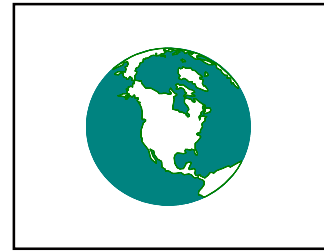


Michael P. Walsh
3105 N. Dinwiddie Street
Arlington, Virginia 22207
USA
Phone: (703) 241 1297 Fax: (703) 241 1418
E-Mail mpwalsh@igc.org
<http://walshcarlines.com>



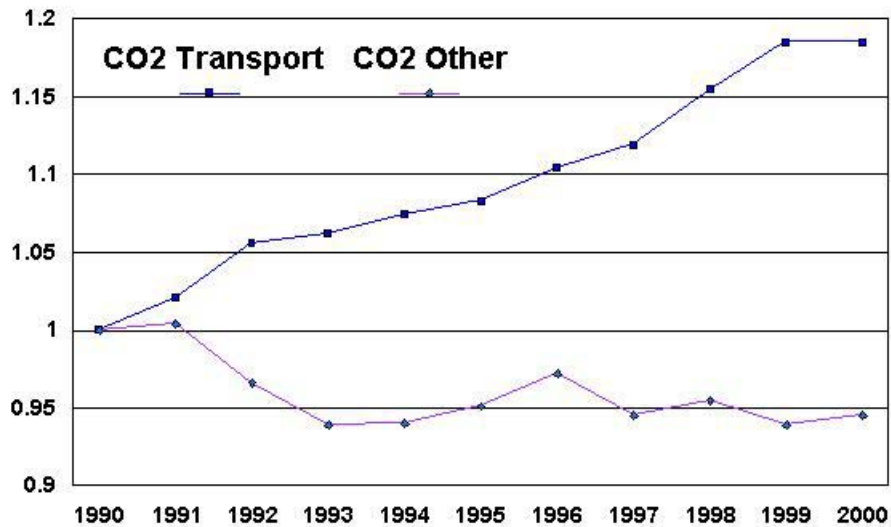
CAR LINES

Issue 2002 - 3

June 2002

Greenhouse Gas Emissions Trends in the EU

(Normalized to 1990)



1. Danish Parliament Ratifies Kyoto Protocol ----- 3
2. EU Reaches CO2 Stabilization Target Despite Recent Upturn ----- 3
3. British Scientists To Probe Climate Change Policy ----- 4
4. European Council of Ministers Overturns Commission Ruling on Tax Breaks for Fuel ----- 5
5. Europe Targets Aviation Industry For Pollution Levy ----- 6

6. EU Ratifies Global Warming Pact, Slams Washington ----- 7

7. Iceland Continues Push Toward Hydrogen Future----- 8

8. German Carmakers Plan Joint Hydrogen Car Tests----- 9

9. Italy Plans Incentives to Boost Development, Purchases of Environmentally Friendly Cars-10

10. EU Rejects Requirements for Use Of Biofuels in Diesel Fuel, Gasoline-----10

11. Urban Sprawl Up, Air Pollution Down in EU -----11

12. EPA's Diesel Emission Standards Upheld -----11

13. Oil Industry Seeking to Expand Scope of EPA's Diesel Sulfur Review Panel; States and Environmentalists Opposed -----12

14. Court Denies Emergency Injunction To Bar Mexican Trucks on U.S. Highways -----13

15. Bush's Pick For EPA Enforcement Chief Challenged -----14

16. Ottawa Hints At Kyoto Withdrawal -----15

17. Lobbyist Barbour Wrote to Cheney Just Before Kyoto Policy Shift -----16

18. Report Finds Smog To Be A Killer in LA-----17

19. GM Moves Closer To Fuel Cells With New New York Plant-----17

20. Cleaner Off-Road Diesel Vehicles May Save 8,500 Lives; EPA Says Top Environmental Priority -----18

21. Environmental, Health Communities Seriously Question EPA/OMB Collaboration-----19

22. EPA Report Concludes That Engine Makers, Refiners Can Meet US Diesel Rule -----20

23. Truckers Press EPA To Reopen 2004 Rule -----21

24. Mexico Must Crack Down On Diesel Trucks Says Scientist -----22

25. Air Board Passes Stronger Particulate Matter Standards -----23

26. EPA To Continue Development Of PM Air Quality Standard While Statistical Error is Reviewed By HEI-----24

27. EPA and CARB Developing Plans For Manufacturer Run, In Use, Heavy Duty Vehicle Testing Program-----25

28. US Government Report Blames Humans For Global Warming; Bush Blames Bureaucrats26

29. EPA Chief Says What Report?-----28

30. Comparison of US Senate, House Energy Bills-----28

31. US Senate Panel Passes Four Pollutant Bill -----29

32. Judge Suspends California's 2001 ZEV Regulations-----30

33. US Planning To Phase Out Hybrid Car Tax Credit-----31

34. GAO Warns MTBE Fuel Leaks In Water More Widespread -----31

35. GM, Suzuki Exploring Electric Vehicles-----32

36. New York Getting Greener Thanks To Truckers-----32

37. Japanese Government Pledges To Buy Fuel Cell Vehicles -----33

38. Joint Study on Air Quality of Pearl River Delta Region Released -----33

39. Korean Authorities Seen Easing Stance On Diesel Car Ban -----34

40. Shell Australia To Spend A\$100 Million On Refinery-----35

41. PetroChina Plans Two Gas Pipelines to Beijing -----35

42. Australia Has Hottest April On Record -----36

43. Thailand "Postpones" Coal-Fired Plants-----36

44. Japan Ratifies Kyoto Pact, Urges Others To Follow; Australia Says No -----37

45. The Report on the State of Environmental in China 2001 Released by SEPA-----37

46. Beijing To Adopt Euro 2 Standards One Year Early-----38

47. Action Plan Developed For The Phase -Out Of Leaded Gasoline in East Africa -----38

48. Diesel Soot Added To List of Global Warming Culprits -----40

49. Antarctic Ice Melt Poses Worldwide Threat-----41

50. New Swedish Study Highlights Benefits of PM Filters -----43

51. New Study Links Air Pollution and Children's Health-----44

52. UNEP Says World Facing Critical Choices On Environment -----45

53. Global Warming Blamed For Melting Everest Glacier-----46

54. Revision To Worldwide Fuel Charter To Focus on Elimination of Lead-----46

55. Appendix A: Summary of 2007 Truck Court Decision-----48

EUROPE

1. Danish Parliament Ratifies Kyoto Protocol

The Danish parliament voted with a big majority to ratify the Kyoto climate treaty, which will oblige the country to sharply cut by 2012 its emissions of greenhouse gases blamed for global warming. "This ambitious commitment strengthens Denmark's position as frontrunner with regard to international environmental agreements," Denmark's Environment Minister Hans Christian Schmidt said in a statement.

Ahead of a summit on sustainable energy due to be held in Johannesburg in September, European Union environment ministers have pledged to ratify the treaty by the end of May. The 15-member EU has led an offensive to persuade other industrialized countries such as Russia, Canada and Japan to ratify the treaty since the United States pulled out of Kyoto last year.

Denmark takes over the six-month rotating EU presidency on July 1.

The treaty must be ratified by at least 55 countries representing 55 percent of developed countries' carbon dioxide emissions to come into force.

The Danish vote means 55 countries have now ratified it, according to U.N. data.

2. EU Reaches CO₂ Stabilization Target Despite Recent Upturn

The European Union remains on track to achieve its long-standing commitment to stabilize emissions of carbon dioxide (CO₂) - the main "greenhouse" gas responsible for man-made global climate change - at their 1990 level by 2000, despite an emissions upturn in the

final year of the period. Total CO₂ emissions from the 15 EU Member States were 0.5% lower in 2000 than 10 years earlier, the latest emissions inventory from the European Environment Agency shows.

Less positive, however, is that EU emissions of CO₂ and other greenhouse gases rose between 1999 and 2000, the most recent year for which EU-wide data are available. CO₂ accounts for around 80% of the EU's total greenhouse gas emissions. CO₂ emissions taken alone increased by 0.5% in 1999-2000, while emissions of CO₂ and the five other gases controlled by the Kyoto climate change Protocol together rose by 0.3%.

Under the Kyoto Protocol the EU is required to cut its combined emissions of the six gases to 8% below their 1990 level by the years 2008-2012.

The latest inventory shows that in 2000 total EU greenhouse gas emissions stood 3.5% below their 1990 level. In 1999 they had been 3.8% lower, according to the most recent estimates.

One of the main reasons for the overall emissions rise from 1999 to 2000 was a 2.4% increase in CO₂ emissions from electricity and heat production, due in part to an expansion of power generation from fossil fuels, especially coal, in the UK, the EU's second-largest emitter. Another reason was continued growth in greenhouse gas emissions in Greece, Spain, Ireland, Italy and Belgium.

The year-2000 figures mean that more than half of the European Union countries are still heading towards overshooting their agreed share of the EU's greenhouse gas emissions target by a wide margin. This is the case for Austria, Belgium, Denmark, Greece,

Ireland, Italy, the Netherlands, Portugal and Spain.

Spain is furthest away from keeping to its share of the EU target: its emissions in 2000 stood 33.7% higher than a decade earlier, more than double the 15% increase it is allowed between 1990 and 2008-2012.

At the other end of the scale Germany, the largest EU emitter, has achieved the greatest emissions cut among the big Member States, recording a 19.1% decrease over the decade. This is not far off the 21% reduction from 1990 levels that Germany is required to show by 2008-2012.

If transport were not included, there would have been a clear downward trend in CO₂, N₂O and methane across the EU. However, over the decade N₂O from transport approximately doubled and CO₂ increased by about 20%.

