to last at least five to seven years or 100,000 to 500,000 kilometers.

Longer lifetime requirements could have been proposed, the Commission says, but might "compromise the feasibility" of the standards and inhibit the development of new aftertreatment technologies. There are separate requirements for on-board diagnostic systems (OBD) to ensure equipment is functioning properly during use.

Anti-pollution equipment performance standards were envisaged by the 1999 directive which set the Euro emission standards. Though this law also called for limits on new pollutants emerging because of the increased use of

alternative fuels, the Commission says that not enough vehicles are burning the fuels for it to make proposals in this area.

The changes will now be sent for approval through codecision by the European parliament and council of ministers. Future technical updates to the law should be made through "comitology" procedure, the Commission says. But any changes which "directly affect emissions" would remain as codecision matters.

### **24. EU Steps Up Hydrogen Fuel Cell Promotion**

The EU has taken first steps towards challenging US and Japanese pre-eminence in hydrogen fuel cell research and promotion by creating a "European partnership" as recommended by a conference in June. In a brief communication presented publicly on Tuesday, the European Commission proposes setting up a multi-stakeholder advisory council. It also identifies key elements of a future integrated European strategy on hydrogen to be implemented through the partnership.

### **25. Mass Production Of Bosch Diesel Particulate Filters To Start In 2005**

Robert Bosch GmbH has decided to develop particulate filters made of sintered metal for diesel cars and light commercial vehicles and to start series production in 2005. The company will invest around 200 million Euro in development and production equipment. After only three years following start of production Bosch expects annual output to exceed one million particulate filters.

By extending its range of products, the

world's largest manufacturer of diesel injection systems will be able to become a single source for essential emissions-related systems and components for diesel engines: high-pressure direct injection, particulate filters and exhaust gas sensors, as well as the related engine and exhaust gas management systems. For despite the progress achieved in reducing emissions by "internal" engine measures, the Euro 4 standards for larger cars weighing more than 1800 kg, which will come into force in 2005 in Western Europe, will not automatically be met without diesel particulate filters. In the US market with its especially low emission levels from 2007 on, particulate filters for diesel-powered cars will be essential. Bosch is therefore reckoning on a rapidly increasing demand for this technology for diesel cars - by 2007, the company expects sales of particulate filters to be as high as six million a year.

The diesel particulate filters used so far by automobile manufacturers are made of ceramic materials. The filters being developed by Bosch are based on sintered metals. The filter is designed in such a way that the particulates are deposited very evenly, which makes it much easier to regenerate the filter. The particular geometric form of the Bosch filter means that there is sufficient space for all the deposits likely to accrue during the normal service life of a vehicle, assuming standard rates of deposition. This means that the driver has no extra servicing or aftermarket parts replacements costs.

The development engineers at Bosch are working simultaneously on two different concepts: one for use with fuel additives and the other with catalytic coating. In both cases, the filter is regenerated by the hot exhaust gases which regularly burn off the deposited particulates.

At the end of 2002, Bosch acquired the basic technology for particulate filters from sintered metal, as well as the worldwide rights to further development, manufacturing and sales of such filters for diesel passenger cars and light commercial vehicles, from HJS Fahrzeugtechnik GmbH & Co. in Menden/Germany.

## **26. Bigger U.K. Tax Cuts on Biofuels Needed To Meet Expected Targets**

Bigger tax cuts on biofuels are needed in Britain to reduce carbon emissions and meet a rise in biofuels-use targets expected to be set by the European Union, Britain's agricultural minister told Parliament in Sept. 15 testimony.

Larry Whitty, parliamentary undersecretary of state for farming, food, and sustainable energy, told the House of Commons Environment, Food, and Rural Affairs Committee that the 20 pence (32 cents) per-liter tax cut in 2002 was not enough to meet biofuels-use targets expected from EU legislation as well as Britain's commitments under the Kyoto Protocol to reduce greenhouse gas emissions.

Whitty said about one-tenth of the arable farmland in England would have to be converted to grow crops to produce the biofuels needed to meet proposed EU biofuels-use targets. A proposal advanced by the European Commission in 2002 calls on EU member states to use biofuels to meet 2 percent of all energy needs by 2005 and 5.75 percent by 2010.

He said the tax cuts would help build up the domestic biofuels industry and encourage green fuels to help reduce carbon dioxide pollution.

The U.K. Treasury established the 20

pence (32 cents) per-liter tax cut in its 2001 budget, a rate that came into effect in July 2002. This was intended to support the production of biodiesel while encouraging reduced greenhouse gas emissions that biofuels offer. But Whitty said the current rate of duty was still too high to ensure that a viable U.K. biofuels industry develops.

Biodiesel is already widely used in Europe and the United States, and it has proved itself to be a "commercially viable, environmentally friendly" road transport fuel, Whitty said. But he cited limiting factors such as the high cost of production and the available land mass necessary to produce the crops in sufficient quantity to meet other than a small proportion of the demand for fuel.

Whitty said environmental obligations under the Kyoto Protocol were more pressing than energy security concerns, despite the worries about oil supplies being finite. The climate change pact requires Britain to cut carbon dioxide emissions 8 percent by 2012, based on 1990 levels.

## **27. Energy Agency Says Switzerland May Require Carbon Tax**

A program of voluntary measures aimed at reducing energy consumption is not likely to enable Switzerland meet its greenhouse gas reduction targets, making it more likely the nation will need to enact a carbon tax to meet its goals, the International Energy Agency said in a report released Sept. 9.

In the report titled *Energy Policies of IEA Countries--Switzerland 2003 Review*, the IEA noted that Switzerland's energy-related carbon dioxide (CO<sub>2</sub>) emissions rose 5.6 percent from 1990 to 2001, far from the government's goal of reducing carbon dioxide emissions 10 percent by 2012. Thus, even full application of the

SwissEnergy reform program and conscientious monitoring for its effects on energy consumption, public expenditure, private investments, employment impacts, and cost-effectiveness "may not suffice to achieve the country's ambitious climate change target," the IEA said.

The agency urged Switzerland to start drafting a carbon tax on energy use "promptly" to ensure implementation in the near term, stating that greenhouse gas emissions "may fall, if and when the CO<sub>2</sub> 'incentive' tax is imposed."

The SwissEnergy reform program was launched in January 2001 and extends through 2010. It aims to reduce emissions of CO<sub>2</sub> to 10 percent below 1990 levels through a 15-percent reduction in consumption of fuels for energy and an 8-percent reduction in motor fuel consumption. The Kyoto Protocol calls on Switzerland to reduce CO<sub>2</sub> emissions 8 percent by 2012, based on 1990 levels.

The government aims to achieve these targets through a series of voluntary commitments and voluntary agreements with industry, as well as through new regulations and standards for buildings, vehicles, and electrical appliances. A CO<sub>2</sub> incentive tax--to be applied as a levy on energy use--is planned if the voluntary measures fail to achieve adequate reductions.

Although the IEA said Switzerland is not likely to meet its CO<sub>2</sub> emission reduction goal under the current program, it still offered praise for the nation's recent energy reform plans, particularly those aimed at increasing efficiency in the energy sector as a means of fighting climate change.

In addition, the IEA noted that Swiss voters' rejection in May of a plan to immediately phase out nuclear power is

in keeping with the agency's recommendation "to keep the nuclear option open," and should help Switzerland meet its climate change objectives.

The IEA report includes several other recommendations for curbing climate change, including a call for the government to "further develop emissions trading and other flexible mechanisms, even if these are only supplementary alternatives to domestic reductions." The agency also suggested that Switzerland dedicate a portion of CO<sub>2</sub> tax revenues to purchasing greenhouse gas emission permits on the international market.

### **28. Switzerland Set To Introduce 10 PPM Sulphur Fuel**

The Swiss government has expressed confidence that sulphur-free motor fuels will rapidly take over the whole of its market once a new tax on petrol and diesel containing over ten parts per million (ppm) is introduced on 1 January. The country will join Germany and Sweden in the vanguard of a European phase-out of sulphur in motor fuels.

New technically advanced vehicles show a 15% improvement in fuel efficiency when using sulphur-free fuels, and for diesels a 95% cut in fine particle emissions, the Swiss environment agency said in a statement. Existing petrol vehicles will emit up to 20% less nitrogen oxides and hydrocarbons. Diesels will emit 7% less nitrogen oxides and particulates.

Across Europe the main driving force for cutting sulphur is an EU fuel quality directive requiring limited introduction of sulphur-free fuels by 2005 and requiring all fuels to be sulphur-free from 2009, though the exact date for diesel is still to

be confirmed.

### **29. Danes Under Pressure To Incentivize Low Sulphur Diesel**

Danish taxation minister Svend Erik Hovmand is to consider adjusting surcharges on diesel fuel in order to bring into line the prices of conventional diesel and the new low-sulphur alternative, Jyllands-Posten newspaper has reported. The move follows complaints by the chairman of the parliamentary environment committee that low-tax policies of Denmark's centre-right coalition government - amounting to a tax freeze - appeared to be hampering the introduction of low-sulphur diesel. He called for the overall price of diesel to be increased in order to allow for the extra cost of producing the more "eco-friendly" fuel as otherwise filling stations may be reluctant to stock the new fuel if it remained more expensive.

### **30. U.K. Urged to Introduce Congestion Fees Nationwide**

The Institute for Public Policy Research on Oct. 14 called for a nationwide congestion charging program to cut traffic and reduce pollution. Congestion charges, pioneered in London, should be introduced nationally on top of the current fuel duty, the report said.

The report, titled *Putting the Brakes on Climate Change*, said rising road transport emissions could endanger the prospects of meeting the government's climate change target to cut carbon dioxide emissions by 20 percent by 2010. Without the congestion charge, carbon dioxide emissions from road transport could increase by 15 percent, the report said, offsetting reductions in emissions from industry.

### **31. BP Says New Fuels Will Cut Emissions**

BP has launched a new set of motor fuels that it said would deliver better engine performance while also cutting down on emissions, enabling the oil major to step up its battle for market share of higher value petrol and diesel. BP said the fuels would reduce emissions of carbon monoxide, carbon dioxide, particulates and nitrogen oxides and at the same time improve fuel efficiency.

Declining petrol consumption, due to increased popularity of diesel and to ever-greater fuel efficiency generated by modern engines and fuels, has seen oil majors seek a bigger share of the higher-value end of the market as they wrestle with supermarket chains to retain their slice of the highly competitive fuel retail sector. Total UK petrol consumption fell in the first seven months of this year by five percent compared with the same period last year, to 10.89 million tons. But consumption of super unleaded petrol jumped by 48 percent to 474,000 tons, raising the share of the performance fuels to 4.4 percent from 2.8 percent.

The newly launched high performance ultra low sulphur petrol, with an octane level of 97, will fully replace BP's current super unleaded petrol, while BP Ultimate diesel is to be the UK's first performance diesel. The new fuels will be sold alongside the now standard ultra low sulphur petrol and ultra low sulphur diesel at BP forecourts. Over the same period, BP will phase out its offering of lead replacement petrol that now only accounts for a tiny fraction of UK fuel sales.

Like the current super-unleaded petrol, BP Ultimate petrol will be sold at a 4-5 pence per liter premium over standard

ULSP, while Ultimate diesel will be priced three pence per liter over standard ULSD.

### **32. Safety Fears Block Hydrogen Filling Station In London**

BP withdrew plans to open Britain's first public hydrogen filling station Sept. 27 after a London borough council rejected a planning application due to public fears of a gas explosion. Finding a new site could take months, a BP spokesman said in a statement.

The facility was due to be installed at an existing BP filling station in Havering to refuel three fuel cell buses that were to be delivered later this year. The site was going to be part of a two-year pilot program in nine European cities, backed by the European Union. The rejection represents a blow to the Clean Urban Transport for Europe (CUTE) project by raising doubts about if and when the three London fuel cell buses that were to be delivered later this year will enter service. A CUTE spokesman insisted that London still "wants to demonstrate that hydrogen is an efficient and environmentally friendly power source."

The CUTE project is funded by [Euros] 18.5 million (\$21.46 million) from the European Commission. Under the project, 27 fuel-cell powered buses, running on locally produced and refilled hydrogen, would be used to demonstrate the feasibility of zero-emission public transportation in Amsterdam; Barcelona; Hamburg, Germany; London; Luxembourg; Madrid; Stockholm; Stuttgart, Germany; and Porto, Portugal.

### **33. EC Releases Report On "External" Costs Of Transport**

The European Commission has carried



out new research aimed at quantifying the full socio-environmental cost of different methods of transport and electricity generation, the results of which could be used impose eco-taxes on the most damaging technologies. Socio-environmental, or 'external', costs from activities such as electricity generation are said to arise when: 'the social or economic activities of one group of persons have an impact on another group and when that impact is not fully accounted, or compensated for, by the first group.'

In the foreword to a report containing the findings of the ExternE study, Research Commissioner Philippe Busquin says that the study allows different fuels and technologies for the electricity and transport sectors to be compared: 'Policy actions could therefore be taken to tax the most damaging fuels and technologies or to encourage those with lower socio-environmental costs.' The types of impacts analyzed in the report include human health, damage to buildings, crops and ecosystems, global warming and noise pollution. The research employs a bottom-up methodology by measuring source emissions, analyzing changes in air, soil and water quality, before assessing physical impacts and expressing them in monetary terms. This is designed to take into account the highly site dependent nature of external costs.

When addressing the external cost of electricity generation, the report warns that variations due to location make it very difficult to simply compare the results of different technologies. However, the results show that generally, wind technologies are very environmentally friendly with regard to emissions of 'classical' pollutants such as sulphur dioxide, as well as greenhouse gases.

Coal technologies, meanwhile, are said to 'carry the burden of their very high CO<sub>2</sub> [carbon dioxide] emissions' with regard to greenhouse gas impacts. Furthermore, old coal-fired power plants are also high emitters of classical pollutants, and as such are described as the worst available technology overall. In monetary terms, the total cost of damage caused by coal fired electricity generation is equal to an extra 0.75 euro per kilowatt-hour, while the external cost of wind generated electricity is only 0.05 euro per kilowatt-hour. Whilst these figures could not be applied generically to all production sites, they can act as a useful tool to policy makers when drafting environmental legislation.

The external costs associated with different types of transport are presented in much the same way. The report concludes that as electric trains have no direct emissions, the main external cost associated with this form of transport is electricity generation, making it by far the most environmentally friendly option. The second best vehicle category is the coach as, thanks to its high capacity use, its final cost expressed in euro per 100 passenger-kilometers is relatively low. The external costs for all types of transport take into account not only tailpipe emissions and pollution caused during fuel production, but also the environmental impacts of vehicle production and infrastructure building. The worst performer in most instances was the diesel powered car. Diesel cars scored poorly due to high air pollution costs attached to the particulate matter (PM) emissions.

Diesel urban buses had lower cost per passenger per kilometer (pkm) than gasoline cars in all cities with the exception of London.

The highest air pollution costs were found in urban areas, where exposure to

air pollution is high due to population density and climate conditions. In cities with unfavorable climate conditions (Athens) the air pollution costs for diesel cars were almost €5 per 100 pkm. Under more favorable conditions of Amsterdam, the costs for diesel and gasoline cars were similar, both below €1 per 100 pkm. In extra-urban driving the costs were lower, from about €1.2 to less than €0.2 per 100 pkm, due to low population exposure to pollution. The cost sources in extra-urban driving were also shifted from vehicle use to vehicle/fuel production and infrastructure.

In goods transport, the highest external cost was calculated for heavy-goods vehicles (over €10 per TEU-km, where TEU stands for 20 feet equivalent unit), followed by container ship, barge, and goods train (about €2 per TEU-km). The pollution component, however, from heavy-goods vehicles was actually less than that from the container ship and barge (but higher than from the train). The highest external cost component in heavy-goods vehicles was accidents.

In Germany, the results show that for 1998, the total external costs associated with the transport sector as a whole amounted to 33 billion euro. This represents 1.7 per cent of German GDP for that year, and takes into account accidents, noise, CO<sub>2</sub> emissions and air pollution. Road transport alone accounted for over 30 billion euro of external costs.

## NORTH AMERICA

### 34. 2002 Worst Smog Season In US In Recent Years

New data show that 2002 was the worst smog season in recent years, according to a new Clear the Air report released by U.S. PIRG. *Danger In The Air: Unhealthy Levels Of Smog In 2002* found that smog monitors in 41 states and the District of Columbia recorded unhealthy levels of air pollution on nearly 9,000 occasions in 2002, nearly double the number of violations of the national health standard for smog in 2001.