In October 1990 the EU committed itself to holding its year-2000 CO₂ emissions at or below their 1990 level. It formalized the commitment when it signed the UN Framework Convention on Climate Change (UNFCCC) in June 1992.

The 1997 Kyoto Protocol to the UNFCCC will control industrialized countries' emissions of CO₂, methane (CH₄) and nitrous oxide (N₂O), plus three fluorinated industrial gases: hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF₆). The EU is responsible for around 24% of industrialized countries' man-made emissions of the six gases. The EU hopes the Protocol will receive enough ratification to enter into force by the time the UN World Summit on Sustainable Development takes place in August-September 2002 in Johannesburg.

A "burden-sharing" agreement between

EU governments lays down differentiated emissions limits for each Member State with the aim of ensuring that the EU meets its overall 8% reduction commitment under the Protocol.

3. British Scientists To Probe Climate Change Policy

British scientists have launched an investigation to see if the government should introduce new economic measures to deal with climate change, because it says the current policy isn't working. The probe by the Royal Society, an independent academy, will look at alternative ways to reduce greenhouse gas emissions, including the possible introduction of a carbon tax.

It said the government's Climate Change Levy is flawed because it taxes energy use and not pollution from carbon dioxide (CO₂). Neither has it reduced emissions of the greenhouse gas. Introduced in April 2001, the Climate Change Levy is a tax on commercial and industrial consumers on the electricity they use. It is designed to improve energy efficiency and is part of the government's plan to reduce emissions of greenhouse gases.

The probe, which will be completed by the summer, is launched ahead of a government consultation document on general energy policy expected next month. It comes just days after a government report said rising sea levels, droughts and floods will ravage the British Isles by the end of the century as climate change accelerates faster than expected.

The society's investigation will look at different economic ways to reduce greenhouse gases and whether a carbon tax will push up electricity and petrol prices.

Under the Kyoto Protocol, a global pact to cut emissions of greenhouse gases such as carbon dioxide, Britain aims to cut CO2 emissions by 12.5 percent from 1990 levels by 2010.

4. European Council of Ministers Overturns Commission Ruling on Tax Breaks for Fuel

In a decision that could make the European Commission's efforts to crack down on unfair tax competition and promote a sustainable transport policy more difficult, European Union member states invoked a rarely used procedure in the Council of Ministers May 3 to overturn a ruling by the EU executive body that tax breaks on fuel for truckers are illegal state aid. The 15 EU member states voted unanimously to bypass a Commission ruling, which had said that fuel tax breaks given to road transport companies after they blocked traffic due to skyrocketing gasoline costs were in violation of EU subsidies laws.

France, Italy and the Netherlands gave tax breaks to haulers in response to truckers' protests at soaring fuel prices in 2000 when oil was trading at around \$30 a barrel - subsidies the European Commission said were illegal. The Commission, the EU's executive arm, has told Germany to phase out its coal aid completely by 2010 because such subsidies distort the bloc's single market.

Member states banded together to override the Commission's misgivings in a trade-off that satisfied a range of their own national interests but left a major question mark over the bloc's environmental priorities.

Under the United Nations Kyoto treaty on climate change, the EU must cut its greenhouse gas emissions by eight percent of 1990 levels by the end of the decade. Most of those emissions come

from burning fossil fuels for energy and transport.

Germany insists its coal aid - which peaked at 11.3 billion marks (5.78 billion euros) in 1989 and is 5.7 billion marks this year - protects jobs and secures a key energy source, even though emissions from coal are far higher than from oil or gas.

But the European Environmental Bureau (EEB), a coalition of environmental campaign groups, decried the coal-diesel bargain. The EEB wants all environmentally harmful subsidies to industry, transport and agriculture phased out by 2005 and the money used for cleaner energy such as wind and solar, and social restructuring in rust belt areas. As well as cutting fossil fuel subsidies, the EEB wants governments to increase tax on non-renewable fuels and ease the blow on industry by reducing taxes on employment.

Plans for an EU-wide strategy on energy tax have been drawn up and shot down over the last 10 years as certain member states hang on to their sovereign rights on fiscal policy. But at a summit in Barcelona in March, EU leaders said they wanted to adopt a Commission proposal on minimum tax levels for energy, as a counterweight to the liberalization of gas and electricity markets, meant to bring down prices.

The Commission plan, dating from 1997, is to gradually raise EU-wide minimum tax levels on oil products, and introduce EU minima for the first time on coal, gas and electricity.

Initially, Spain strongly opposed the move, but it relented when Germany and France agreed in Barcelona to push ahead with energy liberalization, which Madrid wanted. All member states have the right to veto tax proposals. As holder

of the EU's rotating presidency, Spain wants to make progress. But disagreements over issues such as tax rebates for energy-intensive industries, private homes and certain types of transport remain to be resolved.

Many EU countries already use national energy taxes to pursue environment policy goals, but environmentalists want EU-wide standards to lessen market distortions.

The member states reached their unanimous decision only several hours before the deadline would have expired. It did so only after giving other member states--including Germany, Belgium, Austria, and Spain--a quid pro quo that their own subsidies in other areas would get similar support, a Council of Minister official said.

These include subsidies for coal miners in Germany and Spain, insurance companies in Belgium, and limits on road traffic allowed to pass through Austria.

Despite the vote, the Commission tried to downplay the impact it will have on other state aid investigations.

5. Europe Targets Aviation Industry For Pollution Levy

Europe is moving towards slapping charges on jet fuel, the fastest growing source of greenhouse gas emissions, ending the fuel's tax-free status and raising the cost of air travel. The new levy could add 15 euros (\$13.55) to ticket prices within the European Union within three years, hitting no-frills carriers. If implemented, the charge could pave the way for a global tax on the fuel, which has been exempt since the Second World War to encourage the airline industry.

The EU is waiting for a report

commissioned last year looking at a range of options from a straight fuel tax to a permits system that penalizes polluting airlines.

Aviation causes 3.5 percent of man-made global warming, according to the Inter-Governmental Panel on Climate Change. This could rise to 15 percent by 2050.

Airline fuel is exempt from tax because of a 1944 agreement to promote the fledgling aviation industry. It has also escaped being included in the Kyoto protocol on greenhouse gases because of difficulties in allocating emissions between countries. Motor fuels on the other hand are taxed heavily and taxes make up 80 percent of the retail price of gasoline in the UK.

The world's 16,000 commercial aircraft pump about 600 million tons of carbon dioxide into the atmosphere every year and the Inter-Governmental Panel on Climate Change in 1999 predicted a sharp rise in air transport. The study projected jet fuel consumption to triple in 50 years from today's 150 million tons.

U.S.-Europe routes account for 80 percent of all flights worldwide.

Many governments will oppose a tax on the basis that it will slow economic growth and hit airline profitability.

The International Air Transport Association (IATA) which groups 95 percent of the world's airlines says imposing a fuel tax or charge will not help resolve the problem of emissions but will exclude some segments of society from air travel. IATA says airlines have already taken steps and fuel efficiency has improved by 17 percent between 1990 and 2000.

6. EU Ratifies Global Warming Pact, Slams Washington

All 15 European Union nations ratified the Kyoto protocol against global warming as a bloc in early June and used the occasion to slam Washington - which has shunned the treaty - for failing to do its part. At a ceremony at U.N. headquarters in New York, representatives of all 15 EU nations and the European Commission handed papers from their respective nations to U.N. Chief Legal Counsel Hans Corell, signifying their national legislatures had approved the pact. U.N. Secretary-General Kofi Annan hailed the ratifications as "good news for the entire world" while Wallstrom called the ceremony "an historic moment for global efforts to combat climate change."

But Washington now had to pitch in, Wallstrom said.

"The United States is the only nation to have spoken out against and rejected the global framework for addressing climate change. The European Union urges the United States to reconsider its position," she said. "All countries have to act, but the industrialized world has to take the lead."

The ceremony came while ministers representing the United Nations' 189 member-nations worked in Bali to complete preparations for a follow-up meeting to the Earth Summit opening in Johannesburg, South Africa, in August. A top goal of the coming World Summit on Sustainable Development is to ratchet up the fight against global warming, but environmental groups accuse Washington of trying to water down the action plan to be adopted at the summit's close.

Just a few months from Johannesburg, "Europe has confirmed its determination to meet its responsibilities to protect the

world environment," French President Jacques Chirac said in a statement issued in Paris.

To take effect, the pact must be ratified by at least 55 nations representing 55 percent of developed countries' carbon dioxide emissions. Seventy nations have now ratified, representing 26.6 percent of wealthy nations' emissions. Of the 41 nations that have signed but not yet ratified, Japan has given notice it would ratify shortly and Russia was expected to ratify by the end of the year, which would give the protocol the necessary 55 percent, Wallstrom said.

Dutch Environment Minister Jan Pronk also pressed Canada to ratify, saying it was key to the effort. Canadian Prime Minister Jean Chretien said this month his country would not act until certain aspects of the treaty were clarified.

The European Union as a bloc is on course to meet its target of reducing greenhouse gases by 8 percent from 1990 levels, but the picture is patchy across the bloc. Total EU emissions were down 3.5 percent in 2000, according to data issued last month by the European Environment Agency. But many member states are finding it tough to meet their individual targets as set under a "burden sharing" agreement. That agreement allowed Spain to increase its emissions by 15 percent, but its emissions were already up 33.7 percent by 2000. Eight other EU countries were also falling short of the necessary emissions cuts, the agency said.

The biggest EU cuts have been made by Britain and Germany, two of the biggest EU economies, which have reduction targets of 12 percent and 21 percent respectively, Britain has slashed carbon dioxide emissions by 12.5 percent by using less coal and more natural gas to generate electricity.

Germany's emissions fell by 19 percent, largely due to the closing of inefficient and dirty industry in the former communist East.