*Danger In The Air: Unhealthy Levels Of Smog In 2002* is the fourth annual compilation of data from the nation's network of more than 1,000 ozone monitors. Key findings include the following:

- 2002 was the worst smog season for which we have data (1998-present; see bar graph below).
- Forty-one states and the District of Columbia exceeded the national health standard for ozone 8,818 times during the 2002 ozone season, a 90 percent increase over 2001.
- California, Texas, and Tennessee led the nation with the most "smog days"—days on which at least one ozone monitor in the state exceeds the national health standard.
- Ozone monitors in California, Texas, and along the Eastern seaboard recorded 55 exceedences falling within "very unhealthy" range in 2002.
- Every region of the country exceeded the national health standard for ozone more often in 2002 than 2001. The largest increases were in the Midwest, Southeast, and Central states, which exceeded the ozone standard 2.6, 2.8, and 5.6 times more frequently than the previous year, respectively.



The report also includes a limited amount of preliminary data for 2003, which has been a relatively mild and wet summer. Key findings for 21 states and the District of Columbia include the following:

- Twenty of these 21 states and the District of Columbia exceeded the national health standard for ozone 1,231 times through mid-August 2003 compared with a total of 3,961 times in those states during the entire 2002 ozone season, making for a less smoggy season overall.
- However, Colorado is having its worst smog season in recent years, and Florida and Louisiana already have exceeded the national health standard for ozone on more occasions than in all of 2002.

In the 11 states with the highest number of smog days in 2002, there are 143 "grandfathered" coal-fired power plants or 35 percent of all grandfathered facilities nationwide. In addition, these 11 states are home to 24 of the 51 power plants that have been sued by the EPA for violating the Clean Air Act's New Source Review program.

The report recommends that policymakers:

- Abandon regulatory efforts designed to weaken the application of the Clean Air Act's New Source Review program.
- Reject the Bush administration's "Clear Skies" plan, which would allow power

plants to emit more pollution over a longer period than simply enforcing current law.

- Adopt a comprehensive new program to reduce emissions of sulfur dioxide, nitrogen oxides, carbon dioxide, and mercury from power plants.

- Ensure timely designation of 8 hour ozone nonattainment areas.

- Oppose efforts to delay or weaken Clean Air Act

requirements that apply to ozone nonattainment areas.

- Adopt fuel and emission standards for "non-road" diesel construction, farming, and industrial equipment, as well as trains and ships, to reduce emissions from these vehicles and engines by at least 90 percent.

### **35. White House Proposes Reviews for Studies on New Regulations**

The White House budget office plans to require government agencies starting next year to employ panels of independent experts to review the quality of scientific analyses used in developing regulations. The Office of Management and Budget will propose a standardized process that requires all agencies each year to list planned scientific studies and describe how each will be reviewed. The regulatory arm of the budget office and the White House Office of Science and Technology Policy would then confer with the agencies on the "adequacy" of the plans, budget office officials said, with the most consequential studies, in terms of the potential impact on regulations, requiring the most comprehensive review.

If the scientific studies were already peer-reviewed by "respected" scientific journals, that process could satisfy the requirement. The process of peer

review, widely used by scientific journals to assess the quality of research, is employed in only a scattershot way by government agencies. The Environmental Protection Agency has used it extensively, but the Department of Agriculture and the Army Corps of Engineers are among many others that have not.

### **36. Bond Provision Jeopardizes California's Regulatory Power**

On September 4th, Sen. Christopher "Kit" Bond, chairman of the Senate Appropriations subcommittee, added a provision to EPA's FY 2004 spending bill that would block California's efforts to cut pollution emitted from small off-road engines. The provision was included after Briggs & Stratton Corp. started a lobbying campaign claiming that the proposed California standards for small spark-ignited engines used in lawnmowers and garden tractors would force the company to close its factories in Missouri and Kentucky and cut 1,800 jobs. The Clean Air Act (CAA) currently preempts California from regulating off-road engines under 175 hp used on construction and agricultural equipment but allows California to set emission standards for the remaining off-road engines, including engines used in lawn and garden equipment. The Bond provision would effectively prevent California and other states from setting emission standards for off-road engines under 175 hp, including mandatory retrofit programs, and from enforcing any existing non-federal requirements for this category of engines. California has proposed to strengthen its small off-road engine program by setting more stringent standards that likely will necessitate the installation of catalytic converters in small engines. The proposed standards would reduce emissions of hydrocarbons and volatile organic compounds (VOC), both

components of smog, by 50 percent, the equivalent of removing one million cars from the roads by 2010. Bond's amendment has raised considerable opposition from environmental groups and the state of California. An attempt to remove this amendment from the EPA appropriations bill failed in a subsequent vote of the full Senate Appropriations subcommittee.

Shortly after adopting revised regulations, the Chairman of the Air Board sent a letter to Senator Bond, highlighting the following points:

"On September 25, 2003, the Air Resources Board unanimously adopted a revised regulation that I am confident addresses all the issues raised in your letter on behalf of the small engine industry. In particular, the regulation we adopted:

1. Removes any question regarding safety;
2. Results in the use of commonly available technologies which will not require engine redesign;
3. Prevents the possible loss of jobs referred to in your letter; and
4. Achieves nearly the same emission reductions.

The revised regulation is based on proposals we had requested and received in the past two weeks from members of the small engine industry. ARB staff used these proposals to design and include in the regulation two alternative methods of compliance. One of the alternatives closely reflects the proposal of the Engine Manufacturers, Outdoor Power Equipment Institute, and Briggs and Stratton.

The most important feature of the regulatory alternatives we adopted is a less stringent exhaust emission standard (offset by better evaporative emission controls). The new standard

will reduce the heat generated by the engine's exhaust. Honda testified that with the revised exhaust emission standards, safety is no longer a concern. A representative of the California Fire Chiefs Association testified the revised regulation appeared to address their concerns. Similarly, a representative of the California Fire Marshall's office told our staff he believes ARB adequately handled the safety issues with the revised regulation. I am confident that the testimony of these experts assures us there will be no new safety issues resulting from implementing this regulation.

No testimony was presented to the Board regarding job losses and plant closures. However, I am aware that Briggs and Stratton has said the company will have to shut down some or all of its plants because major engine redesign would be required to meet California's proposal to reduce small engine emissions. I believe that statement referred to the original proposed regulation and no longer applies. Testimony at our hearing yesterday confirmed that relatively simple changes to engine components would allow these small engines to meet the revised emission standards we adopted. Better hoses and fuel tanks would prevent fuel vapors from leaking into the atmosphere where they form smog. A simple catalyst, similar to the ones used on over 15 million small motorcycles and mopeds worldwide, would reduce exhaust emissions without creating a heat hazard to the user. The testimony was clear that these simple changes were effective and no engine redesign that might cause job losses would be needed. Honda testified on the record that the regulations would not reduce its employment or production.

I believe the action taken by the ARB is a win-win situation. We achieved our emission reduction goal. The adopted

regulation, based on an industry proposal, will reduce costs, simplify compliance and avoid job losses. Fire experts stated there is no safety problem.

As you stated in your letter to me, addressing these issues should obviate the need for Congressional action. We have successfully addressed all the issues you raised. Accordingly, I now request that you remove the expansive state preemption language from the HUD/VA budget bill, so in cooperation with small engine manufacturers, we can get on with the job of protecting the health of 35 million Californians."

No response has yet been received from Senator Bond.

### **37. EPA Study Recommends Tightening Airborne PM Standards**

New federal health standards that limit the amount of soot in the air do not adequately protect the elderly and people with respiratory problems and should be tightened, according to a draft government report. The findings could become the basis for additional pollution-control requirements to reduce the amount of soot emitted by diesel-burning trucks, cars, factories, and power plants.

The new findings are in a draft paper by Environmental Protection Agency staff and are being circulated for review by outside scientists.

The 1997 standards have not yet had significant impact. They were delayed by several years of litigation as industry opponents unsuccessfully challenged the rules all the way to the Supreme Court, which eventually upheld them. The EPA soon expects to determine what areas of the country will have to impose additional pollution-control

measures because their air is so dirty it does not meet the standard.

Even as the rules are being put in place, the EPA staff review of the latest scientific studies on the effects of soot on health has concluded that the standards may not produce the intended health benefits. The 400-page draft paper says that since 1997, some scientific studies "have confirmed and strengthened" the association between exposure to microscopic soot and premature deaths, cardiovascular problems, and respiratory illnesses.

Furthermore, the paper says, in many cases these studies showed adverse health effects when airborne soot concentrations were well below the maximum allowed by the 1997 standard, particularly during days when the air is especially dirty.

As a result, the staff analysis recommends the allowable concentrations be reduced further, possibly as much as 50 percent for the 24-hour standard and 20 percent for the annual average standard. The annual average under the 1997 rule of no more than 15 micrograms of soot per cubic meter of air might have to be cut to 12 micrograms to achieve adequate health benefits, and the 24-hour standard of 65 micrograms per cubic meter to between 30 and 50 micrograms, according to the staff paper.

Health advocates cited the EPA staff finding as a major development, supporting their contention that tougher air quality standards are needed for microscopic soot because it can become easily lodged deep inside lung tissue.

In 1997, the Clinton administration issued the government's first standards for extremely fine particle pollutants — those shorter than 2.5 microns, or one-

millionth of a meter. The standards were prompted by worries about adverse health effects from these pollutants on the elderly, those with asthma and other respiratory illnesses, and other people. The Bush administration endorsed the new standards and made no effort to scale them back once the courts rejected the legal challenges brought by industry. Last May, as part of a settlement in a lawsuit by the American Lung Association, the EPA agreed to finish the review on soot standards and issue new regulations if necessary by the end of 2005.

### **38. Bush Defends Change In Environmental Rules**

President Bush Monday defended a change in clean air rules — which environmentalists believe will cause more pollution — as necessary to allow power plants to upgrade their equipment and keep the U.S. economy going.

Wearing a hard hat and safety glasses, Bush toured a coal-burning power plant, the Detroit Edison Monroe facility, then gave a speech to employees and local political figures saying his environmental policies are working. Bush's Environmental Protection Agency has undertaken a major rewrite of so-called New Source Review rules that govern the steps utilities, petroleum refiners, and thousands of other facilities must take when making major upgrades to their plants. It allows industry to make major plant upgrades without installing pollution-reduction equipment and lets dirtier, older plants to operate well beyond their intended life span.

Bush said the policy needed to be changed to allow plants to upgrade quickly to improve their reliability rather than go through a complicated government review process. "The rules created too many hurdles, and that hurts

the working people," Bush said. "It makes sense to change these regulations. It makes sense for the workplace environment, it makes sense for the protection of our air. Not only do I believe that, but union leaders believe that, manufacturers believe that, the utilities believe that, a bipartisan coalition of Congress believes it."

Environmental groups said Bush's policy will increase pollution, particularly at the Monroe plant, one of the largest coal-fired plants in the country.

On the following day, Bush focused on his proposed "Clear Skies" legislation of new standards for industrial air pollution. The plan would limit emissions of sulfur dioxides, nitrogen oxide and mercury and assign companies emissions permits, which could be bought and sold. Environmentalists say the proposal fails to regulate emissions of carbon dioxide, believed to contribute to global warming, and that its standards are weaker than existing law.

### **39. Governors, Canadian Premiers Seek NSR Reconsideration**

The Conference of New England Governors and Eastern Canadian Premiers approved without dissent Sept. 9 a resolution expressing their disapproval of recent changes to the U.S. federal new source review rules and calling on the U.S. Environmental Protection Agency to reconsider the revisions.

"We don't support these changes," said Connecticut Gov. John Rowland (R), who explained that the governors plan to lobby the Bush administration to reverse its position. In addition, the governors of Rhode Island and Vermont said they had directed their state environmental officials to consider joining Connecticut, Massachusetts,

Maine, and several other states in a plan to sue EPA once the final rules are published in the *Federal Register*.

In supporting the resolution, Quebec Premier Jean Charest stressed the importance of urging EPA to uphold the clean air agreement between the United States and Canada.

In its resolution, the conference argued that the changes "abandon the fundamental principle that new sources of air pollution must be required to minimize their emissions using the best control technologies available, and that existing sources that undergo significant expansion or upgrade should be held to the same standards."

The governors and premiers worked for several hours before their plenary session on the language of the resolution, which notes that while the states and provinces understand that reform of the NSR program is "warranted," they believe that such reform should not come at the expense of "environmental quality or economic equity in their region."

The conference is made up of the governors of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont, and the premiers of Prince Edward Island, Nova Scotia, New Brunswick, Quebec, Newfoundland, and Labrador.

#### **A. U.S.-Canadian Clean Air Agreement**

In addition to calling on EPA to reconsider its revisions and recommit to protecting the health of all citizens, the resolution calls on the agency to uphold the "spirit and the letter" of the 1990 Clean Air Agreement between Canada and the United States.

The governors noted that New England

and eastern Canada have been working regionally to reduce emissions. In August 2001, the conference adopted a Climate Change Action Plan to address regional greenhouse gases and established a steering committee to coordinate implementation. That plan calls for stabilization of 1990 levels of carbon dioxide by 2010 and a 10 percent reduction by 2020.

In the second year of implementation of that plan, work has focused on government lead-by-example programs, in addition to the development of a regional greenhouse gas emission inventory and registry to help gauge progress. The New England Governors' Conference will begin working with the Northeast States for Coordinated Air Use Management to coordinate the inventory effort this fall.

Several states have also adopted their own programs designed to reduce emissions.

### **B. Retrofitting Encouraged**

In talking to reporters following the conference, Rhode Island Gov. Donald Carcieri (R) said lawmakers should consider ways to assist companies in retrofitting their facilities. He noted that the financing of such retrofits must be looked at in the context of the whole energy policy where huge amounts of capital will be required to meet nationwide demand.

While Carcieri did not offer a specific plan, he did say that tax policies, interest rate subsidies or some form of government guarantees might assist in helping industry meet the demand for environmental upgrades.

"We need to find some better tools to help companies invest in new equipment," he said.

### **40. Cheney Wants Supreme Court Review on Energy Case**

The Bush administration signaled its intent to appeal to the U.S. Supreme Court a ruling requiring Vice President Dick Cheney to divulge information about his energy task force. In papers filed with the U.S. Court of Appeals in the District of Columbia, Cheney's Justice Department lawyers said they intend to file a petition with the Supreme Court no later than Sept. 30. Last week, the appeals court refused to reconsider its previous ruling against Cheney, leaving him with the option of appealing to the Supreme Court or complying with a lower court order to release information about his task force's contacts with the energy industry while drafting policy in 2001.

Arguing that the case raised important constitutional questions, Cheney's lawyers asked the appeals court to "stay" its mandate so that Cheney would have the opportunity to present his case to the Supreme Court. "Judicial power cannot extend to compelling a vice president to disclose to private persons the details of the process by which a president obtains information and advice from the vice president ..." the lawyers said.

One of the groups suing for the information accused the administration of delaying tactics. Judicial Watch and the Sierra Club contend that Cheney consulted with industry executives like disgraced former Enron Corp. chief Kenneth Lay, while ignoring environmentalists as he drafted energy policy.

Cheney has acknowledged meeting Lay, but his lawyers say the task force was comprised of government officials, not corporate chieftains. The Bush administration has released thousands



of pages of information from agencies involved in drafting the energy policy, but none from the White House.

#### **41. Justice Department Files Brief Supporting Industry Against SCAQMD**

The Department of Justice has filed a friend-of-the-court brief supporting the Engine Manufacturers Association (EMA) and the Western States Petroleum Association (WSPA) suit against the South Coast Air Quality Management District's (SCAQMD) fleet rules that require the purchase of alternative-fueled vehicles. These SCAQMD fleet rules apply to heavy-duty diesel vehicles used in transit buses and garbage trucks, as well as some light-duty fleet vehicles. In their brief, the Department of Justice argued that the SCAQMD does not have authority under the Clean Air Act to set mobile source emissions standards, and this authority must be granted by the EPA. SCAQMD has argued that these fleet purchase requirements are needed to meet federal ozone standards and, as purchase requirements, the rules do not violate the Clean Air Act. The suit was first filed in 2001 and has been rejected twice by a U.S. District Court in California and the U.S. Court of Appeals for the Ninth District. The case is now waiting a judgment by the U.S. Supreme Court. Oral arguments are expected to occur for this case at the Supreme Court before the end of this year. Several other industry groups including the Alliance of Automobile Manufacturers, the American Petroleum Institute, and the American Trucking Association have also filed briefs in support of the EMA/WSPA suit against the SCAQMD.

#### **42. EPA Denies Petition to Regulate Greenhouse Gases from Motor Vehicles**

The EPA has issued a notice denying a petition to regulate greenhouse gases from motor vehicles filed by the International Center for Technology Assessment and a number of environmental organizations. In the notice, EPA stated two reasons for denying this petition: 1) Congress has not granted EPA authority to regulate greenhouse gases for climate change purposes under the Clean Air Act, and 2) EPA has determined that setting greenhouse gas emission standards for motor vehicles is not appropriate at this time. In the EPA press release, EPA Assistant Administrator Jeff Holmstead cited a number of voluntary programs that address climate change, including Climate Leaders, Energy Star, Green Power, SmartWay, and Best Workplaces for Commuters.

#### **43. Honda to Begin Mass Marketing of the CNG-Fueled Civic GX**

Honda has announced plans to widely market its CNG-fueled Civic GX model to the general public starting in 2004. To facilitate general public interest and acceptance of this CNG-fueled vehicle, Honda will sell an appliance that will allow Civic GX owners to fill the car's tank from a standard residential gas line. This appliance, developed by a Canadian company, Fuelmaker, will allow an owner of the Civic GX to half-fill the vehicle's tanks with natural gas in 8 hours, providing approximately 100 miles of range. The refueling appliance can be easily mounted on a garage wall. Honda began sale of the Civic GX in 1998 with sales volumes of 500 to 1,000 vehicles annually. To date, sales of these vehicles have been almost exclusively to commercial fleets. The

price tag for the Honda Civic GX is \$20,000 and the refueling appliance will cost \$2000. The Civic GX is currently certified as an SULEV (Super Ultra-low Emission Vehicle) under California's LEV II light-duty vehicle program.

#### **44. EPA Proposes Tighter Aircraft Standards**

New commercial aircraft engines used in the United States must comply by 2004 with international standards for emissions of nitrogen oxides, under a proposal announced Sept. 17 by the U.S. Environmental Protection Agency. The standards would apply to new U.S. aircraft engines used on commercial aircraft, including small regional jets, single-aisle aircraft, twin-aisle aircraft, as well as 747s and other larger aircraft, EPA said in a statement announcing the proposal.

EPA indicated its intent to amend the existing U.S. regulations governing the exhaust emissions from new aircraft gas turbine engines in May 2002, when the agency published its semiannual regulatory agenda. At the time, EPA said it considered the new standards, which will go into effect in January 2004, to be "nonsignificant" for these engines.

Industry sectors affected by this rulemaking include engine, turbine, and power transmission equipment manufacturing; aerospace product and parts manufacturing; aircraft engine and engine parts manufacturing; and other aircraft part and auxiliary equipment manufacturing. General aviation and military aircraft using commercial aircraft engines are also subject to this proposal and will contribute to NOx emission reductions.

EPA said the proposal to amend existing regulations will codify into U.S. law the voluntary NOx emission

standard of the U.N. International Civil Aviation Organization (ICAO). That standard was amended in 1998 at the fourth meeting of the ICAO/Committee on Aviation Environmental Protection (CAEP).

According to the ICAO Secretariat, the permissible level for engine emissions of nitrogen oxides agreed to at the meeting was a compromise reached among members. The secretariat said the new proposal technically "is very similar to, albeit slightly less stringent than, the one made" at the third meeting of the CAEP previously.

According to figures in the ICAO journal, "the newest proposal represents an increase in stringency of 16.25 per cent, compared with the existing limit" at a midrange engine pressure ratio of 30. "At a high pressure ratio of 50, the increase in stringency drops to 4.46 per cent, compared with 12.5 per cent" in the proposal made at the third meeting of the CAEP.

The rule is necessary to bring U.S. emission standards into alignment with these internationally adopted standards "so that the public can be assured that they are receiving the air quality benefits of the international standards," EPA said.

"Further, this amendment will establish consistency between U.S. and international requirements and test procedures," the agency said.

#### **45. Bush Administration Appeals Restrictions On Mexican Trucks**

The Bush administration has asked for the Supreme Court's help in a fight over allowing Mexican trucks and buses on U.S. roadways for the first time in two decades. The administration wants to drop a court-ordered environmental

study that has delayed the border opening.

President George W. Bush ordered U.S. highways open to Mexican trucks last fall, despite long-standing opposition from U.S. labor, consumer, and environmental organizations. The consumer group Public Citizen, the Teamsters, and others sued on safety and environmental grounds, and a federal appeals court ruled earlier this year that the government must perform the lengthy study. The Bush administration has said it will comply with that order but also filed an appeal with the Supreme Court.

The San Francisco-based 9th Circuit handles appeals from the Mexican border states of California and Arizona as well as other western states.

The U.S. Transportation Department said Aug. 26 that it will conduct a detailed evaluation of the potential environmental effects associated with opening U.S. roads to Mexican trucking, as ordered. DOT's Federal Motor Carrier Safety Administration (FMCSA) said the department has awarded a \$1.8 million contract to ICF Consulting of Fairfax, Va., "to prepare a fully developed environmental impact statement that analyzes the short- and long-term environmental impacts of Mexican trucks operating beyond the border zones." The environmental impact statement should take between 12 months and 18 months to prepare, the agency said.

In preparing to open U.S. roads to Mexican trucks, DOT had conducted a much less detailed environmental assessment and issued a "finding of no significant impact" on the environment. DOT issued rules in March 2002 to allow trucks from Mexico to operate beyond the narrow border zones, and in November 2002 the department said

that it would approve the applications from Mexican trucking companies seeking to operate. The rules were challenged by environmental, consumer, and labor groups.

The Ninth Circuit said DOT's regulations permitting Mexican trucks to operate throughout the United States constituted a "major action" under the National Environmental Policy Act and therefore merited a full environmental impact statement. The court in April rejected a DOT request to rehear the case by the full panel of judges.

The debate over allowing Mexican trucks to have access to U.S. roads has been brewing ever since NAFTA was signed in 1992. Under the treaty, the countries were supposed to start opening their borders to cross-border trucking by 1995, with full access granted by 2000. But the Clinton administration repeatedly refused to implement this portion of the treaty, despite repeated protests by the Mexican government. A NAFTA arbitration panel in February 2001 ruled that the United States could impose some limitations on certain Mexican trucks or companies for safety reasons, but a blanket ban on Mexican trucks violated the terms of NAFTA.

#### **46. Mexican Environment Minister, Others Dismissed**

Mexican President Vicente Fox Sept. 2 dismissed Environment Minister Victor Lichtinger and replaced him with Alberto Cárdenas. In a Cabinet shakeup, Fox also sacked Energy Minister Ernesto Martens; Raúl Arriaga, subsecretary of management for environmental protection, one of the Environment Ministry's (SEMARNAT's) three subministries; and Ignacio Campillo, attorney general for the environment and head of the Federal Bureau for

Environmental Protection (PROFEPA). Arriaga is reportedly under investigation for acts of corruption.

As for naming Cárdenas to lead SEMARNAT, Fox Sept. 2 said one of the objectives guiding this "new stage" of the ministry will be to speed up measures needed to reverse environmental deterioration, including that of soil and lands. "The priority is to put a halt to water and air pollution," Fox said. However, in a Sept. 2 statement, Fox said, "Relaunching a sustained economic growth requires a solid energy infrastructure, that is financially healthy and competitive."

At a Sept. 3 breakfast in Los Pinos, where Cardenas made his debut as environment minister with 40 major investors from the tourism sector, Fox promised that the revamped ministry would address business concerns about SEMARNAT red tape holding back investment projects.

Fox replaced Arriaga, who was head of Mexico's Subministry for Management for Environmental Protection, with Ricardo Juárez, who was director of SEMARNAT's Department of Environmental Impact and Risk.

#### **47. Senate Confirms Leavitt To Head EPA**

Utah Gov. Mike Leavitt, whose state environmental record has received both praise and scorn, has won U.S. Senate confirmation to head the U.S. Environmental Protection Agency. On a bipartisan vote of 88-8, the Senate approved President Bush's nomination of Leavitt to succeed former New Jersey Gov. Christine Todd Whitman as EPA administrator. She resigned in May after often being at odds with conservative administration members.

Democrats used the Leavitt nomination to pound Bush's environmental record, which they call the worst of any president in history. They charge it is laden with rollbacks in federal clean air, water and toxic waste protections.

Bush, in a brief statement after Tuesday's vote, hailed Leavitt as "an exceptional leader," and said, "I know he will work closely with me" to protect the environment "while our economy grows."

Sen. James Jeffords, a Vermont independent, backed Leavitt's confirmation this week after having earlier joined Democrats in temporarily blocking the nominee in committee.

Leavitt will take the helm of an agency that employs around 18,000 people and was set up to enforce environmental laws and research environmental problems affecting air, water and land.

Leavitt's environmental record as Utah's governor has received mixed reviews. Many have criticized what they denounce as weak enforcement of the law and secret deals that favored industry. Others said he managed to broker sweeping accords that improved the environment.

At his Senate confirmation hearing last month, Leavitt said he views himself as a "problem solver" who listens to all sides and seeks an equitable balance.

A half dozen Senate Democrats, including three running for president - Senators Joseph Lieberman of Connecticut, John Kerry of Massachusetts and John Edwards of North Carolina - had placed "holds" on the Leavitt nomination.

They had demanded more information from Leavitt or the administration about various environmental matters before a

vote could take place. Normally such holds are honored until the concerns of senators who place them are resolved. Yet Senate Democratic leaders conceded on Monday that they did not have enough support to use Senate procedures to block the nominee, and they agreed to Tuesday's confirmation vote.

Thirty-six Democrats joined independent Jeffords and all 51 Republicans in voting for Leavitt. Democrats cast the eight 'no' votes.

#### **48. Fuel Suppliers Prepared to Meet Future Low-Sulfur Diesel Requirements**

Refiners are on target to supply significantly cleaner highway diesel fuel in the next four to six years, according to EPA's analysis of industry reports.

"EPA's clean diesel standards are an important reason Americans can expect air quality to continue to improve in the years ahead," said EPA Assistant Administrator for Air and Radiation Jeff Holmstead. "We're pleased with the preliminary indications from fuel suppliers, because the new clean diesel fuel – in combination with EPA's Acid Rain Program, cleaner vehicles and more stringent standards for ground-level ozone and particle pollution – will help us meet the goals of the Clean Air Act and further protect public health and the environment."

Although the industry information compiled, analyzed and summarized by EPA is preliminary, the results provide the clearest snapshot currently available of the highway diesel fuel market. Based on current projections for 2006, 96 percent of the nearly 3 million barrels of highway diesel produced per day will meet the 15 parts per million (ppm) standard.

EPA's analysis of information from 126 refiners shows that fuel suppliers are positioned to comply with the 15 ppm sulfur standard on time; highway diesel fuel production will be sufficient to meet demand; and 15 ppm sulfur diesel fuel will be widely available nationwide.

Reducing the sulfur content in diesel will enable advanced emission control technology in diesel engines and substantially contribute to air quality improvement, help states meet Clean Air Act goals and further protect public health and the environment.

Under the January 2001 "Clean Diesel Rule," any refiner or importer planning to produce or import highway diesel fuel in 2006-10 is required to submit a "pre-compliance report" to EPA. The reports are due annually from June 2003 through 2005 and must contain information that includes the amount of low-sulfur fuel that will be produced or imported; the number of credits that will be generated or used; and a projected compliance time line.

#### **49. CARB Releases Children's School Bus Exposure Study**

The Children's School Bus Exposure Study was conducted to characterize the range of children's exposures to diesel vehicle-related pollutants and other vehicle pollutants during their commutes to school by school buses. Researchers at the University of California's Riverside and Los Angeles campuses, measured pollutant concentrations inside five conventional diesel school buses while driving actual school bus routes in Los Angeles. For comparison, a diesel bus equipped with a particulate trap and a bus powered by natural gas were also included.

Buses were outfitted with dual sets of

real-time instruments, which allowed front versus back and inside versus outside comparisons. The researchers measured multiple diesel vehicle-related pollutants, including black carbon and particle-bound PAHs, as well as many other exhaust pollutants. A tracer gas was used to determine the bus's own contributions to on-board concentrations. The study measured exposures inside the buses and did not include tail-pipe emissions tests.

Measurements indicated that for some buses, significantly higher exposures of vehicle-related pollutants occurred during the bus commutes than roadway pollutant concentrations alone would indicate. The high commute concentrations were a function of several influences:

- the high concentrations of pollutants already present on roadways, especially if traffic was heavy;
- the direct influence of other vehicles being followed; and
- the contribution of the bus's own emissions. The extent of a bus's own contribution to these high concentrations appeared to be highest when windows were closed for the older diesel buses, but bus-to-bus variability was high.

**Recommendations from this report include:**

- Reducing school bus-related exposures by assigning the newest and cleanest buses to the longest routes.
- Avoiding caravanning of buses through staggered departure times.
- Replacing conventional (uncontrolled) diesel school buses with natural gas-powered

or particulate trap-equipped buses.

- Maintaining diesel school buses to reduce visible exhaust.

**50. Seattle Area To Get 235 Hybrid Buses**

Seattle's regional transit agencies will buy 235 buses powered by hybrid diesel-electric engines, reducing air pollution while slashing fuel and maintenance costs, officials have announced. The 60-foot (18-meter) buses, built by New Flyer Industries in Winnipeg, Manitoba, and powered by General Motors power trains, will burn 20-30 percent less fuel than King County Metro's current buses and could eventually cut fleet fuel consumption by 750,000 gallons (3 million liters) a year.

The buses will be delivered in 2004 and 2005 at a cost of \$645,000 each, \$200,000 more than standard diesel buses, but are expected to save enough money to pay for the difference after about seven years of their estimated 12-year service life.

GM officials, billing hybrid technology as a bridge to ultra-efficient, zero-emission hydrogen fuel cell power systems about a decade from now, have pilot bus programs in nine other U.S. sites: Austin, Texas; Hartford, Connecticut; Houston; Minneapolis; Newark, New Jersey; Orange County, California; Philadelphia; Portland, Oregon; and Salt Lake City.

**51. 2002 Air Quality Trends Report Highlights**

The U.S. Environmental Protection Agency (EPA) released its annual air trends report based on air quality measured from over 3,000 locations (over 5,200 monitors) across the nation

(operated primarily by state, local, and tribal agencies) and also released new acid rain data, both of which show steady and significant air quality improvement. This environmental progress comes even as the country has experienced a 164 percent increase in gross domestic product, a 42 percent increase in energy consumption and a 155 percent increase in vehicle miles traveled. The report, "Latest Findings on National Air Quality: 2002 Status and Trends", shows that since 1970 emissions of the six principle air pollutants have been cut 48 percent. Acid rain data released at the same time demonstrates the cap and trade program's success in reducing sulfur dioxide (SO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>) emissions from power plants.

According to the data, SO<sub>2</sub> emissions from power plants were 10.2 million tons in 2002, nine percent lower than in 2000 and 41 percent lower than 1980. NO<sub>x</sub> emissions from power plants also continued a downward trend, measuring 4.5 million tons in 2002, a 13 percent reduction from 2000 and a 33 percent decline from 1990 emissions levels.