Environment ministers at the ceremony were: Noel Dempsey of Ireland, Jan Pronk of the Netherlands, Jaume Matas Palou of Spain and Kjell Larsson of Sweden as well as Rainer Baake, Germany's environmental state secretary, and Karsten Skov, Denmark's deputy director for environment.

U.N. ambassadors were: Gerhard Pfanzelter of Austria, Jean de Ruyt of Belgium, Sir Jeremy Greenstock of Britain, Marjatta Rasi of Finland, Jean-David Levitte of France, Adamantios Vassilakis of Greece, Sergio Vento of Italy, Hubert Wurth of Luxembourg and Francisco Seixas da Costa of Portugal.

Margot Wallstrom, the European Commissioner for the Environment, represented the European Commission.

7. Iceland Continues Push Toward Hydrogen Future

Iceland, an island of lava on the edge of the Arctic, is proceeding with plans to become the world's first society to eliminate fossil fuels entirely, relying instead on hydrogen made using the power of its rivers and volcanoes. Enthusiasts even talk about it one day becoming the "Kuwait of the North" as an exporter of the new, green fuel to markets in Europe.

In the future, Iceland's cars, buses and ships will be driven by electric motors powered by hydrogen-fuel cells that produce nothing but water in their exhausts. Unlike other countries contemplating hydrogen power, Iceland has a chance to develop a genuinely carbon dioxide-free system, since the electricity to make hydrogen from the

electrolysis of water will come from hydro or geothermal power, not fossil fuel.

A. Buses Due Soon

Icelanders will get their first taste of the new era next year when three hydrogen-powered buses hit the road. That is a year later than originally planned, because nine other European cities want to join in the bus experiment, requiring a bigger production run. In cities like Madrid, Amsterdam and Hamburg, hydrogen buses will represent only tinkering at the edges. For Iceland, it is the start of something much bigger.

Converting all the country's 180,000 vehicles and 2,500 fishing trawlers to hydrogen won't happen overnight - Iceland is giving itself 30-40 years to kick the oil habit completely - but the launch of the energy plan a year ago was a watershed.

The scheme is backed by DaimlerChrysler, which will build the first buses, together with energy giant Royal Dutch Shell and Norwegian industrial group Norsk Hydro. All three firms have invested in a new company called Icelandic New Energy and plan to use Iceland as a test-bed for a technology that some scientists think holds the key to mankind's energy needs after the oil runs out.

While technical problems remain, the technology of fuel cells has advanced by leaps and bounds in the last 10 years. At an oil price of \$20 a barrel, Icelandic hydrogen would be two or three times as expensive as gasoline but this is balanced by the fact that fuel cells are two to three times more efficient than internal combustion engines.

B. Very High Per Capita Greenhouse Gases

Iceland's large fishing fleet and energy-intensive metal smelting industry make it one of the world's largest per-head producers of carbon dioxide and other greenhouse gases. That is a major frustration for a country which takes its environmental commitments seriously, yet has few options for expanding its economy.

Switching Iceland's vehicles and ships - which today account for two-thirds of carbon dioxide emissions - from fossil fuels would give a lot more flexibility to build up industry while still meeting Kyoto Protocol guidelines. The government is champing at the bit to expand the industrial base. Only last week, it announced the start of formal talks with Alcoa on construction of a new 320,000-ton smelter that would double aluminum production.

C. Storage Problems Remain

With its cheap energy resources, Iceland has a chance to lead the world in the coming hydrogen economy. Running tankers full of liquid hydrogen from Iceland to markets in Europe is one option, although any surplus from the tiny domestic economy means Iceland would probably never supply more than a small European market, such as Denmark.

Meanwhile, there are some major technical issues to resolve.

Safety is one. The image of the 1937 Hindenburg airship disaster is hardly reassuring, although experts argue that hydrogen is no more explosive than gasoline and the Hindenburg's flammable casing, rather than hydrogen,

was largely to blame. But storing the lightest element in the universe in a convenient form remains a big problem.

BMW is planning to develop cars that would carry it as liquid, but most other carmakers think gas under pressure makes more sense. Either way, the storage tank will be bulky. That may be surmountable for buses but it is major headache for cars and Iceland's fishing trawlers, which need to carry enough fuel for several weeks.

One intermediate-stage option being examined in Iceland is to store hydrogen in methanol, which could be synthesized using carbon dioxide emitted by the metals industry. It is not a perfect solution since burning the methanol would still release some greenhouse gases. But it could be a useful halfway house while the country waits for long-term storage solutions, such as carbon nanotubes.

8. German Carmakers Plan Joint Hydrogen Car Tests

A group of leading German carmakers and engineering firms plan to set up a joint project to test hydrogen fuel cell vehicles and other cars powered by "clean energy". The project, bringing together DaimlerChrysler AG, BMW AG, GM unit Adam Opel AG, and Ford's German research center, will set up a hydrogen refueling center in Berlin and a fleet of 30 cars to test the new technologies. European carmakers have been investing in green technology to safeguard their long-term survival against the risk of fossil fuels running out and increasing government pressure to build cars that damage the environment less.

The five-year program has similarities to one set up in California two years ago to test fuel cells, which use hydrogen to create electricity, but the German

project, part funded by the government and also involving fuel station company Aral, engineering company Linde and trucks and engineering firm MAN , may also test other fuels such as methanol and synthetic diesel.

DaimlerChrysler, seen by experts as a leader in fuel cells, will have invested \$1 billion in the technology in the 14 years to 2004 and plans to produce small numbers of fuel cell powered buses from next year and cars by 2004. But problems involved in the transport and storage of hydrogen and the lack of any infrastructure have raised doubts as to its viability.

Diesel engines, which emit up to 30 percent less carbon dioxide than petrol engines, have proved popular in Europe in recent years, although the fuel has high nitrogen oxide and particles emissions.

9. Italy Plans Incentives to Boost Development, Purchases of Environmentally Friendly Cars

The Italian government has promised to create an incentive plan to encourage research into development of environmentally friendly vehicles and is planning a series of rebates and tax incentives for buyers of those vehicles. The plan, which was announced May 30 by Prime Minister Silvio Berlusconi, was short on specifics.

The incentives are for any zero-emissions vehicles, with partial incentives available for low-polluting cars that produce less than half of the emissions of the most "green" traditional vehicles currently on the market.

The president of Lombardy, Italy's most populous region, had previously announced in January that his region

would completely outlaw the sale and registration of gasoline- and diesel-powered vehicles in the region no later than the start of 2006.

10. EU Rejects Requirements for Use Of Biofuels in Diesel Fuel, Gasoline

The European Union nations rejected a proposal June 8 that would have established mandatory requirements on the use of biofuels in all diesel fuel and gasoline sold in the 15 member states by 2010. Instead, the member states, meeting at Council of Energy Ministers, agreed to nonbinding targets that will establish a voluntary threshold of 2 percent of biofuels in diesel and gasoline by 2005 and 5.75 percent by 2010.

Of the 15 member states, only Austria, Spain, and Italy could agree to the mandatory targets.

The European Environment Bureau (EEB) came out against the promotion of biofuels from dedicated agricultural plantations. Firstly, they argued, the Commission seems to favor mostly those fuels that are usually produced from intensively farmed annual crops, such as rapeseed, sugar beet and wheat without setting up a plan for the development of new and promising technologies to produce biofuels, such as technological innovation, which enables the cost-effective production of ethanol from cellulose.

Further, the Commission estimates that 8 percent of the fuel market can be substituted by biofuels when 10 percent of the agricultural area of the EU (corresponding to 14 million hectares of agricultural land) would be dedicated to the cultivation of biofuel crops. The EEB thinks that the use of such an enormous amount of land for biofuel production cannot be justified when there are so many better uses for this land, such as

fodder production for the Union's livestock to improve food safety, the extensification of agricultural production, or even the production of biomass for the generation of heat and power.

EEB argues that given the predicted annual growth of the transport sector of 2 percent (and without a firm policy to improve fuel efficiency at the same rate) this maximum substitution of 8 percent would be offset in less than four years by the growth in transport volume!

Finally, the EEB doubts that this proposal will lead to any substantial savings in greenhouse gas emissions due to not only the fossil fuels required for the production of biofuels but also the fact that the growing of the agricultural crops required will produce one of the most powerful greenhouse gases, N₂O from fertilizers.

11. Urban Sprawl Up, Air Pollution Down in EU

Over fishing, urban sprawl and increased energy consumption are some of the main dangers facing the European Union's environment, according to a report from the EU's environment agency. The snapshot of the state of the EU's environment held some good news: air pollution is down, waste management is improving and the EU is on track to meet its international commitment to cut greenhouse gas emissions blamed for causing global warming.

But some countries and economic sectors are letting the side down by failing to clean up their act, "Environmental Signals 2002", the report by the European Environment Agency showed.

EEA Executive Director Domingo Jimenez-Beltran said there was a north-south divide in the EU where

Mediterranean countries are less effective in protecting their environment.

Spain, Italy and Portugal were all increasing their energy consumption faster than economies were growing, the report showed - leading to big increases in greenhouse gas emissions. In northern Europe, Belgium was the only EU state guilty of increasing "energy intensity", a ratio measuring the amount of power used in production.

Published a day ahead of a meeting of EU environment ministers in Majorca, Spain, to discuss the threats of soil degradation, the report highlighted the problem of soil sealing - covering up open land with cities and roads.

While the region's population has increased by only six percent in the last 20 years, the area of built-up land has increased by 20 percent, it found, indicating the EU was failing to reuse urban sites for building.

NORTH AMERICA

12. EPA's Diesel Emission Standards Upheld

A federal appeals court unanimously upheld a Clinton administration regulation requiring a speedy and dramatic reduction in pollution from large trucks and buses, whose emissions have been implicated in thousands of premature deaths and illnesses annually.