Highlights of the report include the following:

- National air quality levels have shown improvements over the past 20 years for all six principal pollutants.
- Since 1970, aggregate emissions of the six principal pollutants have been cut 48 percent. During that same time, U.S. gross domestic product increased 164 percent, energy consumption increased 42 percent, and vehicle miles traveled increased 155 percent.
- Despite this progress, about 160 million tons of pollution are emitted into the air each year in the United States. Approximately 146 million people live in counties where monitored air in 2002 was unhealthy at times because of high levels of at least one of the six principal air pollutants.
- The vast majority of areas that experienced unhealthy air did so because of one or both of two pollutants -- ozone and particulate matter (PM). Important efforts to control these pollutants include implementing more protective National Ambient Air Quality Standards (NAAQS) for ozone and PM and issuing rules to reduce emissions from onroad transportation and stationary combustion sources. These rules will bring reductions in emissions over the next several years.
- Additional reductions will be needed to provide clean air in the future. In May 2003, EPA proposed nonroad diesel engine regulations that would help improve PM and ozone air quality. By 2030, this program would reduce annual emissions of PM by 95 percent, NO<sub>x</sub> by 90 percent, and sulfur levels by 99 percent from these engines.
- Of the six tracked pollutants, progress has been slowest for ground-level ozone. Over the past 20 years, almost all geographic areas experienced some progress in lowering ozone concentrations. The Northeast and Pacific Southwest exhibited the greatest improvement. In particular, substantial progress seen in Los Angeles has continued through 2002. However, the national average ozone (8-hour) levels have been fairly constant in other metropolitan areas. An analysis

- to adjust 8-hour ozone levels in metropolitan areas to account for the influence of meteorological conditions shows the 10-year trend to be relatively unchanged. At the same time, for many national parks, the 8-hour ozone levels have increased somewhat.
- Ground-level ozone is not emitted directly into the air, but is formed in the atmosphere by the reaction of volatile organic compounds (VOCs) and nitrogen oxides (NOx) in the presence of heat and sunlight. Emissions of VOCs have decreased about 40 percent over the past 20 years. However, regional-scale NOx reductions over the same period are only 15 percent. More NOx reductions will be necessary before more substantial ozone air quality improvements are realized.
  - The improvement in overall emissions since 1970 included in this year's findings reflect more accurate estimates of VOC, NOx, PM, and carbon monoxide (CO) releases from highway vehicles and nonroad engines. Previous years' findings underreported emissions for cars and trucks in the 1970s and 1980s. This year's findings incorporate improvements in EPA's mobile source emission models, which are based on actual emissions measurements from thousands of motor vehicles and have been peer-reviewed. The new mobile model better represents average U.S. driving habits, such as more rapid accelerations and faster highway speeds.
  - Sulfates formed primarily from SO2 emissions from coal-fired power plants are a major component of fine particles (known as PM2.5) in the eastern United States. SO2 emissions decreased approximately 33 percent from 1983 to 2002. Nationally, average SO2 ambient concentrations have been cut approximately 54 percent over the same period. Reductions in SO2 concentrations and emissions since 1990 are primarily due to controls implemented under EPA's Acid Rain Program.
  - Sulfate reductions since 1999 are partly responsible for some improvement in ambient fine particle concentrations, particularly in the southeastern United States.
  - In many locations, EPA now has four years of air quality monitoring data for fine particles (known as PM2.5). Areas across the Southeast, Mid-Atlantic, Midwest regions, and California have air quality that is unhealthy due to particle pollution. Region-wide emissions from power plants and motor vehicles are among the largest contributors to the high PM2.5 concentrations.
- Since 1990, many actions have been taken that will significantly reduce air toxics across the country. Specifically, regulations for facilities such as chemical plants, dry cleaners, coke ovens, and incinerators will reduce emissions of toxic air pollution by 1.5 million tons from 1990 levels. In addition, recent actions to address emissions of toxic air pollutants from motor vehicles as well as stringent standards for heavy-duty trucks, buses, and diesel fuel will eliminate 95 percent of emissions of diesel particulate matter.
- Measurements have shown that



atmospheric concentrations of methyl chloroform are falling, indicating that emissions have been greatly reduced. Concentrations of other ozone-depleting substances in the upper layers of the atmosphere, like chlorofluorocarbons (CFCs), are also beginning to decrease.

The annual Trends Report summarizes air quality information and facility emissions data for the six principal, or criteria, air pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), particulate matter (PM) and sulfur dioxide (SO<sub>2</sub>). The report, based on monitoring at thousands of locations across the country, focuses primarily on national trends for the 20-year period between 1983-2002 and the 10-year period between 1993-2002.

The Acid Rain Program is well on the way to achieving its goal of a 50 percent reduction from 1980 SO<sub>2</sub> emissions. Trading under the Acid Rain Program has created financial incentives for electricity generators to look for new and low-cost ways to reduce emissions, and improve the effectiveness of pollution control equipment, at costs much lower than predicted. The level of compliance under the Acid Rain Program continues to be uncommonly high, measuring over 99 percent.

The Clean Air Act provides the principal framework for national, state, tribal, and local efforts to protect air quality. Improvements in air quality are the result of effective implementation of clean air laws and regulations, as well as efficient industrial technologies. Under the Clean Air Act, EPA has a number of responsibilities, including:

- Conducting periodic reviews of the NAAQS for the six principal pollutants that are considered harmful to public health and the environment.

- Ensuring that these air quality standards are met (in cooperation with the state, tribal, and local governments) through national standards and strategies to control air pollutant emissions from vehicles, factories, and other sources.
- Reducing emissions of SO<sub>2</sub> and NO<sub>x</sub> that cause acid rain.
- Reducing air pollutants such as PM, SO<sub>x</sub>, and NO<sub>x</sub>, which can reduce visibility across large regional areas, including many of the nation's most treasured parks and wilderness areas.
- Ensuring that sources of toxic air pollutants that may cause cancer and other adverse human health and environmental effects are well controlled and that the risks to public health and the environment are substantially reduced.
- Limiting the use of chemicals that damage the stratospheric ozone layer in order to prevent increased levels of harmful ultraviolet radiation.

## 52. Canada Finalizes Gasoline Regulations

Finalized amendments to regulations governing sulfur in Canadian gasoline provide a new method to measure sulfur content, with only small technical changes from the draft regulations originally published in February 2003, Environment Canada said Oct. 8. The original regulations set a limit for sulfur levels of an average of 150 parts per million, with the limit set to decrease to 30 ppm starting in 2005. The amendments did not change these limits.

Environment Canada also published in

final form Oct. 7 parallel amendments to the Benzene in Gasoline Regulations, which limit benzene levels to 1 percent by volume to ensure that they remain consistent with the Sulfur in Gasoline Regulations. The amendments to the Benzene in Gasoline Regulations also make minor changes to update the regulations and to clarify some provisions.

### **53. Mexico, EPA Team Up to Cut Air Pollution in Mexico City, Border Zone**

On October 8<sup>h</sup>, Mexico's Environment Ministry announced a new bilateral pilot program designed in coordination with the U.S. Environmental Protection Agency to improve air quality in Mexico City. In a press statement, the Environment Ministry said the project will apply "innovative technologies to reduce diesel particulate emissions by up to 80 percent." With an initial outlay of \$350,000, the pilot project seeks to demonstrate the viability of new pollution-reducing technologies for use in Mexico City, where diesel trucks and buses generate 48 percent of industrial pollution, the statement said.

The Environment Ministry said it is requesting proposals from manufacturers, researchers, and nongovernmental organizations for developing retrofitting projects "in the short term" that would reduce diesel emissions of hydrocarbons and suspended particulate matter in Mexico City. The call for proposals began immediately, and the pilot project is expected to run through 2004.

EPA's participation in the project is based on the Clean Fuels and Vehicles Initiative from the World Summit on Sustainable Development in Johannesburg, which has the objective of bringing about clean fuels and clean

transportation around the world.

A second phase of the pilot project will be applied along the 2,000-mile U.S.-Mexico border. Once the pilot project is completed, "the results will be used to calculate the potential for reducing the emissions of damaging contaminants, if the applied technologies are installed in other diesel vehicles," the statement said.

Claudia Sheinbaum Pardo, Mexico City's environment secretary, said during a news conference that starting in the 1990s, there had been a "considerable reduction" in the emissions of contaminants in Mexico City, but that ozone and total suspended particles continue to be problematic. Ozone levels are consistently rated as "unsatisfactory" on Mexico City's Metropolitan Air Quality Index, which also monitors levels of nitrogen dioxide, sulfur dioxide, carbon monoxide, suspended particles, and ultraviolet radiation.

### **54. Industrialist, Climate Change Experts Named To Mexican Environment Ministry Top Spots**

Environment Minister Alberto Cárdenas Oct. 6 named industrialist Raúl Tornel as his new general coordinator of advisers. As general coordinator of advisers, Tornel will coordinate activities between the Environment Ministry (SEMARNAT) and other ministries and advise Cárdenas on the different plans and projects underway in various areas of the country. The coordinator of advisers is equivalent to the post of undersecretary. Tornel succeeds Rodolfo Lacy, who left SEMARNAT following the dismissal of former Environment Minister Victor Lichtinger and other top ministry officials in early September.

Until March, Tornel was president of the Ecology Commission of Mexico's Confederation of Industrial Chambers (Concamin). Tornel's appointment came about three weeks after Cárdenas named three new undersecretaries--one business leader and two academics who are experts in climate change--to lead the Vice Ministry for Environmental Planning and Policy, the Vice Ministry for Environmental Regulation, and the Vice Ministry for Management of Environmental Protection.

At a presentation ceremony Sept. 18, Cárdenas announced that he had chosen Fernando Tudela to be undersecretary for environmental planning and policy, the vice ministry in which most environmental policies are developed. Tudela is an academic who has served as an adviser to a number of United Nations agencies and who is an expert on climate change. He played an important role in SEMARNAT during the administration of former President Ernesto Zedillo, serving as coordinator of advisers to then-Environment Minister Julia Carabias.

At the same ceremony, Cárdenas also presented Juan García de Alba as SEMARNAT's new undersecretary for environmental regulation. García de Alba will lead the vice ministry that oversees the various working groups drafting new environmental protection standards and regulations and that deals closely with industry. García de Alba is a businessman, former federal deputy (member of Congress), and a member of the National Action Party (PAN), the party of President Vicente Fox and Cárdenas.

Finally, the new SEMARNAT chief said Francisco Giner, former adviser to the Economic Commission for Latin America, has replaced Raúl Arriaga as undersecretary for management of environmental protection. Giner also is

an academic who played a role in the Environment Ministry under Carabias as director general of environmental regulation with the National Ecology Institute (INE). His areas of expertise include regulation, environmental management, industry, and climate change.

## ASIA PACIFIC

### 55. South Korea Drafting Law to Push Environment-Friendly Cars

South Korea will add a new law with the aim of spurring manufacturers to make environment-friendly cars and consumers to buy them. The draft of a "Law on the Promotion of the Development and Adoption of Environment-Friendly Vehicles," made public by the Ministry of Commerce, Industry, and Energy July 12 under Notice No. 2003-147, calls for "comprehensive and systematic" incentives for the industry and consumers to move away from gasoline-powered cars.

The proposed law would require the ministry to develop annual and five-year plans to help spur development of environment-friendly automobile technologies, such as hybrid engine and fuel cell technologies, at the national and local government levels.

It also would set certification criteria for environment-friendly cars. Environment-friendly cars would include vehicles using electricity, solar power, compressed natural gas, hydrogen, and other clean energy sources. These vehicles would have to meet more stringent emissions and energy efficiency standards than conventional cars.

The central and local governments would provide financial and technical

support for the industry and would have the power to impose quotas on government agencies and businesses for purchasing environment-friendly cars, according to the draft legislation. Consumers would be given tax incentives for buying such vehicles.

The draft legislation consists of 17 articles. The ministry plans to submit it to the National Assembly for approval sometime this year and to issue detailed rules and regulations to carry out the measure during the first half of next year, including the types of cars and other vehicles to be covered by the law.

South Korea's first hybrid cars will enter the market next year following a coordinated push by government and industry to integrate the leading global technology in environmentally friendly automobiles. Ministry of Environment officials said Sept. 16 that several government agencies will be involved in the development and diffusion of hybrid cars. An official at the ministry's task force working on improving air quality in and around the capital city of Seoul said the ministry is in talks with the Ministry of Planning and Budget to allocate funds to replace police patrol cars in the metropolitan region with hybrid cars as a first step toward wider market deployment.

The official said that a first batch of 200 hybrid cars will be introduced next year, with more to come in the following years. Hybrid cars complement an internal combustion engine with an electric motor used at lower speeds.

The ministry also is looking to put in place incentives for using environment-friendly vehicles that might include tax

breaks for low-emission vehicles such as cars running on hybrid or fuel cell engines. "These planned incentives will be made more effective by disincentives for diesel cars, including higher diesel fuel prices."

Currently, diesel fuels are about 40 percent cheaper than gasoline in South Korea, fueling the popularity of diesel-powered sport utility vehicles and minivans. Domestic sales of diesel sedans, currently banned for environmental reasons, will be liberalized sometime in 2005, adding urgency to the ministry's drive for environment-friendly cars.

Meanwhile, the Ministry of Commerce, Industry, and Energy, which often conflicts with the Ministry of Environment over environmental policy priorities, is also throwing support behind the hybrid car campaign. In August, the ministry announced a list of South Korea's 10 future "growth-engine" industries, which include hybrid cars.

According to the commerce ministry's plan, billions of dollars will be put into developing commercial hybrid cars within the next few years under a government-industry cost-sharing program similar to a the U.S. program begun in 1994.

**56. Sinopec To Voluntarily Offer Lower Sulfur Diesel Fuel**

Starting on October 1, Sinopec has announced that it will make available on a voluntary basis a lower sulfur diesel fuel for cities. The specification for the new fuel is summarized below.

<b>Automobile Diesel Fuels GB/T 19147 - 2003</b>							
Brand number	10	5	0	-10	-20	-35	-50

Solidifying point, °C max.	10	5	0	-10	-20	-35	-50
CFPP, °C max.	12	8	4	-5	-14	-29	-44
FP (PM), °C min.	55				50	45	
Ignition property (one of the following properties must be met)							
Cetane number min.	49				46	45	
Cetane index min.	46				46	43	
Density at 20°C, kg/m <sup>3</sup>	820 - 860					800 - 840	
Viscosity at 20°C, mm <sup>2</sup> /s	3.0 - 8.0				2.5 - 8.0	1.8 - 7.0	
Distillation, °C: 50% vol. recovered at max., 90% vol. recovered at max., 95% vol. recovered at max.	300, 355, 365						
Particulates	Nil						
Copper corrosion rating (50°C, 3 hr) max.	1						
Ash, % by mass. max.	0.01						
Carbon residue on 10% distillation residue, % by mass. max.	0.3						
Water, % by vol. max.	Trace						
Sulfur, ppm max.	500						
Oxidation stability (insoluble), mg/100 ml max.	2.5						
Lubricity (HFRR scar dia. @ 60? μm max.	460						

### 57. Japan's Hino Markets Eco-Friendly Truck

Hino Motors Ltd has begun selling a two-ton-class small truck that meets the strict diesel gas emission standards expected to take effect in 2005. Hino combined an advanced DPF (diesel particulate filter) with a low-emission diesel engine and installed the system in the Dutro light-duty truck.

Harmful particulate matter produced from the combustion process is collected in the DPF, after which it is gradually processed. Some 95 percent of the particulate matter and 100 percent of the soot is removed in the process, so the exhaust is clearer and has nearly no odor. Conventional systems remove only 70-80 percent of particulate matter.

The 150-horsepower model is sold for

3.12 million yen (US\$26,418), 180,000 yen more than a comparable 140-horsepower version without the emissions reduction system.

Using the same technology, Hino plans within the year to release a standard-size truck with a capacity of 4 tons or more. Next year, it is slated to supply Nissan Diesel Motor Co with diesel engines for midsize trucks, and plans to offer the new system as well. A supply arrangement with Swedish truck manufacturer Scania AB is also under consideration.

#### **58. China Applied Euro II Emission Standards On Heavy Trucks From Sept.**

In line with the step-by-step strategy of raising domestic vehicle emissions standards, the Chinese government has released its latest circular on the issue, requiring heavy-duty vehicles, which have a total weight larger than 3.5 tons, to comply with the EURO II emission standard from September 1, 2003 before they can be manufactured, imported, sold or registered in China. This is the first time that the EURO II standard has been implemented nationally in China, although it is only targeted at new heavy-load vehicles.

With the EURO II standard for light-load vehicles at a even higher level, the Chinese government has decided not to implement it nationwide until July 1, 2004, so as not to put too much of a burden on local industries too quickly, according to a SEPA official.

#### **59. FY 2001 Emissions Dip 2.5 Percent in Japan**

Japan's greenhouse gas emissions in fiscal 2001 fell 2.5 percent from fiscal 2000 to 1.299 million tons, reflecting the

impact of a soft economy, the Ministry of the Environment reported Aug. 29. Although emissions declined in FY 2001, they still were 5.2 percent higher than they had been in fiscal 1990, the MOE noted. Under the Kyoto Protocol, Japan has committed to reducing greenhouse gas emissions--primarily carbon dioxide--6 percent by 2012, based on 1990 levels.

With FY 2001 CO<sub>2</sub> emissions still 5.2 percent above 1990 levels, Japan must redouble its efforts to reduce emissions, a ministry official said. If fiscal 2002 emissions fail to show visible decreases, Japan would have to introduce environmental taxes, levies, and other restrictive legislative and regulatory measures to bring down emissions, he said. The country is scheduled to hold that review in fiscal 2004. Japan's fiscal year runs from April 1 to March 31. FY 2001 ended March 31, 2002.

Of the aggregate emission volume, the industrial sector's emissions, which account for about 40 percent of total emissions, shrank 3.8 percent from fiscal 2000 and were down a solid 5.1 percent from 1990 levels, MOE data showed. Emissions in the transport sector edged up 0.8 percent in FY 2001 and were up a hefty 22.8 percent over 1990 levels.

Carbon dioxide emissions, which accounted for 93.3 percent of the total emission volume, slipped 1.3 percent from fiscal 2000, but they were 8.2 percent higher than they had been in 1990. Per capita CO<sub>2</sub> emissions in fiscal 2001 stood at 9.53 tons, or 2.3 percent less than they had been in FY 2000. However, per capita emissions still were 5 percent above 1990 levels.

Emissions of five other greenhouse gases--methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride--all registered

declines in FY 2001 and all were below 1990 levels.

Of energy-generated CO<sub>2</sub> emissions, emissions from the transport sector increased 2.2 million tons, reflecting increased motor vehicle ownership.

#### **60. Japanese Environment Ministry Unveils Draft of Tax Plan**

The Japanese Ministry of the Environment's key advisory panel has issued a final draft plan for an environmental tax intended to discourage unnecessary use of energy and generate revenue for developing energy conservation technologies and social systems. The ministry's Central Environment Council finalized the draft Aug. 27, and recently posted it on the ministry's Web site seeking public comments and support for introduction of the tax.

The ministry has been studying environmental taxation as part of the Japanese government's review in 2004 of the first-stage implementation (2000-2003) of its Kyoto Protocol commitment to reduce greenhouse gas emissions by 6 percent by 2008-2012, compared with 1990 levels.

In the first stage, voluntary industry and household efforts to reduce carbon dioxide were emphasized, such as an environmental charter by the Japan Business Federation, Nippon Keidanren, which represents most top Japanese companies. If data show no reduction of GHG emissions during the period, the next stage would require the government to implement economic measures, including an environmental tax--though at this time, officials emphasize that everything is fluid and nothing has been decided.

The draft plan said an environmental tax

should be imposed on petroleum, coal, and natural gas--fossil fuels known to be a major cause of global warming--and that the tax should encourage energy efficiency and conservation. Revenues should be used for the development of energy conservation technologies and social systems, the draft plan said.

It said the tax should be collected from the upstream parts of the energy supply chain--at the time of importation, refining, and shipment--and that it should be collected from general trade houses, petroleum refiners, and others involved in the upstream parts of the process. The companies then can pass on the tax to the consumer as an increment in retail price, it said.

The draft put the tax at ¥2 (1.7 cents) per liter or ¥3,400 (\$29.25) per ton of carbons and would cost approximately ¥5,500 (\$47.33) per household each year. The tax revenues would be ¥950 billion (\$8.2 billion), it said.

Energy conservation technologies that could be developed with the revenues include energy-efficient housing, solar-power generation systems for households and offices, **hybrid motor vehicles**, reforestation of urban areas, and other social infrastructure projects, it said.

Officials of the Ministry of Economy, Trade, and Industry Sept. 16 argued that the MOE's draft plan sounded too optimistic and predicted that greater taxation would be needed to achieve the Kyoto Protocol target--though they admitted that they have yet to work out more precise calculations.

#### **61. UNEP, Mongolia Sign Framework Agreement**

The United Nations Environment Program (UNEP) and Mongolia's

Ministry of Nature and Environment (MONE) signed an agreement Aug. 22 under which UNEP will assist the ministry in its fledgling efforts to reduce deforestation and improve declining air quality in Mongolia's capital, Ulan Bator. Under the "framework agreement to support sustainable development," which will run until 2005, UNEP will help Mongolian officials develop a "national environmental action plan" and "national sustainable development strategies." With a total budget of \$635,500, the project also will help the MONE develop and implement environmental regulations and sign on to initiatives such as the Montreal Protocol on Substances that Deplete the Ozone Layer.

UNEP said in an Aug. 22 statement that the agreement was necessary as recent assessments had shown deforestation and pollution in Mongolia had climbed to dangerous levels. "Air quality is also a significant problem in urban areas. Pollution from thermal power plants, hundreds of heating boilers, 75,000 open fires in traditional Mongolian tents and wood homes, and a 50,000 strong vehicle fleet, is leading to more and more cases of acute respiratory disease."

To address Mongolia's environmental problems, UNEP and Mongolian officials will conduct an "assessment and early warning" program that will result in sustainable development initiatives, implement strategies such as the Greenhouse Gas Emission Reduction from Industry in Asia and the Pacific and Refrigeration Management Plan, and launch joint training and capacity-building efforts.

The progress of the project will be reviewed on an annual basis.

## **62. Indonesia Introduces Euro 2**

## **Standards**

The Minister of Environment has signed the Euro-II decree, requiring all new vehicles to have Euro-II standard technology by 2005. It reflects some bargaining with the auto industry, however, which provides additional flexibility. Specifically, new type models are changed every 5-8 years, and Toyota will introduce a new model this year with technology geared to leaded gasoline and high sulfur diesel. This means that Toyota - which has 80% of the car market - will not update to the Euro-II engines until around 2007.

## **63. China Working On New Standard For Gasoline Additives**

China is drawing up a national standard on gasoline combustion chamber cleaner, or the so-called "fourth-generation" gasoline cleaner capable of completely removing deposits in a car's oil burning system and thus reducing toxic emissions, according to the Standardization Administration of China (SAC).

According to the Hazardous Materials Control Standard for Motor Vehicle Gasoline, or GWKB1-1999, enacted by China's State Environmental Protection Administration (SEPA), all motor vehicle gasoline in China must contain some type of cleaning agent, as locally-produced gas tends to contain a high level of olefins.

The most common cleansing additives used in China now are the second or third-generation products, also known as the injector or intake valve cleaner. Neither can totally wipe out deposits in the car engine system.

As a result of the new national standard, most gasoline cleaning agents currently being consumed in China will be labeled



obsolete and producers will be urged to raise the threshold for the product, according to *Zhongguo Zhiliang Bao*, the official publication of China's State Administration of Quality Supervision, Inspection and Quarantine, the government authority in charge of SAC.

China imposed the EURO I emission standard on domestic motor vehicles from January 1, 1999 and upgraded it to the EURO II standard for heavy load vehicles from September 1, this year. The more strict EURO II standard for lighter vehicles, or those weighing less than 3.5 tons, is planned to be implemented nationwide on July 1, 2004.

The development of gasoline cleaner has gone through several stages, with the initial first-generation product used to remove carburetor deposits, and the second, third and fourth generation agents targeting sediments in the injector, intake valve and combustion chamber respectively.

#### **64. New Zealand Exempts Ethanol Blends From Tax**

The government Sept. 8 announced that ethanol-gasoline blends are to be free from excise duty for a period of at least two years. Transport Minister Paul Swain said the "use of renewable ethanol-in-petrol blends will help reduce transport's dependency on fossil fuels and ensure the sector contributes to reductions in climate change emissions." The new measure was prompted by the desire to use the 6 million to 11 million liters of renewable ethanol produced annually by the New Zealand dairy industry. The Environmental Risk Management Authority, on the application of the Energy Efficiency and Conservation Authority (EECA), approved the use of up to 10 percent ethanol in gasoline

blends in August. Unblended gasoline currently attracts an excise tax of NZ18.475 cents per liter (\$0.405 per gallon). EECA is now working with the oil companies on bringing the new blends to market. EECA is also compiling a list of motor vehicle types than can use the blend. The excise tax waiver will be reviewed with the oil companies in two years time.

#### **65. Japan Launches Plan To Promote Efficiency in Transport Sector**

The Japanese Ministry of Land, Infrastructure, and Transport in October will start promoting a "green transportation" system that awards "Green Management" certificates to trucking companies, coastal shipping operators, and other fleet owners meeting MLIT environmental standards, ministry officials said Sept. 17.

The system is similar to the International Organization for Standardization's ISO 14001 environmental management series, said the officials from the ministry's Land Transport Bureau. Companies that have secured ISO 14001 certification for their environmental management, including management of air and waste discharges, are viewed as eco-friendly firms that benefit from a better public reputation and increased business, they said.

Starting in October, the MLIT will grant Green Management certificates to trucking companies whose vehicles meet standards on: fuel and energy efficiency; limiting time spent idling; modal efficiency (carrying cargo on all legs of a trip); vehicle maintenance; use of mixed-fuel vehicles such as those that use electricity, natural gas, or a hybrid; and disposal of end-of-life vehicles.

The standards, known as "check points," were drafted by the Eco-Mobility Foundation, a nongovernmental organization that has worked with the MLIT, they said. Verification of fleet owners' compliance with the standards will be performed by ISO 14001 qualified inspectors that are recognized by the Eco-Mobility Foundation, they said.

The officials said the ministry had come up with the "green transport business promotion" system to help fleet operators of all sizes to cooperate in reducing transport sector air pollution, carbon dioxide, noise, illegal dumping of industrial waste, the dumping of end-of-life vehicles, and traffic accidents.

Obtaining an ISO 14001 series certification currently costs about \$30,000 per firm in Japan, whereas the Green Management certification can be had for as little as \$1,500, the officials said.

Already, large cargo consignment companies in the automotive parts, high-tech, and publishing industries are expressing interest in using trucking firms that obtain the Green Management certification as part of their green procurement programs, one official said.

Starting in spring 2004, the MLIT plans to start processing applications from bus and taxi fleet owners interested in obtaining Green Management certification. Later, the ministry hopes to process applications from coastal shipping operators and railways, the officials said.

As an incentive for fleet owners to allow Green Management inspection and verification every two years, the MLIT is considering a plan to buy existing Green Management certificates from fleet owners for about \$1,000 so that

companies need only pay \$500 for renewal.

The Japanese transport sector's CO<sub>2</sub> emissions account for 20.7 percent of aggregate emissions and is growing rapidly, having risen 23 percent in fiscal year 2000, which ended in March 2001, according to the Ministry of the Environment. Trucks accounted for as much as 15 percent of the 20.7 percent. Japan has 55,000 trucking operators running 980,000 vehicles, according to MLIT data.

#### **66. Indian State Establishes Green Park, Takes Steps to Clean Up Industry, Cars**

India's southern state of Andhra Pradesh is taking steps to boost environmental protection such as establishing a development zone for environmentally friendly industries, raising automobile emissions standards, and drafting tax incentives to encourage clean production, government officials told a conference Sept. 19.

The state's Industrial Minister K. Vidyadhar Rao outlined plans for a 1,000-acre "green park" that he said will be the first of its kind in India and will accept only industries with no air emissions or wastewater discharge to be located at Jadcharla, near the state capital Hyderabad.

"We have already acquired about 680 acres, and the park would be operational by the end of 2004," Rao said. "No polluting unit will be allowed in this park."

He welcomed foreign investment in the new green park, saying that Volkswagen AG is already scouting a site there to build a manufacturing plant.

Speaking at the Green Business

Summit 2003, organized by the Confederation of Indian Industry's Sohrabji Godrej Green Business Center, Rao added that detailed parameters for approving plants in the park are now being developed by the government in collaboration with the Green Business Center.

He also described the state's "Vision 2020" plan for ensuring safe water, clean air, and the sustainable use of natural resources. Steps already taken to meet the plans objectives include the construction of a metro train service linking Hyderabad city with neighboring towns that was opened in June.

Also speaking at the conference, Secretary of the Andhra Pradesh State Pollution Control Board P. M. Kuriakose said the government is taking steps to remove commercial vehicles older than 15 years from the roads in Hyderabad city, which is rated as one of the 11 most polluted cities in the country by the Central Pollution Control Board.

"We have begun the process, and all 15-year-old buses, trucks, taxis, and three-wheelers will be off road by the end of 2004," he said, adding that all new vehicles are already required to meet Euro II emissions standards. Euro II standards were imposed in the European Union in 1997 and are roughly equivalent to standards in most U.S. states.

The government is "also looking at green fuel like compressed natural gas and liquefied petroleum gas as alternative fuel for the vehicles," Kuriakose said, adding that at least 20 gas stations in Hyderabad city were already dispensing these fuels.

Kuriakose also outlined government plans to offer financial and tax incentives to companies that adopt cleaner technology and install

wastewater management facilities. He said that the government is ready to split costs with industry for the construction of common effluent treatment plants, with the state and federal governments each prepared to pay 25 percent.

In addition, the state government is taking steps to improve the handling of hospital waste, he said. Currently, of the state's 19,000 health care establishments, only 3,000 were properly disposing off their biomedical, while most others simply dumped their waste in ordinary landfills.

"We plan to rope in another 6,000 health care establishments to use the incinerators before disposing off the biomedical waste," Kuriakose said.

He also said the state irrigation department is working with farmers to lower the use of pesticides. Pesticide use is now blamed for contaminating groundwater in several parts of the state, he said.

#### **67. New South Wales May Set "Best Technology" Emission Standards**

New South Wales may introduce emission limits that would require plants to use the best available pollution control technology when current regulations on smokestack emissions are replaced next August, according to a paper released by the state's Environment Protection Authority Sept. 22. New South Wales includes the city of Sydney and is Australia's most populous state.

The paper, Clearing the Air--Options Paper on the Clean Air (Plant and Equipment) Regulation 1997, states that emission limits for "air toxics" can be based on what is achievable using the best available technology (BAT). Air

toxics are defined as pollutants deemed carcinogenic, mutagenic, teratogenic, highly toxic, or bioaccumulators, although BAT requirements might also be extended to cover emissions of very fine particles, since current research shows these have no safe threshold, according to the paper. The paper acknowledges, however, that an immediate upgrade to BAT in all affected industries would be unfeasible, and suggests measures to phase in upgrades that would start with certain priority areas.

For emissions of other pollutants, the paper suggests the EPA continue to determine emission limits in terms of what can be delivered by reasonably available technology (RAT), as has been done in previous versions of the Clean Air (Plant and Equipment) Regulation, known as CAPER.

CAPER has been revised several times since it first came into force in January 1965, with more stringent limits being set for industry as new pollution control technologies have become available. Since each set of tightened limits has been applied only to new facilities, however, this has meant there are now three sets of emission standards: those applying to plant and equipment installed before 1972, those for plant and equipment installed between 1972 and 1997, and those for plant and equipment installed after 1997.

The paper notes that the pre-1972 limits are outdated and that older industries contribute disproportionately to industrial emissions. As an example, it says that only 8 percent of the large industrial premises in the state were built before 1972, yet these are responsible for 47 percent of total particulate emissions from large industrial premises in the state, 48 percent of total emissions of sulfur oxides, and 75 percent of total emissions of volatile organic

compounds.

The paper acknowledges that there is a range of views in industry on how to deal with the discrepancies. "Newer, cleaner industries that have significantly more stringent emission limits and stricter compliance requirements requested a level playing field for all industry, regardless of age," the paper says. "Older existing operators voiced concerns over the cost burden of upgrading existing equipment."

The EPA suggests the problem of outdated emission limits could be dealt with by including a "sunset clause" in the new regulation stating that at a specified future date, pre-1972 emission limits will no longer be sufficient for even the state's oldest industrial facilities. If this sunset date were set somewhere between 2008 and 2012, this would give older industrial sites time to plan for upgrades, the paper says.

The paper suggests the revised regulation could make it explicit that new equipment installed during upgrades should comply with the most recent CAPER emission limits, rather than the emission limits applicable at the time the industry established operations. The state EPA already has some discretion to apply newer limits in such cases through approval and licensing processes that are separate from CAPER.

The paper also notes that any proposal to impose new emission limits on upgraded equipment "would need to be formulated so as to avoid any 'perverse incentive' for industry to defer or not undertake upgrades; for example, significantly increased upgrade costs associated with more stringent emission requirements are likely to act as a disincentive."

### 68. New Zealand Drafts Air Quality Standards On Priority Contaminants

NZ Environment Minister Marian Hobbs announced Sept. 16 her ministry is developing national standards for air quality. The standards are expected to take effect in mid-2004, which would make them the first in a series of national standards to be set under New Zealand's main environmental law, the Resource Management Act (RMA). The draft standards are comprised of three parts:

- ◆ ambient air quality standards for the priority contaminants carbon monoxide, nitrogen dioxide, sulphur dioxide, particulate matter, and ozone;
- ◆ so-called prohibitive standards that ban outright activities that emit significant quantities of harmful contaminants, such as dioxins; and
- ◆ emission design standards for new solid-fuel appliances.

The proposed ambient standards consist of, for each contaminant, a maximum concentration limit, a maximum number of allowable exceedences per year, an absolute maximum concentration limit for the exceedences that triggers enforcement action, and a monitoring method.

The maximum concentration limit for PM-10 (particulate matter with a diameter of less than 10 microns) has been set at 50 micrograms per cubic meter ( $\mu\text{m}^3$ ), measured as a one-day average. The standard for carbon monoxide is 10 milligrams per cubic meter, measured at an eight-hour average; for nitrogen dioxide, 200  $\mu\text{m}^3$  (one-hour average); for sulphur dioxide 350  $\mu\text{m}^3$  (one-hour average); and for ozone 150  $\mu\text{m}^3$  (one-hour average).

The number of permissible exceedences depends on the

contaminant concerned. For ozone, no exceedences are allowed. For PM-10 the number is five per year, whereas for the other three contaminants it is nine per year.

### 69. Tokyo Emission Standards For Diesel Trucks Go Into Effect

The Tokyo municipal government and its three neighboring prefectures Oct. 1 jointly began phasing out diesel-powered commercial motor vehicles that fail to clear tougher new emission standards aimed at reducing suspended particulate matter. Officials from Tokyo's Environmental Bureau began using the new standards to inspect freight trucks at the city's sprawling Tsukiji wholesale exchange and at the Ota exchange Sept. 30, a bureau spokesman said Oct. 1. The inspectors demanded motor vehicle certificates and issued tickets to drivers whose rigs were not equipped with diesel particulate filters.