The Bush administration had strongly supported the toughened rules, and environmental organizations credited Environmental Protection Agency Administrator Christine Todd Whitman for fighting for what they described as a crucial clean-air action.

The regulations will require refiners to produce virtually sulfur-free diesel fuel beginning in 2006. In 2007, half of new

trucks will have to meet stricter emission control standards. All new diesel engines will be covered by 2010.

The ruling is good news for urban areas facing federal deadlines for reducing harmful ozone, or smog. The regulations will sharply curb tailpipe emissions of nitrogen oxide, which mixes with other volatile compounds to produce ozone. Many communities have argued that they cannot meet the EPA ozone standards unless heavy trucks and coal-burning utilities clean up their pollution.

A three-judge panel of the U.S. Court of Appeals for the District of Columbia Circuit accepted that argument, rejecting claims by engine manufacturers that the technology is not available to meet the tougher tailpipe emission requirements so quickly.

The National Petrochemical & Refiners Association, which appealed the EPA regulation directly to the appeals court, said in a statement that it was disappointed with the decision.

The ruling was foreshadowed in March when the same appeals court rejected arguments that the standards issued by the Clinton administration in 1997 for smog, soot and other pollutants had been enacted arbitrarily. The latest ruling is a step toward meeting those standards.

The case produced a complex political situation among industry sectors, pitting the refining industry against automobile manufacturers. The automakers strongly advocated tough requirements for diesel refiners, and charged that slower implementation would keep some vehicles from meeting the new emission standards by 2007.

Officials said it was unclear what, if any, impact the standards would have on diesel fuel mileage.

In announcing her support for the Clinton standards last year, Whitman said they would have far-reaching implications. She said:

"Once this action is fully implemented, 2.6 million tons of smog-causing nitrogen oxide emissions will be reduced each year. Soot or particulate matter will be reduced by 110,000 tons a year. An estimated 8,300 premature deaths, 5,500 cases of chronic bronchitis and 17,600 cases of acute bronchitis in children will also be prevented annually. It is also estimated to help avoid more than 360,000 asthma attacks and 386,000 cases of respiratory symptoms in asthmatic children every year. In addition, 1.5 million lost work days, 7,100 hospital visits and 2,400 emergency room visits for asthma will be prevented."

Judges Stephen Williams, David Sentelle and David Tatel handed down the decision.

A more detailed summary of the decision is attached as Appendix A.

13. Oil Industry Seeking to Expand Scope of EPA's Diesel Sulfur Review Panel; States and Environmentalists Opposed

Oil industry representatives are pushing EPA to expand the scope and composition of the Clean Diesel Independent Review Panel, a federal advisory panel convened to review the progress in meeting the requirements of the Agency's 2007 on-road HDE standards/diesel sulfur limits rulemaking. Oil industry representatives are claiming that EPA has limited the scope of the panel's review authority and that EPA has structured the panel so it has too few people with expertise on the issue, instead stacking it with

state and environmental representatives who will likely ignore industry concerns.

The Clean Diesel Independent Review Panel is charged by EPA with reviewing the progress of: 1) the manufacturers of diesel engines and emission control systems in developing technology to reduce engine exhaust pollutants and 2) the fuels industry in developing and demonstrating technologies to effectively lower the sulfur level of diesel fuel. In an April 26th letter to EPA, the American Petroleum Institute (API) outlined concerns with EPA's directive to the panel, saying three issues are noticeably absent: 1) there needs to be an examination of the likelihood that adequate supplies of ultra-low sulfur diesel will be available; 2) the Panel needs to address the problems and downgrades associated with delivering ULSD to the market in 2006; and 3) the Panel needs to address the rule's sulfur credit trading system.

Environmentalists said that this latest move by the oil industry is simply another attempt to undermine the 2007 clean diesel program, noting that the U.S. District Court for the District of Columbia Circuit unanimously rejected all legal challenges to EPA's landmark rule earlier this month.

In a May 20 letter to Administrator Whitman, the coalition noted "We want to make it very clear, as we have previously told your chief of staff, that we have full confidence in the agency's ability to conduct its own fair and impartial internal technical review of the

highway diesel sulfur rule and related heavy-duty engine standards. As a result, we see no pressing need to convene an "independent" panel to duplicate the agency's efforts. We believe our view was bolstered by the recent decision by the U.S. Court of Appeals for the D.C. Circuit, which rejected industry challenges to the standards.

Despite our reservations about the need for an independent panel, we have agreed to serve on it in the interests of cooperating fully with you. However, we vehemently oppose any effort to alter the composition of this panel or change its mission."

The first meeting of the Panel took place on May 23rd.

14. Court Denies Emergency Injunction To Bar Mexican Trucks on U.S. Highways

A U.S. district court May 2 denied an emergency request by environmental, public interest, and labor groups to block the U.S. administration from finalizing safety rules that would permit Mexican-domiciled motor carriers to travel throughout the United States. The emergency request, filed May 1 in the U.S. District Court for the Northern District of California, alleged the administration of U.S. President George W. Bush violated the National Environmental Policy Act and the Clean Air Act. The groups sought a temporary restraining order to keep rules issued by the Federal Motor Carrier Safety Administration (FMCSA) from taking effect May 3.

The rules issued by FMCSA on March 19 establish the application process for Mexican trucks seeking to travel on U.S. highways and safety standards for the trucks.

The suit filed by Public Citizen, the Environmental Law Foundation, the Teamsters Union, and others contended that administration transportation officials completed an environmental assessment for opening the border to Mexican trucks under the North America Free Trade Agreement but failed to complete an environmental impact study.

Mexican trucks are not subject to the same controls on emissions as U.S. trucks, and the groups filing suit want the government to conduct a study "so that significant public health concerns about these trucks can be fully addressed before they are allowed throughout the country," according to a statement issued by the Teamsters.

Specifically, the plaintiffs said DOT officials failed to consider the long-term effects the trucks will have on U.S. air quality, the differences in emission rates between U.S. and Mexican trucks over a 20-year period, and the effects added border safety inspections would have locally.

As part of the \$59 billion fiscal 2002 transportation spending law, Congress included a number of safety provisions to guide Mexican trucking firms as their carriers begin to move outside the 20-mile commercial zone onto all U.S. highways. Mexican trucks are prohibited from traveling throughout the United States until the federal government carries out a safety examination of all Mexican motor carriers with more than three vehicles, gives each motor carrier a satisfactory rating, electronically verifies the status and validity of Mexican drivers' licenses for each carrier, and gives a distinctive DOT number to each truck crossing the border.

15. Bush's Pick For EPA Enforcement Chief Challenged

The Bush administration's choice for the top cop to enforce the nation's environmental laws came under attack at a Senate hearing for not having enough job experience. Some Democrats said John Suarez was unqualified to serve as head of the Environmental Protection Agency's enforcement office because he has no experience in environmental law.

Suarez spent three years as Commissioner for New Jersey's Division of Gambling Enforcement, and before that served seven years as an assistant U.S. attorney in New Jersey where he focused on white-collar crimes such as mail fraud. At a Senate Environment and Public Works Committee hearing, lawmakers questioned whether Suarez's nomination indicated the administration was not committed to going after companies that violate federal environmental laws.

"We need someone with an environmental enforcement record," said Sen. Barbara Boxer, a California Democrat. "We are not happy with the (EPA) enforcement we see," she added. Boxer said Suarez was a "fine lawyer," but his previous jobs did not give him the experience needed to enforce air, water and land pollution laws.

Sen. James Jeffords, the Vermont independent who chairs the environmental panel, also wondered how Suarez could enforce EPA regulations with such limited experience.

Suarez said he would seek the advice of EPA staff in pursuing violations. "I will continue to learn the law," he said.

Hinting at his approach to enforcement, Suarez said he would support programs that allow companies to voluntarily admit

to environmental law violations and then permit the firms to take remedial actions. Environmental groups oppose such programs, arguing that companies can't be trusted to police themselves.

Suarez also promised to prosecute companies that violate the EPA's so-called "new source review" regulations. The rule requires power plants, refineries and other industrial sites to install expensive pollution control equipment when new facilities are built or existing plants are modified. The rules are currently being re-written by the Bush administration, and are expected to be weakened.

A coalition of environmental groups, including the Sierra Club, American Rivers and Friends of the Earth, said Suarez was the least qualified person to be considered to head EPA's enforcement office in the last 15 years.

"There is no evidence that Mr. Suarez has ever dealt in any aspect of the enforcement of state or federal environmental laws," the groups said in a letter to Jeffords.

16. Ottawa Hints At Kyoto Withdrawal

Canada has unveiled proposals on how to ratify the Kyoto climate change protocol without "crippling" the economy and dropped a large hint that it could follow Washington's lead and abandon the treaty. The federal government, already deeply split over Kyoto, is under heavy pressure from energy producers and business groups to ditch what they say would be a ruinously expensive treaty.

Canada has already abandoned plans to ratify Kyoto this year and is now pressing to be given credit under the scheme for the clean energy it exports to the United States, which walked away from the protocol last year.

Despite the best efforts of Prime Minister Jean Chretien and Environment Minister David Anderson, the European Union firmly rejects the idea.

Ottawa, which has consistently said the fate of the clean energy credit idea will play an "important" part in its decision as to whether to ratify Kyoto or not, has notably toughened its position recently.

"(Getting) credit for cleaner energy exports to the United States will be a critical factor informing Canada's ratification decision," it said in the document, which contained four proposals for implementing Kyoto. But the fourth proposal, the one that the government clearly favors, assumes Canada would succeed in its bid to gain clean energy export credits.

This was still too much for the anti-Kyoto Canadian Chamber of Commerce, which said the document was "built on many unrealistic assumptions".

Greenpeace also attacked the proposals, saying it was clear the government was looking to ditch Kyoto while putting the blame on alleged intransigence by the EU.

The other proposals include one that would place mandatory emissions caps on the biggest producers of greenhouse gases, blamed for global warming. Under this plan, Ottawa would invest in energy conservation and sources of alternative energy.

The proposals did not mention the economic implications of ratifying Kyoto, which opponents say could cost tens of billions of dollars and up to 500,000 jobs.

Under Kyoto, Canada committed itself to cutting greenhouse gas emissions by 6 percent from 1990 levels by 2010.

Latest estimates show emissions actually grew by 20 percent from 1990 to 2000, suggesting it would be extremely costly to meet the original target.

Resistance to Kyoto is particularly high in the energy-rich western province of Alberta, which is booming thanks to exports of oil and natural gas to the United States.

The Canadian Electricity Association added its voice to the fray, calling on Ottawa to abandon Kyoto and look elsewhere for ways to combat global warming.

17. Lobbyist Barbour Wrote to Cheney Just Before Kyoto Policy Shift

A former head of the Republican National Committee wrote to Vice President Dick Cheney last year urging a pro-energy industry shift on carbon dioxide emissions - just two weeks before the White House backed away from a global treaty to regulate them. The memo, written by former RNC head Haley Barbour, was among thousands of Bush administration documents released under federal court order to the conservative group Judicial Watch, which sued to get the papers of the energy policy task force led by Cheney.

Barbour, a lobbyist whose clients include utility giant Southern Co., told Cheney in the March 1, 2001 memo that people expected the Bush administration to carry out policies that would mean "more affordable energy". Barbour headed the RNC from 1993 to 1996. He noted that a decision was soon expected on whether to regulate carbon dioxide emissions.

"A moment of truth is arriving in the form of a decision whether this administration's policy will be to regulate

and/or tax CO2 as a pollutant," Barbour wrote. "The question is whether environmental policy still prevails over energy policy with Bush-Cheney, as it did with Clinton-Gore," Barbour continued.

"Demurring on the issue of whether the CO2 idea is eco-extremism, we must ask, do environmental initiatives, which would greatly exacerbate the energy problems, trump good energy policy, which the country has lacked for eight years?"

Two weeks later, Bush pulled the United States from the Kyoto Treaty, an international attempt to limit greenhouse gases. Bush said that the Kyoto treaty's proposed reduction in U.S. emissions by about 7 percent below 1990 levels during 2008-2012 would be too costly to the American economy. This was a change of stance from the Republican president's campaign pledge that carbon dioxide was a pollutant, and thus susceptible to emission controls.

But the White House denied that the Barbour memo had swayed Bush.

The Commerce, Transportation, and Energy departments all released papers to Judicial Watch; the Barbour memo was among the Commerce documents. The Energy Department also released some papers to the environmental group, the Natural Resources Defense Council (NRDC). Both groups sued for the papers under the Freedom of Information Act, alleging environmentalists had been largely shut out of administration deliberations with representatives of industry - such as the failed Enron Corp. - that led to a pro-oil drilling, pro-nuclear policy last year. But both groups complained that 400 pages of the Energy Department releases were late, and said they would be returning to court to demand some papers that have not been released.

The Energy Department produced a 532-page list with brief descriptions of 4,418 documents it does not intend to release.

President Bush vowed earlier this year to keep details of his inter-agency task force secret, saying the administration had the right to private advice. The Freedom of Information Act does not cover the White House, and none of its documents on the energy task force have been released.

However two lawsuits are pending to try and force it to do so. One is by Judicial Watch; the other is by the General Accounting Office, which is suing to get the papers as part of Congress' oversight of the executive branch.

The House of Representatives last year approved an energy plan that reflected much of what Bush wanted, but the Senate passed a different version recently, and negotiators are expected to take months working out the differences.

18. Report Finds Smog To Be A Killer in LA

An estimated 3,500 people a year die in Los Angeles County from the effects of inhaling fine smog particles, a national environmental group claims in a new report. The county's economy also loses 1.7 million sick days a year because of ailments related to particulate smog, which also triggers 217,000 asthma attacks annually in the county, according to the statewide report by the Environmental Working Group.

The report is the first time the impact of particulates was released by the county. Fine particles come from vehicle exhaust, power plants, factories, refineries, brush fires and even living-room fireplaces.

The report is aimed at drumming up support for new regulations recommended by the staff of the California Air Resources Board. The board is scheduled to hear testimony on the measure June 5 and 6 and vote on the proposal June 20.

Industry groups, primarily representing oil companies and auto manufacturers, are lobbying to defeat the proposed standards.

Environmentalists contend that the resulting health costs amount to \$500 million a year in the state, in addition to killing thousands.

The estimate of 3,500 county deaths caused by the effects of fine particulates was calculated from studies of health records used by Air Resources Board staffers to support their proposed regulations.

The proposed state standards are stricter than a set of standards adopted in 1997 by the federal Environmental Protection Agency, which is still working on a plan to enforce the new standards. Under the federal standard, it is likely that the EPA will only find Southern California and the Central Valley in violation.

19. GM Moves Closer To Fuel Cells With New New York Plant

General Motors Corp. said it is taking another step toward commercialization of fuel cells to replace internal combustion engines and other power sources, with the addition of a sprawling fuel cell research facility in upstate New York. The new, 80,000 square foot (7,200 square meter) facility will help GM determine the materials and processes necessary to manufacture fuel cells on a large scale, in place of the hand-built prototypes used today for

research purposes and the occasional auto show. GM, which is spending hundreds of millions of dollars annually on fuel cell research, expects to have market-ready fuel cells by mid-decade, with the first applications outside the automotive industry.

GM agreed last fall in a deal with Nextel Communications Inc. to install fuel cell backup-power units on cellular phone towers in California, to test their durability in harsh conditions. GM is also eyeing fuel cells in "non-traditional" transportation devices, which could include transport trucks, lawn mowers, farming equipment and other uses. Because fuel cell stacks are scalable, they can be enlarged or shrunk to fit a variety of applications, depending upon the energy needs. The first fuel cell-powered GM cars and trucks for the retail market are not expected to arrive until about 2010.

Fuel cells use an electrochemical process to create electricity by mixing hydrogen and oxygen, with distilled water as the only byproduct, avoiding the greenhouse gases and smog-forming pollutants that internal-combustion engines emit.

The auto industry, under pressure from environmentalists and regulatory authorities to improve fuel economy and reduce pollution, sees fuel cells as the answer to its problems.

The new fuel cell research facility will employ about 50 to 100 people raising the number of workers GM has focusing on the burgeoning industry to about 600.

GM unveiled its vision of a future mass-market fuel cell vehicle, called the Autonomy, at the Detroit auto show in January. The Autonomy's fuel cell powered four small electric motors located at each wheel. Because everything was controlled electronically,

the driver and passenger could be placed anywhere in the vehicle. Few moving parts ensure a longer life for the fuel cell vehicle, GM said.

A key part of creating a large-scale operation to manufacture fuel cells will be working with suppliers, so they know what materials to use and which parts of the fuel cell stack or fuel reformer they should work on.

20. Cleaner Off-Road Diesel Vehicles May Save 8,500 Lives; EPA Says Top Environmental Priority

The Bush administration should adopt tough federal pollution emission standards for bulldozers, farm tractors and other off-road diesel vehicles to prevent 8,500 premature deaths and 180,000 asthma attacks each year, state and local environmental regulators said in a new report.

Michael Walsh prepared the report for the State and Territorial Air Pollution Program Administrators and the Association of Local Air Pollution Control Officials. Both groups have members across the nation who are responsible for carrying out air pollution laws.

In the new report, state and local regulators urged the administration to cut emissions from off-road vehicles by more than 90 percent.

Green groups are worried that the Bush administration will propose weaker pollution-fighting regulations that would benefit diesel engine manufacturers at the expense of the public health.

In an usual collaboration, the U.S. Environmental Protection Agency and the Office of Management Budget announced last Friday that they would work together to develop rules for cutting emissions from diesel-powered,

off-road vehicles. Both agencies said reducing pollution from such vehicles was a "top environmental priority" of the administration. "The proposal being developed will evaluate not only new emission control devices that would be required for new engines, but also the reductions in sulfur levels that are likely to be needed to enable the control systems to operate effectively," EPA said.

EPA and OMB will also collaborate on the design of an innovative regulatory analysis to support the development of regulatory strategies to reduce emissions from non-road diesel engines. Among other things, this analysis will consider: (1) the use of incentives to encourage the early introduction of clean emission control technologies and low sulfur diesel fuel, (2) the potential use of market-based averaging, banking, and trading programs that might include permission to trade emission-reduction credits between off-road and highway engines, thereby stimulating more emission reduction at less cost; (3) the additional emission reduction benefits that can be achieved from existing off-road diesel engines through the use of very low sulfur diesel fuel; and (4) how risks, benefits and costs might vary by type of off-road engine and geographical location of use. The agency said it plans to publish the rules early next year for comment.

Off-road diesel fuel contains 200 times the sulfur that will be allowed in highway diesel fuel under new federal clean air regulations that take effect in 2006. Off-road diesel engines are huge contributors to higher levels of ozone and soot and nitrogen oxide emissions.

21. Environmental, Health Communities Seriously Question EPA/OMB Collaboration

In a strongly worded letter issued on

June 25, the heads of the American Lung Association, the Association of Local Air Pollution Control Officials, the Coalition for Clean Air, the Ecology Center, the Natural Resources Defense Council, the Sierra Club, the State and Territorial Air Pollution Program Administrators, the Union of Concerned Scientists and the U.S. Public Interest Research Group issued a strongly worded letter to EPA Administrator Whitman raising concerns regarding the EPA intentions. In addition to concerns regarding the potential abrogation of EPA responsibility for issuing vehicle emissions regulations, the community noted its belief that "EPA is risking a major public health setback by considering a scheme that would allow companies to trade pollution credits between the highway and nonroad diesel sectors, rather than requiring them to reduce emissions equally."