Vehicles that meet Tokyo's diesel emission regulations are issued special stickers for posting on the vehicles. Violations are subject to a fine of ¥500,000 (\$4,550) and an order to stop using vehicles in question.

Spokesmen for the Saitama, Chiba, and Kanagawa prefectures, which also implemented the new standards, said that officials there began inspecting diesel trucks and buses at the same time. The regulations in all four municipalities only affect commercial vehicles.

Officials said that the regulations were passed in response to health problems in Tokyo and other major cities including Osaka, which is now drafting similar regulations.

Bus and truck owners will have to either replace their old vehicles with new low-

emissions types or fit their old ones with diesel particulate filters and oxidation catalyst devices. Offenders could face fines and their employers might have their names publicized. The new regulation might force some firms to reduce their fleets or go out of business. While Tokyo and the three other prefectures as well as the Transport Ministry are offering subsidies to shoulder part of the cost of installing filters and catalysis devices, Chiba, Saitama and the ministry stopped accepting applications for the funding for the current fiscal year because the sheer number of applicants threatened to overwhelm their ability to offer financial help. This has compelled the Japan Trucking Association to double its subsidies for affected member firms from September.

The rules apply to vehicles in use for seven years or more. Those that have not reached that age can keep running even though they do not meet the emission limit.

Tokyo and its neighboring prefectures would not have introduced the regulations if Tokyo Gov. Shintaro Ishihara had not taken the initiative. The regulations were spearheaded by Ishihara, who has singled out particulate emissions from diesel-powered vehicles as a major source of air pollution in the metropolis. Ishihara has complained that people living and working in the Tokyo area face a higher risk of respiratory problems than those in other prefectures due to the large number of vehicles flowing into the metropolis from all over Japan.

Ishihara has been criticizing the national government for being slow in its pollution fight, saying it has yet to take any effective measures to combat the worsening problem. In a booklet released earlier this month, the metropolitan government emphasized

that Tokyo's regulations are more advanced than the national limits.

However, the metropolitan government has had to modify its plans in introducing the regulations as both vehicle users and particulate-filter producers were unprepared. The filter supply has not kept up with demand from diesel-vehicle operators. Tokyo and its neighboring prefectures announced in mid-September that diesel vehicles without the filters can run through the end of this year if they can prove, with the appropriate official certificate that they are on the waiting list for a filter.

Tokyo has also announced it will resume accepting applications from diesel-vehicle operators for filter-buying subsidies. Although it earlier set August as the deadline, more and more operators and owners, apparently unaware or unprepared, continued to seek special treatment after missing the deadline.

The metropolitan government has meanwhile urged Internet operator Yahoo Japan to delete the account of a seller on its auction site that offered stickers showing official approval of vehicles in line with emission regulations. The provider yanked the information in about a week.

Filter prices range from 400,000 yen to 1 million yen, while the cost of a new truck ranges from 3 million yen to 10 million yen or more, depending on load capacity.

Domestic sales of trucks with a load capacity of 3 tons or more during the January-June period jumped 34 percent over the same period last year to 48,764 units, according to the Japan Automobile Dealers Association.

## **70. Japan Considering Regulations to Reduce Emissions From New Trucks, Buses**

The Ministry of the Environment has begun drafting new regulations on automobile tailpipe emissions that would require reducing nitrogen oxide emissions by as much as 90 percent by fiscal 2010 from the current levels. In response, the world's automakers are urging governments to coordinate emission regulations that now differ greatly from country to country.

At an Oct. 17 meeting, the Automobile Emission Gas Expert Committee, which advises the Central Environment Council, began drafting a new diesel vehicle emission standard that would be much tougher than the standard scheduled to take effect in October 2005. The advisory committee discussed the viability of setting a fiscal 2010 target for reducing nitrogen oxides and particulate matter from the fiscal 2003 standard. In the next six months the Commission will discuss whether it is technologically possible to introduce a standard to reduce NOx by as much as 92 percent and particulate matter by 93 percent from the fiscal 2003 regulations.

At a meeting of heads of the world's top 15 automakers in Amsterdam Oct. 15, participants unanimously decided to urge their respective governments in the United States, Japan, and the European Union to unify large diesel-powered vehicle emission standards by 2010. The emission coordination would help truck and bus manufacturers reduce research and development costs, which are skyrocketing according to industry representatives.

Automakers also are working to convince consumers that diesel cars are environmentally friendly and cheaper to drive if they have better emission

controls, an official with the Japan Automobile Manufacturers Association said. Selling diesel autos, which burn far less fossil fuels and have far lower greenhouse gas emissions, may be vital to efforts to address climate change according to industry.

## **71. Clean Cars Of The Future To Dominate Tokyo Show**

Japanese auto makers aim to captivate drivers with environment-friendly concept cars at the Tokyo Motor Show, showcasing technology they hope will set a global standard for a rapidly growing segment. Toyota and Honda, Japan's top two, set a world first last year when they put on sale fuel cell vehicles (FCVs), which run on hydrogen and emit only water as a by-product. They are also alone in selling fuel-efficient gasoline-electric hybrid cars by the tens of thousands.

Toyota is eager to popularize hybrids to meet its target of selling 300,000 of the cars annually by mid-decade, and among the highlights of the 12-day show will be its CS&S open-top sports car and SU-HV1 sport utility vehicle concepts, both of which use a hybrid powertrain.

With a sporty two-seater that can rev up to 100 km an hour in 8.6 seconds, cruise at a maximum 205 km an hour and get 33 km for a liter of gas (78 mpg), Toyota hopes to convince the anticipated 1.4 million visitors that environmental and driving performances can go hand in hand.

Visitors will get a chance to test ride some of the FCVs and hybrid cars at a seaside park next to the exhibition halls in Makuhari, outside Tokyo.

One of Toyota's biggest rivals in promoting next-generation powertrains is Detroit's General Motors, the world's

best-selling car maker. GM has been stirring up local media attention over the past few weeks. The company, which wants to be the world's first to sell a million FCVs, will show off its Hy-Wire concept car for the first time in Japan, hoping to dash its image as a maker of massive gas-guzzlers such as the Hummer H2 SUV.

The Hy-Wire, which stole the show in Paris a year ago as the first drivable vehicle to combine hydrogen fuel cell power with new "drive-by-wire" - or electronic - control technology, is a complete rethink of the way cars are designed. It is quiet, roomy and has no gear stick or brake pedal, using instead a single steering unit that looks like a giant video game control. It spews nothing but water from its exhaust pipe.

Car makers generally count on international auto shows to boost sales in the local market, but the Tokyo show will be more about pitching futuristic cars as industry officials expect Japanese auto demand to go nowhere fast in the near term. Sales of new cars and trucks during the six months to September in Japan - the first half of the country's business year - were roughly flat from the year before, up just 0.5 percent at 1.9 million units. Annual car sales, excluding 660 cc mini-vehicles, are expected to hover around four million units until the sluggish economy picks up.

By volume, Japan is the world's third-largest car market after the United States and Europe, but it accounts for less than 20 percent of auto makers' profits due to competitive pricing. Honda sells nearly twice as many cars in North America as in Japan. And third-ranked Nissan said last week it now expects to sell more cars in the United States than at home.

The show will see the debut of 41

concept and production vehicles from 38 car makers, including:

- Toyota's Fine-N FCV has in-wheel motors in all four wheels, which have been pushed out to the corners of the car to open up interior space with a flat floor.
- Nissan's 3-meter long Effis city commuter features light-weight packaging with recyclable seats and a "super motor" combined with a compact lithium ion battery.
- Suzuki's six-seater, compact fuel cell van, the Mobile Terrace, features sliding doors, seats, floor and roof. The rounded, translucent van aims to mimic an open terrace, and uses 20 percent owner GM's Hy-Wire platform.
- Honda's Kiwami fuel cell design concept features flat floors and a spacious interior, though the car does not actually run.

Amid all the crystal-ball gazing, some leading car makers will showcase actual production models, such as Honda's fully remodeled Odyssey minivan. The company has just launched the vehicle in Japan, in the thick of a slump that has seen its domestic sales drop more than 20 percent in the year to date. Figures like that may yet prove the toughest test of the industry's innovation.

When it comes to alternative-fuel vehicles, Japanese automakers are rapidly breaking out of the compact eco-car stereotype.

Toyota will showcase a hybrid sport



wagon that accelerates 20 percent faster than the Lexus RX 330. And Toyota will introduce a Lexus-badged full-sized luxury sedan concept that is expected to use a hybrid drivetrain.

Honda will display an eight-passenger minivan powered by a hybrid V-6 powertrain. Honda also will feature a sports car that combines a hybrid powertrain, carbon-fiber body and aerodynamics to attain a fuel economy of 94 mpg.

Subaru's B9 Scrambler hybrid roadster relies solely on its 136-hp electric motor at speeds up to 50 mph before the 2.0-liter engine kicks in.

But Tokyo will feature relatively few of the bizarre concept cars that made previous shows so distinctive. Most concepts on display will be serious design efforts that hint at future production vehicles. And many of the automakers' offerings will seem smaller - at least by American standards.

- For example, Mitsubishi Motors Corp. will unveil four new vehicles with engines of 660cc, 1.0, 1.5 and 2.0 liters.
- Toyota will unveil a concept that hints at its next-generation Vitz, known as the Yaris in Europe.
- And Nissan's Effis concept could be the poster car of the show: a subcompact commuter car powered by a fuel cell.

## **72. New Zealand to Adopt Vehicle Emissions Testing Scheme**

New Zealand will establish regular emissions testing for all road vehicles, Associate Transport Minister Judith Tizard announced Oct. 1. The plan, which will take three years to implement, is part of a series of measures aimed at

curbing urban air pollution. Tizard said air pollution from motor vehicles contributes to "serious health problems, including asthma, heart disease, and bronchitis." She said a report released in 2002 by the Transport Ministry, titled Health effects Due to Motor Vehicle Air Pollution in New Zealand, estimated that around 400 people die prematurely each year due to exposure to vehicle emissions.

Tizard said the emissions testing initiative builds on earlier measures to tackle vehicle pollution. These include:

- more stringent fuel standards to reduce the sulphur content of diesel and gasoline, which are being phased in over the next three years;
- the Vehicle Emissions Exhaust Rule 2003, which will come into force Jan. 1, 2004, and requires vehicles entering New Zealand to have been built to a recognized emissions standard;
- increased transport funding for public transport, walking and cycling promotion, and to tackle traffic congestion in key areas including road developments; and
- further research on the health impacts of vehicle emissions.

The main item in the government's Oct. 1 announcement is the proposed emissions screening of all in-service vehicles during their life on the road as part of the current system of regular road safety inspections.

A second aspect of the proposed measures is that secondhand imported vehicles must also be emission screened at the New Zealand border to ensure they meet minimum emissions performance standards as they enter

the country.

The government expects the new system to be in place by the latter half of 2006.

The government says it will mount a campaign to educate vehicle users on the need for, and benefits of, regular vehicle maintenance and repair.

Tizard said the government will implement a leadership program on the vehicle emissions issue. Officials will design a program for central government agencies to preferentially buy low-emission and fuel-efficient vehicles when it is practical. Options being investigated will build on an existing government leadership program run by the Energy Efficiency and Conservation Authority, the "Energy Wise Government" program.

### **73. India Unveils National Policy On Auto Fuel To Curb Pollution**

The Indian government has announced a national policy on auto fuel to curb growing air pollution in cities and towns. The policy lays down a roadmap for achieving various vehicle emission norms by 2010.

To produce cleaner fuel, the mostly state-run domestic oil refiners are expected to invest up to 300 billion rupees (US \$6.7 billion), while automobile manufacturers will be spending another 250 billion rupees (\$5.5 billion) to make vehicles with better emission standards.

The policy sets an April 2010 deadline to ban the sale of any vehicle that doesn't meet benchmark Euro-III emission norms established by the European Union. For 11 major cities, including New Delhi, the deadline has been accelerated to April 2005. These

cities will further be required to meet the higher Euro-IV norms by 2010.

The national auto fuel policy is nothing better than an eyewash, says the Centre for Science and Environment (CSE). CSE had earlier rejected the Mashelkar committee's recommendations on auto fuel policy when they were sent to the cabinet for approval. The policy, which plays into the hands of polluters, will destroy the Supreme Court's initiative to protect public health.

The policy, according to CSE, is so weak and uncaring about public health objectives that it virtually denies millions of urban Indians the right to clean air. While a majority of Indian cities are choking on very high levels of particulate pollution, the policy stipulates that "clean" fuel (meeting Euro II norms) that is currently being supplied to Delhi will be made available to the rest of the country only by 2005. People of the country have been given no option but to die a slow death, as nothing new is proposed for them. The policy totally ignores Delhi's experience of technological leapfrogging with aggressive use of alternative fuels and quicker implementation of advanced emission norms. If this experience is anything to go by, Euro IV norms need to be implemented faster in these cities to make a visible impact.

The auto fuel policy even dilutes the recommendations of the Inter-Ministerial Task Force on fuel quality and vehicular emission specifications and the road map proposed by the Society for Indian Automobile Manufacturers (SIAM) in 2000. Moreover, the minister's suggestion that the government should decide only the vehicular emissions standard and the corresponding fuel specifications without specifying vehicle technology and the fuel type, is grossly inappropriate, feels CSE.

India's federal Cabinet approved a new "Auto Fuel Policy" designed to cut vehicle-generated air pollution by gradually phasing in tougher vehicle emission standards modeled on European Union norms by 2010, the Petroleum Ministry announced Oct. 6. If approved by India's Parliament, the plan would require motor vehicles nationwide to meet so-called Euro II emission standards starting April 1, 2005, and Euro III norms by 2010.

The proposal will be presented to Parliament in December, where it is likely to be enacted. Currently, only 11 cities are required to meet Euro II norms: New Delhi, Mumbai (Bombay), Kolkata (Calcutta), Bangalore, Chennai, Hyderabad, Ahmedabad, Pune, Surat, Kanpur, and Agra. Under the proposed policy, vehicles in the 11 cities now operating under Euro II standards will be required to meet Euro III norms by April 1, 2005, and Euro IV standards by 2010.

Current estimates indicate that motor vehicles are the biggest cause of air pollution in most of India's urban centers. For instance, the Central Pollution Control Board has estimated that vehicles contribute about 72 percent of the ambient air pollution in New Delhi.

In India, the government has adapted EU emission standards for available fuel quality and methods of testing. Euro I norms were implemented in India and took effect June 1, 1999, while Euro II norms were put in place April 1, 2000.

#### **74. SEPA Tightens Control Over Sulfur Dioxide Emissions**

On October 8, the State Environmental Protection Administration (SEPA) released a circular aimed at tightening controls over sulfur dioxide emissions, especially by coal-fired power plants.

According to the new document, the construction or expansion of coal-fired power plants in large- and medium-sized cities will be banned as a matter of principle.

The municipalities of Beijing, Shanghai, Tianjin and Chongqing, as well as the 21 provincial or regional capitals, are all the principal targets of the new regulation. The cities collectively accounted for more than 60% of the country's total sulfur dioxide emissions and suffer from serious acid rain problems, according to China Daily, the official English-language newspaper.

The long term development strategy set up by the Central Government stipulated that by 2005, the sulfur dioxide emissions volume over the country should fall by 10% compared to the 2000 level. In 2002, coal-fueled power plants across the country emitted 6.66 million tons of sulfur dioxide, over one-third of the total.

The circular also stated that in western China, coal-fired power plants that fail to meet national discharge standards must install desulfurization equipment, and local governments over the country are all required to establish sulfur dioxide control projects. In the meantime, 137 coal-powered power plants have been listed as "key plants" required to complete the installation of desulfurization equipment before 2005.

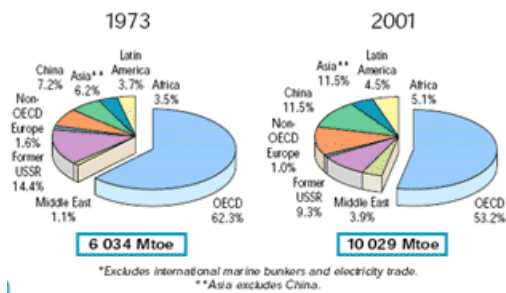
#### **75. China and the IEA's Key World Energy Statistics 2003**

China's increasingly significant role in the global energy market is more than evident in Key World Energy Statistics 2003, a document released recently by the International Energy Agency. In every aspect of the energy industry, China has shown marked increases over the period from 1973 to 2001, and

is of course expected to continue to rise. Such increases are required in order to sustain the nation's rapid rate of economic growth, but there have been some doubts about the sustainability of such a wholesale rise in the production and consumption of energy products.