They argued that trading between the heavy-duty nonroad and highway diesel sectors would be unacceptable for several reasons.

- Such a trading scheme would introduce a great deal of uncertainty into the implementation of the 2007 Highway Diesel Rule. Many companies are investing millions of dollars into researching and developing new technologies to meet future emission targets. If EPA spends the next two years developing a final nonroad rule that includes intersector trading, it is likely that much of this research and development will stop, as companies take a "wait-and-see" approach to the proceedings.
- Further, They do not believe that intersector trading would meet EPA's longstanding trading criteria or their environmental goals for the nonroad sector itself. For years, EPA has asserted that a trading system must involve emissions reductions that are permanent, quantifiable, surplus and enforceable. Given the lack of any in-

use enforcement in the nonroad sector (whether at the state or the national level) and the huge in-use enforcement gaps in the highway diesel sector (e.g., there is no NOx or PM inspection or monitoring anywhere), it is impossible to see how a nonroad-highway trading scheme could meet EPA's trading criteria or our environmental goals.

- It is inappropriate to trade mobile source emissions because it is impossible to know the actual emissions from an individual source. Computer modeling estimates or engine certification levels are a completely unacceptable basis for designing such a trading scheme. Mobile source modeling, while vastly improved, still does not accurately reflect actual emissions. Basing a trading scheme on engine certification data is also insufficient, because these data ignore the vastly different applications and uses of the different engines. For example, some engines may operate for thousands of hours a year and others may only operate for a few hundred or fewer. Thus, without continuous emission monitoring, it would be impossible to know if the promised pollution reductions were actually achieved. We do not believe the mobile source emissions reductions could ever be defined as permanent, quantifiable, surplus or enforceable for the purposes of trading.
- Similarly, they argued, "any scenario that envisions multiple sulfur levels in the highway and nonroad diesel fuel pools and allows for trading between them would severely compromise the EPA's public health goals for both sectors." The most promising diesel emission controls (e.g., NOx adsorbers, selective catalytic reduction, and particulate traps) are sulfur-sensitive; thus, in order to ensure workable engine and after treatment technologies, as well

as ensure that our environmental and health goals are reached, sulfur levels must be no higher than 15 ppm everywhere.

- Finally, they believe that a trading system would compromise states' ability to attain the National Ambient Air Quality Standards for ozone and fine particulate matter as expeditiously as practicable and no later than the outside deadlines prescribed by the Clean Air Act. At a minimum, it would be virtually impossible to figure out where and how to allocate SIP credits for traded credits, given the mobility of mobile sources.

22. EPA Report Concludes That Engine Makers, Refiners Can Meet US Diesel Rule

U.S. diesel engine manufacturers and petroleum refiners should be able to meet the 2006/2007 federal standards to reduce the amount of sulfur in diesel fuel, according to a new Environmental Protection Agency report. The report was a blow to the U.S. oil industry, which complained it would have a tough time complying with the EPA's goal of cutting the sulfur level in diesel fuel by 97 percent to just 15 parts per million (ppm).

Refiners must begin producing the cleaner diesel by 2006. Large trucks, buses and other heavy duty vehicles must be on the market by 2007 with engines that can process the fuel and achieve very stringent PM requirements; by 2010 NOx emissions levels must be even further reduced.

The EPA's report, which is now being reviewed by an advisory panel, found that both industries are "making significant progress" in meeting the lower sulfur requirements. Some refiners are ahead of schedule and will be capable of producing the diesel fuel with the low sulfur levels as early as

next year, it said.

Separately, the EPA said engine makers plan to use technology that already exists to build engines with special filters that could process the cleaner diesel fuel. "Although it is still early in the process, every major engine manufacturer that we visited told us that they expect to have emission-compliant products in 2007," EPA said.

The oil industry and other business groups had sued the EPA in an effort to block the requirements. Oil companies said the EPA requirements would cause them to close refineries instead of making expensive modifications to their facilities, resulting in fuel supply shortages and higher diesel prices. However, a federal court ruled last month in favor of the agency's rule making, saying technology was available to make diesel fuel that emitted fewer sulfur emissions.

23. Truckers Press EPA To Reopen 2004 Rule

The American Trucking Association has filed a petition with the U.S. EPA to reconsider a 2004 regulation for heavy-duty diesel engines. The request has far greater implications, however, with many predicting EPA's acceptance would affect a looming October legal deadline whereby heavy-duty engine manufacturers must meet the new emission regulation or face a penalty for any high polluting engines they sell.

ATA said it was basing its appeal on new information concerning reliability and maintenance issues, energy impacts, life-cycle costs and the fact that a massive prebuy campaign is underway that will undermine the emission reductions that both federal and state government officials had hoped to obtain through the October compliance deadline. In the ATA letter, the organization of truck owners and

operators cited a May 2002 analysis from National Economic Research Associates Inc. that said EPA had heavily favored the benefits over the costs in 1997 when it established the regulation.

According to the Clean Air Act, EPA must consider the ATA petition even though the rulemaking's public comment period has long expired on the regulation. If EPA determines the organization's concerns are relevant, it can initiate a review of the rule. ATA can also appeal EPA's decision in court. Jeffrey Holmstead, the EPA assistant administrator for the Office of Air and Radiation, and Margo Oge, director of the agency's transportation and air quality office, are expected to play a significant role in the final decision-making.

At issue is EPA's 1997 diesel engine rule, which requires manufacturers to reduce nitrogen oxides and particulate matter by 2004. EPA in 1998 pulled forward the 2004 deadline for seven major heavy-duty engine companies -- to October 2002 -- through a consent decree agreement that federal and California air regulators at the time called the largest CAA enforcement action in history.

The consent decree stems from a suit filed by the governments charging the companies with selling approximately 1.3 million engines that had illegal "defeat device" emission systems capable of meeting EPA standards during testing but which became high polluters during normal highway driving. EPA is expected this summer to complete a regulation that would align strict noncompliance monetary penalties in the consent decree with the 2004 emission standards.

Compliance with the consent decree has led to some cutthroat competition

among the companies. So far, Cummins is the only company to gain EPA certification that it will follow through with the terms of the settlement. Mack, Detroit Diesel and Volvo also have indicated they are on their way to EPA approval. Only Caterpillar, the nation's largest maker of diesel engines for trucks, has indicated it will not comply with the deadline.

In recent months, Caterpillar has questioned the reliability of the Cummins engines, noting that carriers will have to adopt costly maintenance schedules until they are comfortable with the new vehicles. Cummins, meantime, did not back the ATA request to reopen the 2004 rule. Company chairman and CEO Tim Solso blasted the organization's attempts in a June 10 letter, arguing that the organization had "come down on the wrong side of this issue" and that the "collateral damage from a delay will be more costly than accepting the new products."

Meantime, EPA officials in May launched an investigation of the seven diesel engine makers after word had hit the streets that a significant prebuy of the old engines was underway. EPA said it was concerned the companies may have broken the terms of the federal settlement driving the October compliance.

24. Mexico Must Crack Down On Diesel Trucks Says Scientist

Mexico must crack down on smoke-spewing old trucks and buses to see improvement in its 20-year effort to cut pollution in the sprawling capital, a top expert on Mexico City pollution said recently. Outdated commercial trucks and buses are top contributors to two of Mexico City's most persistent pollution problems, ozone and fine particles, Mario Molina, an MIT professor and 1995 Nobel laureate for chemistry, said

in a speech at a Mexico City university.

During the 1990s the Mexico City metropolitan area, which now has about 18 million people and 3.5 million vehicles, lost its place at the top of the most-polluted-cities list as it cracked down on car and factory emissions. The anti-pollution programs greatly reduced levels of lead, sulfur, carbon monoxide, and other pollutants. But levels of fine particles and ozone have remained stubbornly high, and both are linked to health problems.

Mexico City, where high altitude and a deep valley geography contribute to air pollution problems, also needs cleaner-burning gasoline, more mass transit solutions, and other measures to curb pollution further, Molina said.

But if the urban area could reduce the concentration of microparticles - or fine particles that measure 2.5/1,000ths of a millimeter and penetrate deep into lungs - by 10 percent, that could prevent 2000 heart attacks a year, Molina said. "People with heart problems die on days when particle levels are high. Studies all over the world are very clear on that," he said.

Molina said it was not clear which of the many types of tiny particles in the air cause the most trouble for people with heart conditions, but one of the biggest contributors to microparticles in the pollution for the Mexico City metropolitan area comes from diesel trucks and busses.

Some 33 percent of microparticle pollution, and 35 percent of oxides of nitrogen pollution in Mexico City come from diesel bus and truck emissions. Oxides of nitrogen exposed to the sun are one of several important precursors for the formation of ozone.

He said the federal government

currently places no restrictions on commercial trucks that enter the city. He added trucks that circulate in the valley of Mexico City should be forced to pass pollution control tests, go through regular maintenance, be placed on a registry, and eventually phased out.

But he said that sort of crackdown would not work unless the government persuaded truckers that they need to contribute to pollution solutions, and unless small commercial truck businesses could tap into low-interest loans to buy new, less-polluting vehicles. Molina acknowledged that a politically viable solution was difficult, however.

The Federal government, the government of Mexico City proper, and the government of Mexico state that surrounds much of Mexico City, are each controlled by a different one of Mexico's three biggest political parties.

25. Air Board Passes Stronger Particulate Matter Standards

The California Air Resources Board (ARB) passed new, stricter standards for particulate matter (PM), the tiny dust-like particles that represent a danger to human health.

"This is an important step because these particles seriously impact human health, particularly infants, children, the elderly and those with existing heart or lung problems," said ARB Chairman Dr. Alan Lloyd.

These particles are so small they can by-pass the body's defenses and lodge in the lungs. One 10-micron particle is one-seventh the size of a human hair. ARB calculations show that statewide attainment of the new standards would reduce premature deaths by approximately 6,500 per year.

The Children's Environmental Health Protection Act (Senate Bill 25), passed by the state legislature in 1999, requires the ARB, in consultation with the Office of Environmental Health Hazard Assessment, to "review all existing health-based ambient air quality standards to determine whether, based on public health, scientific literature, and exposure pattern data, these standards adequately protect the health of the public, including infants and children, with an adequate margin of safety." As a result of the review requirement, the ARB today adopted the new PM standards:

- The annual-average standard for PM10 is lowered from 30 micrograms per cubic meter (ug/m³) to 20 ug/m³, not to be exceeded.

- A new annual-average standard is established for PM 2.5 at 12 ug/m³, not to be exceeded.

- Retained the 24-hour-average standard of 50 ug/m³ for PM10.

- Also retained the 24-hour-average standard for sulfates at 24 ug/m³.

The potential health impacts from exposure to particulate matter are significant, especially to sensitive populations. The health effects associated with PM exposure include: premature mortality, increased hospital admissions for cardiopulmonary causes, acute and chronic bronchitis, asthma attacks and emergency room visits, respiratory symptoms, and days with some restriction in activity. As directed by the Children's Environmental Health Protection Act, the ARB will be reviewing all air quality standards to assure the protection of infants and children's health.

The new standards amount to new clean air goals for the state. The standards will go into effect late this

year or early next year, after going through California's review process for new regulations.

The Air Resources Board is a department of the California Environmental Protection Agency. ARB's mission is to promote and protect public health, welfare, and ecological resources through effective reduction of air pollutants while recognizing and considering effects on the economy. The ARB oversees all air pollution control efforts in California to attain and maintain health based air quality standards.

26. EPA To Continue Development Of PM Air Quality Standard While Statistical Error is Reviewed By HEI

The U.S. EPA recently released the two-volume Third External Review Draft of the EPA document "Air Quality Criteria for Particulate Matter", for a 60-day public comment period (ending July 10, 2002) and for review by the Clean Air Scientific Advisory Committee (CASAC) at a public meeting scheduled for July 18-19, 2002 at EPA facilities in Research Triangle Park, NC. That draft EPA PM Air Quality Criteria Document assesses newly available information on health and ecological effects of exposures to ambient air PM, to provide key scientific bases to support the current periodic review of U.S. Particulate Matter National Ambient Air Quality Standards (PM NAAQS). Chapter 8 (Epidemiology) of that draft document assesses numerous time-series studies and other types of PM epidemiology studies; and Chapter 9 (Integrative Synthesis) integrates information from the epidemiologic chapter with information from other chapters.

The U.S. EPA was recently informed by the Health Effects Institute (HEI) of a generally unappreciated aspect in the

use of S-Plus statistical software often employed to fit generalized additive models (GAM) to data in time-series analyses. As indicated in the HEI letter, in estimating the GAM, the S-Plus program uses an iterative process that comes to completion when the improvement in model fit is less than preset criteria. Investigators at Johns Hopkins University (J. Samet and colleagues) used the S-Plus default convergence criteria in conducting HEI-funded PM epidemiology analyses reported in their published NMMAPS multi-city studies discussed in Chapter 8 of the Third Draft PM AQCD. The NMMAPS investigators found that, for a given city, the default convergence criteria in S-Plus appear to be inadequate to assure that convergence of its iterative estimation procedure actually reaches the maximum likelihood value. Depending on the city, use of the default convergence criteria can bias the estimate of relative risk of air pollution upwards or downwards. Initial analyses suggest that these changes may be most acute when the effect to be estimated is relatively small or when substantial colinearity is present.

The HEI letter also notes that the NMMAPS investigators have begun to address this issue using Generalized Linear Models (GLM) and have tested these techniques to ensure that they do not share the same analytical issue. Preliminary reanalysis of the NMMAPS 90-city dataset, using GLM methods, suggest that the individual city effects are sometimes larger, but more often smaller than those previously reported. On average, the size of the new city-specific estimate varies by 23% from the original value, and the original pooled estimates of effects for 90 cities appear to be reduced by use of the newly employed analytic techniques. As an example, for total mortality at lag 1, the updated value is approximately 0.2% per $10 \mu\text{g}/\text{m}^3$ PM_{10} (about half of the

original value of 0.4% per $10 \mu\text{g}/\text{m}^3$ PM_{10} for the NMMAPS nationwide effect estimate discussed in the PM AQCD). The new PM effect estimate, while smaller, is still statistically significant and thus far apparently not sensitive to adjustments for other gaseous pollutants (O_3 , CO, NO_2 , and SO_2). In summary, these new analyses suggest that the new findings, though resulting in smaller estimates of effect, appear to be similar to the original in many respects, and the full extent of any differences resulting from these new analyses are still being explored.

The above-noted developments may have implications for other time-series studies (both of air pollution and other topics) that used the GAM technique in the S-Plus software. The effects of using appropriate modifications of the default convergence criteria code in the S-Plus software or other alternative techniques cannot now be predicted; new estimates of effects for any specific location(s) may possibly increase or decrease from values reported in the published literature for those PM studies that employed the default convergence criteria in S-Plus analyses involving GAM techniques. Efforts are underway by U.S. EPA staff (1) to identify which of the published studies assessed in Chapter 8 of the Third Draft PM AQCD may have employed such techniques in S-Plus analyses, (2) to inform authors of such studies about the developments discussed above, and (3) to develop plans and projected schedules for appropriate revision of Chapters 8 & 9 of the draft PM AQCD to adequately address this issue.

In the meantime, the U.S. EPA plans to proceed with the current review of the Third Draft PM AQCD. This includes acceptance of written public comments on that draft document to be submitted by July 10, 2002. Holding the July 18-19 CASAC meeting is also viewed by

EPA as still being very useful, both (1) to hear comments and allow for review of most chapters in the Third Draft PM AQCD, and (2) to discuss with CASAC the above-noted developments, the status of EPA efforts to identify potentially affected PM epidemiology studies, and plans for addressing this and related issues through further revisions of draft PM AQCD Chapters 8 & 9.

27. EPA and CARB Developing Plans For Manufacturer Run, In Use, Heavy Duty Vehicle Testing Program

The goal of this program is to generate data on in-use emissions of heavy-duty engines that can be used by EPA, CARB, and manufacturers to ensure that emission standards are met throughout the useful life of subject heavy-duty engines under conditions normally experienced in-use. The program is intended to monitor for NTE compliance, defeat devices, engine and after-treatment deterioration, and to ensure overall compliance with emission standards. EPA/CARB believe all of these objectives can be met through a robust program that measures the full range of emissions from trucks operating in their normal daily routines.

This is a two-phase program using onboard, mobile emission testing devices; initiation of the second phase is conditional on the results of the first. The first phase will be used determine if the engine family clearly passes the test criteria or if there may be a problem. Under a "clear pass" result, the engine family will be deemed "closed" and no further testing of that family will be required from the manufacturer that year. EPA/CARB may reopen an engine family if it obtains data indicating that failures or violations may be occurring. Additionally, the family may be selected for later testing at higher mileage. If an engine family does not

achieve a clear pass in the first phase, EPA/CARB will provide the manufacturer an opportunity to present additional data. Then EPA/CARB will decide a course of action depending on the significance of the problem indicated by the Phase 1 data. The course of action might include, but not be limited to, one of the following:

- No further action (while not a clear pass, problems with the family are not indicated by the data);
- Pursue remedial action directly without added testing based on evidence of failure; or,
- Require the manufacturer to conduct additional testing if evidence of failure suggests such testing is needed to determine compliance status of the family.

The second phase of the test program is initiated if EPA/CARB decide that the manufacturer must conduct additional testing using mobile emissions testing devices based on the Phase 1 results described above, similar data from an EPA/CARB test program, or both sets of data.

EPA/CARB believe a pilot program in 2005 and 2006 will provide EPA, CARB, and the manufacturers with the experience needed to ensure successful implementation of a fully enforceable program in 2007.

28. US Government Report Blames Humans For Global Warming; Bush Blames Bureaucrats

The Bush administration acknowledged for the first time that U.S. greenhouse gas emissions will increase significantly over the next two decades due mostly to human activities, but again rejected an international treaty to slow global warming. The report quietly released by the Environmental Protection Agency gave a surprising endorsement to what

many scientists have long argued - that oil refining, power plants and auto emissions are important causes of global warming. Gradually increasing temperatures are likely to threaten coastal barrier islands and mountain meadows, the report said.

In the inter-agency report sent to the United Nations, the administration forecast that total U.S. greenhouse gas emissions will increase 43 percent between 2000 and 2020. On the same day, all 15 European Union nations ratified the Kyoto pact (see above), a U.N.-backed plan to cut emissions of greenhouse gases such as carbon dioxide. EU officials also criticized Washington for rejecting the treaty.

The United States is the world's largest emitter of greenhouse gases, mostly from utilities and factories.

The White House previously said there was not enough evidence to link industrial emissions to global warming.

"Greenhouse gases are accumulating in the Earth's atmosphere as a result of human activities, causing global mean surface air temperatures and subsurface ocean temperatures to rise," the report said.

That position put the administration at odds with its supporters in the U.S. auto, oil and electricity industries, who contend that more research is needed to determine if the changes are naturally occurring or caused by industry.

Last year, U.S. President George W. Bush triggered international outrage when he said the United States would not participate in the Kyoto Treaty. He said the pact's goal of cutting U.S. emissions by about 7 percent from 1990 levels during 2008-2012 would be too costly to the American economy.

The administration repeated in the new report that voluntary measures by U.S. polluters, rather than Kyoto's mandatory approach, are the best way to slow the growth of carbon emissions. A voluntary approach is "expected to achieve emission reductions comparable to the average reductions prescribed by the Kyoto agreement, but without the threats to economic growth that rigid national emission limits would bring," it said.