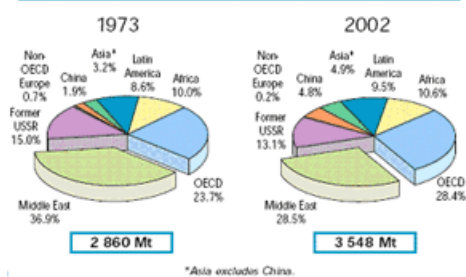
As is indicated in the following chart, China's share of the world TPES (total primary energy supply) has risen from 7.2% to 11.5% from the period 1973 to 2001. This is the largest share of any individual country with the exception of the United States.

1973 and 2001 Regional Shares of TPES\*



China has also increased its role as a producer of CRUDE OIL, as the following chart indicates, producing 169 mln tons in 2001, 4.8% of the world total, up from just 1.9% in 1973.

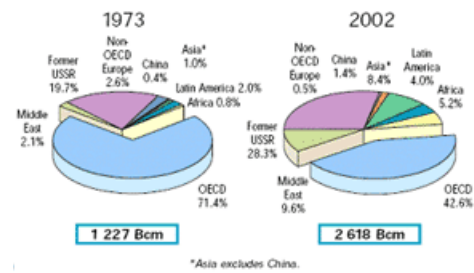
1973 and 2002 Regional Shares of Crude Oil Production



As a crude producer, China stood in fifth place, far behind Saudi Arabia, Russia, and the United States, but only producing only slightly less than Mexico and Iran. It also ranked above Norway,

Venezuela, Canada and the United Kingdom. However, its production is almost entirely self-consumed, and its important role on the international market comes from its growing weight as an oil importer. China became a net importer of crude oil in 1994. The rate of imports has been rising steadily ever

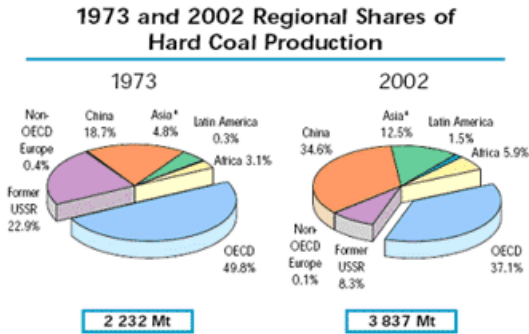
1973 and 2002 Regional Shares of Natural Gas Production



since, and is expected to continue to do so for many years to come.

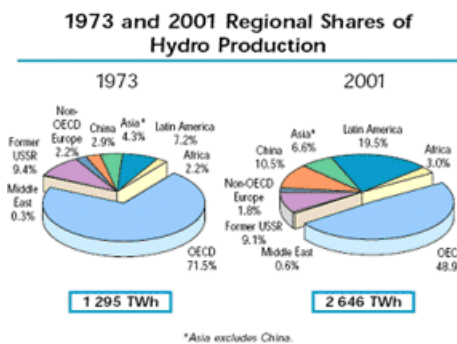
China's role as a NATURAL GAS producer is less significant. World production has risen from 1,227 bln cu m in 1973 to 2,618 bln cu m in 2002, but China's share of it – despite constant efforts to promote the exploitation and utilization of the relatively clean energy – rose from just 0.4% to 1.4%. The further development of key gas fields in western China, as well as the full operation of the West East Pipeline (WEP), should boost the figure further, however. China's position as an importer of natural gas is also likely to increase once a number of proposed pipelines from Kazakhstan and Russia are constructed, and once the terminals receiving LNG from Indonesia and Australia are ready.

China's position as a dominant producer of COAL has been strengthened over the period covered by the IEA.



China's ample coal reserves have enabled it to fuel its economic growth, but the rapid exploitation of coal reserves, especially during the early 1990s, has led to severe problems with air pollution, and the country now has to figure out a way of "cleaning" its coal, or of replacing it all together with alternative fuels.

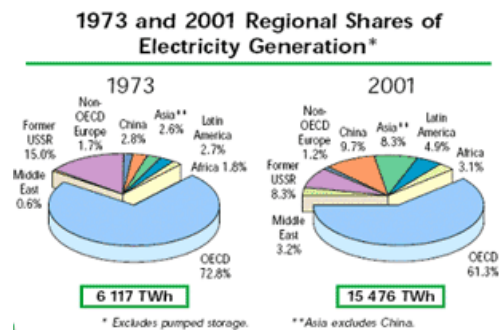
One replacement fuel has been HYDROPOWER. China has been exploiting its hydropower reserves with alacrity, and has boosted its share in the total world hydropower production from 2.9% to 10.5%, second behind only Canada in 2001. This share will rise still further as the generating units at the Three Gorges go into operation, and as a variety of other massive projects in Sichuan and Yunnan begin production over the coming years. There have been concerns that China's development of its hydropower potential has been done at an excessive speed and with little regard to the environmental



consequences.

Figures in the IEA report also show that China was the third biggest producer of PETROLEUM PRODUCTS in 2001, behind only the United States and Japan. Its total refining volume rose from a 1.5% global share in 1973 to 5.7% in 2001. By 2001, China had the third biggest crude distillation capacity, amounting to 5.6% of the world's total and coming behind just the United States and the former USSR.

China has of course seen significant growth in total ELECTRICITY production in recent decades. As shown in the chart below, total global electricity production has risen by about 250% in the period from 1973 to 2001. China's share of the total has risen from 2.8% in 1973 to 9.7% in 2001. By now, only the United States generates more electricity than China, but still, the gap between the top two producers is astonishing. China produces about a tenth of global electricity, while the United States

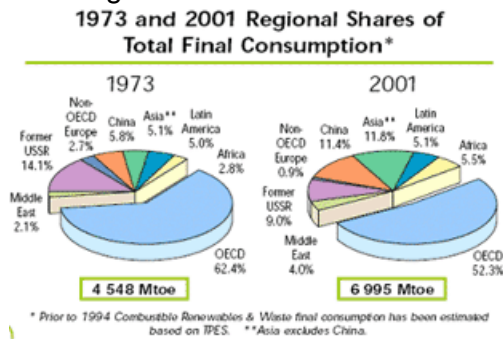


produces a quarter.

In terms of electricity produced from fossil fuels, China was the second-ranked coal-fired electricity producer in 2001 (behind the United States), and the sixth-biggest oil-fired producer (behind the US, Japan, Mexico, Saudi Arabia and Italy).

Global energy consumption overall has risen from 4,548 million tons of oil equivalent to 6,995 million. Meanwhile, China's share of the total has risen from

5.8% to 11.4%, as is indicated in the following chart.



It has also led to a serious increase in the volume of carbon dioxide emissions into the atmosphere, with China's share rising over the period from 5.7% to 13.1% to become the second worst in the world, behind only the United States.

As can be seen in the following chart, the growth in China's share of global primary energy supply is set to rise, but not at the speed that was seen in the previous twenty years or so. By 2030, China is expected to be responsible for about 14.7% of the total primary energy supply, up from 11.5% in 2001. The most significant growth is likely to be seen in China's consumption of energy, of course, with the nation depending more and more on imports of crude oil and natural gas.

## 76. Philippine Refiners Start Sale Of Low-Sulphur Diesel

Philippine refiners Petron and Pilipinas Shell have started selling low-sulphur diesel in Manila in line with their commitment to comply with the country's Clean Air law by November 1. The refiners and other small retailers have committed to bring down the sulphur content of automotive diesel oil to 0.05 percent from 0.20 percent by that date in Manila and in the whole country by January to reduce air pollution.

Petron, the country's largest refiner with

a capacity of 180,000 barrels of oil per day (bpd), launched its low-sulphur diesel on Friday. Its rival Pilipinas Shell, a unit of the Royal/Dutch Shell group and which has a capacity of 130,000 bpd, started selling the low-sulphur diesel yesterday. Caltex (Philippines) Inc, a unit of Chevron Texaco, has said it plans to close its 72,000-bpd refinery later this month and convert it to a 2.7-million barrel depot for petroleum products.

The Philippines, an importer of both crude and oil products, consumes between 135,000-157,500 barrels per day (BPD) of diesel or about 45 percent of its estimated 300,000-350,000 bpd total oil product demand.

Pilipinas Shell, which claims to have a market share of between 33 and 34 percent of local oil product demand, said it may either import or produce locally low-sulphur diesel. Petron also has an estimated market share of 33 to 34 percent while Caltex has 20 percent. The rest is divided among local oil retailers and importers.

Pilipinas Shell estimated an additional cost of 30 centavos to 50 centavos per liter in producing low-sulphur diesel.

Early this year, local oil firms increased gasoline prices by 60 centavos per liter after the government imposed a maximum aromatics content of 35 percent and lowered the benzene content to two percent by volume from four percent.

Petron has said it would begin the construction later this year of an isomerization unit and gas oil hydrotreater at its refinery. Both projects are expected to cost \$100 million. The isomerization unit would reduce the aromatics and benzene content of Petron's gasoline products while the hydrotreater unit would reduce its

sulphur content.

### **77. WHO Warns Of Deteriorating Health In Asia's Booming Cities**

Health conditions in Asia's booming cities will suffer dramatically unless governments take urgent measures to slash air and water pollution, the World Health Organization has warned. Many urban areas are growing so fast that economies, services, and infrastructure cannot cope, the WHO office for the Western Pacific region said in a statement, predicting a rise in outbreaks of disease as well as in crime, violence, environmental degradation, pollution, poverty, and unhealthy lifestyles.

WHO estimates 1.5 billion urban dwellers face air pollution levels above the maximum recommended limits. In Asia—with half of the world's city dwellers—more than 1.5 million people die every year from pollution-related diseases, including about a half-million deaths attributed to particulate matter and sulphur dioxide.

Bringing particulate matter down to safe levels could save up to 700,000 lives annually, WHO said.

### **78. Two Million Motor Vehicles in Beijing**

Beijing Municipal Traffic Administration announced that on August 4 more than 2 million vehicles were already registered in Beijing, of which 64% are privately owned. Just three years ago, experts had predicted that Beijing wouldn't reach 2 million vehicles until 2010. Of the 280,000 vehicles registered in 2002, 90% were private cars. Beijing now has 19 private cars per 100 households.

It took Beijing 48 years, from 1949 to

February 1997, to reach one million vehicles. The second million vehicles were added in 6 and half years. Extrapolating from the current rate of annual increase, Beijing will reach three million vehicles in about 3 years. While vehicles are increasing at 20% per year, the road network is expanding at only 3-4% per year. Statistics show that average driving speed on 11 main roads in Beijing is only 12 Km/h, roughly the same as riding a bicycle.

With now more than 2 million cars on the capital's streets, urban planners are trying to work out ways to free up the city's traffic jams. The Chinese government is urgently seeking ways to ease traffic in Beijing as cars multiply by the millions, clogged roads undermine productivity and the 2008 Olympics draw nearer.

Beijing recorded a total of 16,789 traffic jams last year with rush hour "actually consuming 11 hours of the day."

Beijing's roads are struggling to keep up: The city government has spent more than 10 billion Yuan (US\$1.2 billion) annually since 2000 upgrading roads and adding more than 2,000 km of roads inside the city limits.

Population growth -- an increase of 3.8 million people in the past decade -- has also pushed the number of drivers up sharply. The government also blames "Beijing's urban design layout."

"Many government offices, shopping centers and large enterprises are located in the downtown area of Beijing, while most of their employees live far away and even in the suburban areas," Xinhua said. "It has become a major burden on the local public transportation system."

Xinhua said the Beijing government is considering encouraging citizens to use



public transportation and car pools more. The agency, quoting "government sources," also said Beijing plans a policy of charging different parking fees for different vehicles, with private cars being required to pay more.

#### **79. Australia to Review SO<sub>2</sub>, Ozone Standards**

Australia's Environment Minister David Kemp and his state and territory counterparts agreed Oct. 2 to commence a review of the nation's ambient air standard for sulfur dioxide (SO<sub>2</sub>). The scheduled review will consider whether the existing one-hour, one-day, and yearly ambient air standards for SO<sub>2</sub> should be augmented by a 10-minute standard. The review is scheduled to be completed by next April. Meeting as the Environment Protection and Heritage Council (EPHC), ministers also agreed to begin preliminary work on a review of ambient standards for ozone (an indicator of photochemical smog) in the lead-up to a statutory review due in 2005.

### **SOUTH AMERICA**

#### **80. Argentina Pushing Legislation to Boost Use of Natural Gas in Public Transportation**

The government of Argentina, where one out of every six vehicles runs on compressed natural gas (CNG), is sponsoring legislation to boost its use in buses and trucks, a move authorities believe could help reduce air pollution 23 percent by 2012. The law would set up two funds--one to help finance the development of buses and trucks powered by CNG, and the other to help private companies swap from gasoline and diesel vehicles to CNG units. With some 1.2 million vehicles running on natural gas, Argentina is already a world

leader.

A study conducted in 2000 by the Environment Secretariat concluded that promoting CNG could help cut emissions in Buenos Aires and its adjoining area by a total of 23 percent by 2012, from 20.1 million tons to 15.5 million tons of five types of emissions--carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), hydrocarbons, and particulate matter (PM). Without those and other moves--including encouraging the use of public transportation over personal vehicles and better urban planning--air pollutants would increase 33.4 percent to 26.8 million tons by 2012, according to the study, titled Climate Change and Urban Pollution.

One of the funds will start with 32 million pesos (\$10.7 million) and add an extra 15 million pesos (\$5.03 million) a year through 2007 to help passenger and freight companies switch to CNG. Multilateral lending agencies and private-sector co-funding will also be sought. The other is a 3.5 million peso (\$1.17 million) a year fund for research and development of natural gas-powered vehicles.

The bill has cleared the Transportation and Energy committees in the Chamber of Deputies, Argentina's lower house of Congress. The Budget & Finance and the Industry committees have not passed it yet, but lawmakers have expressed initial support. After clearing all panels, it will go to the floor for a vote and then be sent to the Senate.

Mercosur trading bloc members Argentina, Brazil, Chile, Bolivia, Paraguay, and Uruguay have hammered out a blueprint of an understanding to harmonize standards in order to create a regional CNG-vehicles network.



### **81. Chile Plans to Amend Framework Law; Legislation to Be Introduced in December**

Chile's National Environment Commission (CONAMA) in December plans to introduce legislation to substantially reform several aspects of the nation's framework environmental law, an overhaul designed to beef up enforcement, speed up approval of environmental impact assessments, and expand citizen participation.

Chile's 1994 Environmental Framework Law (No. 19.300) set down general aspects of environmental policy, established the nation's environmental institutions, and established several important instruments for environmental management, such as the environmental impact analysis system (known in Spanish by the acronym SEIA) and environmental quality and emissions standards. But the past 10 years have exposed some weaknesses in Chile's environmental policies and regulations, and CONAMA--the government's lead environmental agency--wants to address them.

CONAMA now proposes modifications in three areas: "modernizing" the environmental impact analysis system to make it faster and more efficient; improving enforcement of environmental laws by expanding penalties to include jail time; and developing rules that define what constitutes "environmental crimes" and what types of sanctions should apply.

#### **GENERAL**

### **82. Toyota's Hybrid Push Forces Others to Play Catch-Up**

Toyota Motor, the world's third-biggest auto maker, is forcing its bigger rivals to play catch-up in the race to offer

greener cars. Next week, Japan's top auto maker will unveil a production version of the second-generation gasoline-electric hybrid car "Prius," distancing itself from competitors as it promises better fuel economy and a larger, more comfortable car than its predecessor at the unchanged sticker price of \$20,000.

Since the first Prius debuted in 1997, Honda Motor has been the only other car maker to put mass-market gas-electric hybrids on the road. Later this year, the world's top two, GM and Ford Motor, will begin selling hybrids to fleet customers, and next year offer them to retail customers - seven years behind Toyota.

Gasoline-electric hybrids are the most fuel-efficient mass-market vehicles on the road now, with a four-seater offering between 45 to 52 miles per gallon - about twice that of comparable gasoline-powered cars. Toyota has sold about 150,000 units cumulatively since December 1997, and has promised to offer the powerplant on most of its models in the near future. It hopes to sell 300,000 hybrids a year by 2005. To help reach the target, Toyota is discussing supplying hybrids to other auto makers. It already has an agreement with Japan's Nissan Motor which plans to sell its first hybrid vehicle in 2006. By raising volumes, Toyota hopes to slash the high production costs and make hybrids a de-facto standard for alternative-fuel cars for now. Toyota says its hybrids are already profitable, but Honda says it still makes little, if any, money on them.

Auto industry researcher J.D. Power recently forecast that in 10 years, one in every 20 cars sold in the United States would be a hybrid against one in 442 last year, as the powerplant is offered in a wider range of vehicles. In a few years, competition will be in full swing as

Toyota's share of the U.S. hybrid market drops to 26 percent from half now, while GM takes a quarter and Ford grabs 16 percent, it said.

While the road seems to be mapped out for hybrids in the United States, they are still far from catching on globally. Despite the higher price of petrol elsewhere, hybrids only enjoy mild acceptance in Japan and virtually none in Europe. Europeans are keener on diesel, which is cheaper and more fuel-efficient than gasoline although they emit higher levels of nitrogen oxide and particulate matter.

Despite the highly publicized push by the likes of DaimlerChrysler and GM into the fuel-cell field, Toyota appears to be beating them there too: last December it became the world's first car maker to put a saleable FCV on the road with its own fuel-cell stack. And for the diesel-thirsty drivers in Europe, Toyota is working on diesel-electric hybrids.

### **83. Global Auto Makers Increasingly Looking To Diesels**

As they race to improve the fuel economy of sport-utility vehicles, global auto makers are beginning to think their best bet isn't futuristic technologies but rather a new clean version of the century-old dirty diesel. Diesel engines already are under the hoods of about 40% of the new cars sold in Europe and about half the heavy-duty pickup trucks sold in the U.S.

The auto industry hasn't had much incentive to spend the money to clean up diesels with such low fuel prices in the U.S. but now things are changing. Both Volkswagen and DaimlerChrysler say they'll start selling a small number of diesel-powered SUVs in the U.S. next year. Several other companies, including General Motors Corp. and

Ford Motor Co., also are working to develop diesel engines for their U.S. SUVs.

The industry is under increasing pressure to improve SUV fuel economy, both to reduce reliance on Middle East oil and to fight global warming. At the same time, it's being forced by governments on both sides of the Atlantic to clean up the diesel vehicles it's already selling. New rules requiring cleaner diesel fuel are helping.

Meanwhile, other fuel-efficient technologies have serious drawbacks. Fuel cells are still decades away from the showroom. Hybrids, which combine a downsized internal-combustion engine with an electric motor, sacrifice power for fuel economy. Diesels, on the other hand, deliver something extra with their fuel savings: more power.

If diesels accounted for one-third of all the miles traveled by U.S. passenger vehicles, America would save 1.4 million barrels of oil each day, about what it imports from Saudi Arabia, Jeffrey Holmstead, the U.S. Environmental Protection Agency's assistant administrator for air and radiation, said in a recent speech to an auto-industry conference near Detroit. But there's a very big catch: To get enough diesels under the hoods of American SUVs to make a real dent in fuel consumption, the auto industry will have to get them cleaner. And it will have to do it under severe price constraints.

The administration announced last fall that it would raise the fuel-economy requirements for SUVs, minivans and most pickups to 22.2 miles per gallon in 2007 from 20.7 mpg today, a 7% increase. And the Bush administration has signaled it may further toughen the standards down the road.

VW, Europe's No. 1 auto maker, is

widely credited with popularizing modern diesel cars. Starting in 1976, in the wake of the Arab oil embargo, VW developed a diesel version of its bread-and-butter four-cylinder gasoline engine. VW made a technological leap in 1991, adding turbo-charging to pack more air into the cylinders and direct injection of fuel to mix the two more precisely. The combination began to improve the diesel's torque and to cut down on its emissions. Today, a diesel VW Golf hatchback gets up to about 45 mpg, compared with about 30 mpg for the gasoline version.

In the past few years, GM has worked its way back into the diesel race. In 2000, it rolled out a new version of its eight-cylinder diesel truck engine, called the Duramax, whose smoothness and power have won the company rising share in that market. The same year, GM signed a deal with Italy's Fiat SpA to develop technologies including diesels. About three years ago, GM started working on a diesel engine for U.S. passenger vehicles, including SUVs. The goal is to downsize the eight-cylinder Duramax into a six-cylinder engine that can get about 20% better fuel economy than comparable gasoline models yet still be clean enough to comply with the upcoming EPA rules.

#### **84. World Automakers to Discuss Harmonization Of Standards**

Top global automakers will discuss safety and environmental technology harmonization, including issues related to carbon dioxide emission reductions, at the biannual Tokyo Motor Show in late October, Yoshihide Munekuni, chairman of the Japan Automobile Manufacturers Association (JAMA), said at a Sept. 18 news conference.

The so-called 1998 global technical harmonization agreement was

hammered out as an international agreement for automobile and environmental safety under Working Party 29 (WP29). To date, Japan, the United States, the European Union, Russia, South Africa, and South Korea have ratified the agreement, according to JAMA officials. The agreement essentially provides that signatory nations harmonize country standards on vehicle brakes; noise; lighting; emission inspection methodologies, and other related features.

Japan and the EU are working to harmonize their benchmark country standards in conformity with United Nations Economic Commission for Europe (UN/ECE) regimes, the JAMA officials said. They are scheduled to work out details, such as those related to brakes and emissions, according to WP29 proceedings.

The United States is developing its standards to comply with the 1998 agreement with the federal standard called the Federal Motor Vehicle Safety Standard, as well as local U.S. standards, according to the JAMA officials.

JAMA had proposed that seven Japanese automakers (including Toyota, Nissan, Honda, Mazda, and Mitsubishi), five European automakers (including DaimlerChrysler, BMW, and Peugeot), two U.S. automakers (General Motors and Ford), and one Korean automaker (Hyundai) meet Oct. 22 on the sidelines of the Tokyo Motor Show to discuss priority areas they can coordinate and speed up working out details of the 1998 agreement, the officials said.

One officials said the meeting is being called primarily because none of the harmonization items identified on a draft basis has been worked out for implementation since 1998, one official

said. Other reasons, a separate industry official said, include the concerns automakers in developing nations have regarding cost rises and the fact that other U.N. member nations that manufacture automobiles--such as China, Thailand, Brazil, and Argentina--have not signed the 1998 agreement.

### **85. Ozone Hole Reaches Record Size, U.N. Weather Experts Say**

The ozone hole over the Antarctic this year has reached the record size of 10.8 million square miles set three years ago, the United Nations' weather organization has announced. Measurements over and near Antarctica show that ozone decreased more rapidly this year than in previous years and that the size of the ozone hole is now as large as it was in September 2000, said the World Meteorological Organization (WMO).

The hole, a thinner-than-normal area in the protective layer of gas high up in the Earth's atmosphere, has started forming at the end of Antarctic winter every year since the mid-1980s. In August, when the sun starts to rise again over Antarctica, it triggers accelerated ozone loss following extremely cold South Pole winters when the area remains in darkness.

One cause of ozone depletion is the chlorine and bromine released by manmade chemical compounds such as chlorofluorocarbons, which were contained in some aerosols and refrigerants. Reduction of the ozone layer can let harmful ultraviolet rays from the sun reach the Earth's surface. Too much UV radiation can cause skin cancer and destroy tiny plants at the beginning of the food chain.

In recent years, the ozone hole has tended to near its largest size during mid-September, with the maximum

sometimes reached in late September. Later, it mostly gets filled back in with ozone from the rest of the layer.

This year's phenomenon is in stark contrast to the ozone hole last year, when it was the smallest in more than a decade after splitting in two during late September.

"(It) is larger than the combined areas of Canada, Mexico and the United States and contrasts the exceptionally small ozone hole last year," the WMO said.

Emission of chlorofluorocarbons have been curbed under a global accord. As a result, measurements show they are now decreasing in the lower atmosphere and have just peaked and stabilized in the critically important ozone layer in the stratosphere. Scientists predict it will take about 50 years for the ozone hole to close. According to the United Nations Environment Program, consumption of CFCs, commonly used as propellants in spray cans, dropped from 1.1 million tons in 1986 to 110,000 tons in 2001.

The WMO said that the wider hole in 2003 did not point to any increase in the amount of ozone-depleting chemicals in the atmosphere, but rather was a reflection of changes in weather conditions over the Antarctic.

### **86. S&P Issues Report On Global Truck Industry**

The global truck industry is gearing up for a recovery in 2004 after years of declining demand, according to a report by Standard & Poor's Ratings Services. Commercial vehicle manufacturers have been hard-hit by a cyclical downturn, price and competitive pressures, and tougher legal requirements on emissions, over the past few years. "But demand for medium- and heavy-duty

trucks is now showing signs of potential recovery in the U.S., following reduced concerns about the performance of new diesel engines to meet environmental regulations, and early indications of an improved U.S. economy," said Standard & Poor's credit analyst Maria Bissinger. "The medium- and heavy-duty truck market in Europe is also beginning to show signs of improvement, with predictions of a 5%-8% market recovery in 2004 compared with 2003."

The report analyzes the ways in which global truck makers are preparing for the envisaged upturn: by ramping up their product portfolios; jostling for market position; and increasing component commonality and economies of scale. Further industry consolidation is likely in the industry over the next few years, the report concludes.

Standard & Poor's rates most of the global truck makers. Credit quality varies, with long-term corporate credit ratings ranging between 'AA-' and 'BB-'.

The report, entitled "Global Truck Makers Ready to Shift into Higher Gear," was published on Oct. 22, 2003.

### **87. Researchers Suspect Link Between Brain Cancer, Dirty Air**

Southern California air-quality regulators will team with Cedars-Sinai Medical Center brain surgeons to determine whether air pollution causes brain cancer. A link between air pollution and brain cancer in humans has not been established, air-quality officials cautioned. But brain surgeon Dr. Keith Black, who will head the research effort, said that the scientific and medical communities have reasonable suspicions.

"There are a number of scientific discoveries that have been disturbing,"

Black said during a news briefing in Los Angeles. Tiny particles -- particulates -- from diesel soot have been found to cause cancer in lungs and other parts of the body. Other sources of particulate pollution include cars, factories, dairies and dust. Research on hamsters, rats and dogs has found that the particles pass into the brain through the bloodstream and possibly through tissues between the nasal passages and brain. Some studies of animals have found a correlation between brain cancer and exposure to pollution, said Black, director of the Cedars-Sinai Medical Center's Division of Neurosurgery in Los Angeles.

Many questions about the effects on humans remain unanswered, while research opportunities abound in Southern California's banks of data about cancer and air pollution, he said.

The researchers will expose laboratory animals to air pollutants and then compare the brain tissue of those animals with cancerous tissues removed from the brains of humans. That work is expected to take about a year.

Black said his research team also plans to compare air-pollution data with a cancer registry that tracks where cancer patients live or have lived. That would show whether neighborhoods along freeways and other pollution hot spots have a higher incidence of brain cancer.

Brain cancer disproportionately strikes children. It is the leading cause of death among cancer patients age 19 and younger, Black said. The number of cases has increased about 25 percent since the early 1970s, he said. He is worried, he said, about the pollution particles passing from expectant mothers to their fetuses. The particles are so tiny that it's nearly impossible for people to protect themselves, Black said. They pass right through air-

conditioning filters and the body's own defenses.

Air pollution also might cause brain problems other than cancer, research shows. Last year, research by scientists with the University of North Carolina at Chapel Hill found that dogs raised in highly polluted Mexico City showed neurological damage and brain lesions.

The South Coast Air Quality Management District, which regulates air pollution in Southern California, provided \$559,250 to start the research on the possible brain cancer link. The money came from fines charged to polluters who violate the region's air-pollution regulations. Under a policy approved earlier this year by the air-quality district, 10 percent of the penalty money will go to a brain cancer foundation that the district created in February.

#### **88. Asthmatic Children React To "Moderate" Pollution**

Children with severe asthma start suffering from symptoms even at what are now considered to be acceptable levels of air pollution, U.S. researchers reported Tuesday. Ozone, created by traffic, industry, and oil refining, among other processes, is the prime offender, the researchers wrote in the *Journal of the American Medical Association*. A study of 271 children with asthma living in Connecticut and Massachusetts showed those with the worst asthma started to suffer from shortness of breath, coughing, and chest tightness at "good" air quality levels, as designated by the Environmental Protection Agency.

"Studies of children with asthma living in regions with levels of pollution within or near compliance with EPA air quality standards (120 parts per billion over a

one-hour average ... for ozone) significantly enhances the risk of respiratory symptoms, asthma medication use, and reduced lung function," they wrote.

"An ozone concentration of 63.3 ppb or higher, measured as the maximum eight-hour average on the same day as the reported symptom, was associated with a 30 percent increase in chest tightness," they wrote. If ozone levels reached 52 ppb on the day before, more kids reported a tight feeling in the chest, cough, and trouble breathing.

"We found an immediate, same-day effect of ozone on wheeze, chest tightness, and shortness of breath," they wrote.

In a commentary, George Thurston of the New York University School of Medicine and Dr. David Bates of the University of British Columbia in Vancouver agreed. "Of the many triggers of asthma in the environment, air pollution is one of the few that can be legislated and regulated," they wrote. "Patients and parents of children with asthma should be aware of the ozone alert forecast, which is widely publicized in news reports and listed in the United States on the Internet. Patients with asthma should stay indoors on high-pollution days," they added.

#### **89. Global Warming Conditions Responsible For 160,000 Deaths a Year, Study Says**

A draft study released by two scientific groups Oct. 1 estimated that around 160,000 people a year die from conditions related to global warming, and they predicted that the number of deaths could double by 2020. The report is being hailed by Kyoto Protocol advocates as making the case for the quick ratification of the agreement,

which seeks to limit the emission of greenhouse gasses that some scientists say are responsible for global warming. The study was produced by the Geneva-based World Health Organization and the London School of Hygiene and Tropical Medicine, which found that children in developing countries were the most vulnerable to the effects of global warming.

According to the study, most of the deaths came from malaria, diarrhea, and malnutrition tied to the effects that changing weather has on low-technology agriculture. The problem is only expected to become more serious, the researchers said.

The report estimated that most of the deaths would be in developing countries in Africa, South and Central America, and Southeast Asia.

According to the report, small shifts in temperatures could extend the range of mosquitoes that spread malaria. Changes in rainfall could hurt access to clean drinking water and make agriculture in some areas more difficult.

### **90. Air Pollution May Increase Stroke Risk**

High pollution levels may make people more susceptible to stroke, according to a report in *Stroke: Journal of the American Heart Association*. Researchers collected data on 23,179 hospital stroke admissions from 1997 to 2000 in Kaohsiung, Taiwan – the island's second largest city and heavy industrial area. They compared air pollution levels on the dates of admissions with air pollution levels one week before and one week after admissions, said Chun-Yuh Yang, Ph.D., M.P.H., professor, director and dean at the Institute of Public Health, College of Health Sciences at the

Kaohsiung Medical University.

The researchers found an association between exposure to increasing levels of two common pollutants and hospital admissions for stroke, particularly on warm days, i.e., 20 degrees Celsius or warmer (68 degrees or warmer Fahrenheit).

"Particulate matter (PM10) and nitrogen dioxide (NO2) seem to be the most important pollutants and the effects appear to be stronger on warm days," Yang said.

For each interquartile change – 66.33 microgram per cubic meter change for PM10 and 7.08 parts per billion change for NO2– the risk of hospital admission for primary intracerebral hemorrhage (bursting of a defective brain vessel) increased by 54 percent.

The risk of hospital admission from ischemic stroke (resulting from a blood clot blocking blood flow to the brain) increased by 46 percent for PM10 per interquartile change and 55 percent for NO2 per interquartile change.

Studies have shown associations between air pollution and daily death rates for respiratory and heart disease. But findings related to pollution's effect on stroke have conflicted. Many experts suspect that air pollution may affect blood volume and resistance of the blood vessels and heart structures, known collectively as the hemodynamic system. High temperatures may also affect blood viscosity.

Substantiating these findings with further studies could lead to developing drug interventions that might protect the public from transient exposure to ambient pollutants, such as those experienced during rush-hour traffic.

## **91. Tiny Particles Can Trigger Bronchitis**

Tiny air pollution particles of organic carbon and nitrogen dioxide can trigger chronic bronchitis in children with asthma. That finding is reported in the October issue of the American Journal of Respiratory and Critical Care Medicine.

The study from 1996 through 1999 of 475 children with asthma in 12 southern California communities says organic carbon and nitrogen dioxide deserve greater attention as potential causes of chronic bronchitis in children with asthma.

It also concludes that previous studies may have underestimated the risks that air pollution poses to children with asthma.

Researchers investigated different-sized fractions of particulate organic matter, elemental carbon, nitrogen dioxide and other traffic-related pollutants and their effect on the children with asthma.

Children with a history of wheezing during the year before the study or those with allergies in the past were more likely to report symptoms of bronchitis.

Overall, the study found the children's bronchitis symptoms were associated with the yearly variability in the amount of air pollution particulate matter.

The researchers note that organic carbon accounts for almost half of the fine particulate matter in the Los Angeles air basin. Gasoline and diesel vehicle exhaust is the major source of organic carbon in southern California.