The White House aims to cut the amount of emissions per unit of U.S. gross domestic product by 18 percent over the next decade through a combination of voluntary, incentive-based and mandatory measures.

The U.S. approach to global warming is expected to face heavy criticism at an August global summit on climate change in Johannesburg, South Africa. Some 60,000 delegates and 100 heads of state are expected to attend.

But environmental groups said the new report marked a major change for the administration. Air, water and land pollution issues are expected to play an important role in many congressional elections in November.

A White House spokesman said many questions remained about the impacts of global warming.

The report warned that global warming will have a greater impact on certain regions of the United States. Average temperatures in the contiguous United States will rise an estimated 5 degrees to 9 degrees Fahrenheit (3-5 degrees Celsius) during this century. Sensitive ecosystems, such as Rocky Mountain meadows and coastal barrier islands, will likely disappear, it said. Southeastern forests may see major changes in growth patterns. The sea level will rise an average 19 inches (48

centimeters) and threaten homes, roads, and power lines in coastal areas, the report said.

Energy industry officials downplayed the report. They contend there is no scientific proof of links between global warming and specific regional effects.

When confronted by reporters, President George W. Bush called the report nothing more than a product of government "bureaucracy" and said he still would not accept an international accord to reduce heating-trapping emissions.

"I read the report put out by the bureaucracy," Bush told reporters. Instead, Bush said he would continue to push voluntary efforts and financial incentives for U.S. companies to use new technologies to reduce their emissions.

"I do not support the Kyoto treaty," said Bush, a former Texas oilman. "The Kyoto treaty would severely damage the United States economy, and I don't accept that."

Former U.S. Vice President Al Gore criticized President George W. Bush for refusing to accept the report. Gore, the 2000 Democratic presidential nominee and a champion of environmental protection as vice president, said the president had succumbed to powerful interests that run the Republican Party and rejected the report rather than accept it and do something about global warming. "That's not a moral choice," Gore said. "I don't want to hear from this bunch: 'We didn't know.'"

Gore has questioned Bush's policies on the economy, environment and values in previous appearances since emerging from a year of political seclusion in February. He has not said whether he will make another run at the White

House in 2004.

The Bush administration has put "lobbyists for the polluters in charge of policies" and put "the hungriest fox they could find" to guard government henhouses, Gore said.

Republicans want to turn their back on the environment rather than embrace new technologies that can clean up the environment and create jobs, Gore said. "It is our moral responsibility and it's our economic opportunity," Gore said.

29. EPA Chief Says What Report?

Christine Todd Whitman, the top US environmental regulator, said she was not told in advance about the report that concluded greenhouse gas emissions produced by human activities were the primary cause of global warming. The report was quietly posted on the Environmental Protection Agency's Web site after it was sent to the United Nations.

Whitman, the head of the EPA, said she did not read the report in advance and was not even aware of the study until news organizations reported it.

"I knew about it when I read it in the paper," she told reporters following a speech at an energy efficiency conference in Washington.

Green groups have long questioned whether Whitman has a say in setting administration environmental policies, or if White House officials make those decisions. Her comments on the climate change report raised more doubt.

Whitman said she was briefed on the EPA report after it was published.

The staff of the EPA, the State Department and other agencies reviewed the report's conclusions before

it was published, Whitman said. "Since nobody saw anything earth-shattering in what the conclusions were ... they didn't think they needed to raise the red flag," she said.

Energy Secretary Spencer Abraham said Wednesday he was out of the country when the report was released and he did not read it in advance, nor has he since been briefed on the study. Energy Department staff helped write the report.

Whitman, along with White House officials, have tried to downplay the controversy by citing a speech Bush gave last year when he stated that human activities were a cause of greenhouse gas emissions. However, the administration's new report went a step further, saying human activities were primarily to blame for global warming and have caused "surface air temperatures and subsurface ocean temperatures to rise."

30. Comparison of US Senate, House Energy Bills

U.S. Senate and House of Representatives negotiators have begun to meet in an effort to reconcile their respective energy bills. The two chambers of the U.S. Congress approved sharply different energy packages, and 61 negotiators will spend the next few weeks trying to blend both versions together. If a compromise energy bill can be developed, it must then be approved by both the House and Senate and then be signed by President George W. Bush before going into effect.

The following table summarizes certain key provisions in the Senate and House energy bills.

* Tax Breaks

Senate - Give \$14 billion in overall tax breaks, evenly divided between conservation and production incentives. House - Give \$33 billion in overall tax breaks, mostly weighted toward traditional oil, natural gas and coal industries.

* Arctic National Wildlife Refuge (ANWR)

Senate - Continue ban on drilling throughout ANWR's entire 19 million acres (7.7 million hectares) House - Open 1.5 million acres (607,500 hectares) of ANWR to drilling, with 2,000 acres affected at any one time.

* Oil/Gas Drilling

Senate - Provide \$3.2 billion in tax breaks to encourage oil and gas exploration, including shale oil and coal seam gas. House - Suspend potentially billions of dollars in royalty payments by oil companies for drilling in deep waters in the Gulf of Mexico; provides \$1.1 billion in tax incentives for marginal wells; offers \$3/barrel tax credit for low-volume wells when energy prices are below \$15/barrel.

* Vehicle Mileage Standards

Senate - Order Transportation Department to review effect of higher mileage requirements on vehicle safety and autoworker jobs; exempts pick-up trucks from any future increases in fuel efficiency requirements. House - Order Transportation Department to reduce U.S. fuel use by 5 billion gallons from 2004 to 2010, an amount equal to a two-week supply of U.S. motor fuel.

* Global Warming

Senate - Continue voluntary corporate reporting of greenhouse gases for 5 years but allows Environmental Protection Agency to make reporting

mandatory after that. House - Bill did not address climate change issues.

* Ethanol

Senate - Triple the amount of ethanol to be blended into gasoline to 5 billion gallons/year in 2012; triple the amount of electricity generated from renewables such as solar and wind by 2020. House - Order study of renewable fuels program.

* Renewable Energy

Senate - Require electricity suppliers to generate 10 percent of their power from renewable energy sources by 2020. House - Bill did not set requirement.

31. US Senate Panel Passes Four Pollutant Bill

The Senate Environment Committee narrowly passed a bill that would impose the first-ever limits on emissions of heat-trapping greenhouse gases in the United States, but Republicans called the measure dead before it gets to the Senate floor.

The panel voted 10-9 largely along party lines to send to the full Senate the "Clean Power Act," which also sets strict caps on three other pollutants spewed by many U.S. utilities. The pollutants from electricity generating plants have been linked to asthma attacks and other respiratory illnesses.

Vermont Sen. Jim Jeffords, an independent who chairs the panel, placed himself on a collision course with the Bush administration by proposing a 23-percent reduction in carbon dioxide emissions by 2008.

Thursday's vote was the culmination of negotiations with lawmakers, green groups and industry that began last year.

"Today's action sends a clear message to this administration that the Senate is willing to engage on clean air and climate change," Jeffords said.

The Bush administration has vehemently opposed any cap on carbon dioxide emissions on the grounds the cost of complying would be devastating to U.S. industry. Republican opposition to the bill will weigh heavily on its prospects for approval by the full Senate, even though Majority Leader Tom Daschle has indicated support. Without major revisions, a Senate vote is unlikely before Congress adjourns in early October, according to most observers.

Also, the bill would cut emissions of acid rain-causing sulfur dioxide and smog-forming nitrogen oxides far beyond the levels proposed by the White House in February. The legislation also would set first-time limits on mercury emissions. Separately, Jeffords backed off his threat to call a vote to subpoena the White House for documents about its decision to relax air pollution rules for aging coal-fired power plants. Jeffords said would give the administration more time after receiving assurances from the Environmental Protection Agency that it would turn over some documents by July 3.

However, subpoenas could still be issued if the administration does not cooperate.

32. Judge Suspends California's 2001 ZEV Regulations

The federal judge in the lawsuit challenging California's 2001 revisions to its Zero Emission Vehicle (ZEV) Program granted plaintiffs' request to suspend the 2001 ZEV Regulations with respect to the sale of new motor vehicles for the 2003 and 2004 model

years.

On January 3, 2002 by General Motors, DaimlerChrysler, and several local California dealerships (the "plaintiffs") filed a lawsuit challenging both the 1999 and the 2001 revisions to the California ZEV program. In the suit, the plaintiffs allege that the ZEV rules, as amended by the recently final 2001 revisions, run afoul of the U.S. Constitution's Supremacy Clause by attempting to regulate fuel economy, which is specifically preempted by federal law. The plaintiffs pointed out in their complaint that the Energy Policy and Conservation Act (EPCA) authorizes the National Highway Traffic Safety Administration (NHTSA) to set fuel economy standards and explicitly prohibits states from adopting or enforcing any law or regulation related to fuel economy or average fuel economy standards. Because of the significant costs associated with battery-powered ZEVs and the infrastructure problems of hydrogen fuel cell ZEVs, the plaintiffs alleged that an auto manufacturer's only option to comply with the California ZEV mandate is to produce advanced technology partial ZEVs (AT PZEVs). The plaintiffs claim that this forces manufacturers to produce and sell in California vehicles with higher fuel efficiency than required under the federal fuel economy standards. The plaintiffs also pointed to the "High Efficiency Multiplier" for AT PZEVs as another aspect of the latest revisions to the ZEV regulations that is based solely on fuel economy.

On June 11, 2002, the judge in the federal lawsuit granted the plaintiffs' preliminary injunction asking that the California Air Resources Board (CARB) be prevented from enforcing the 2001 ZEV regulations for the 2003 and 2004 model years. In its analysis of whether to grant the injunction, the judge weighed several factors. Among these,

the judge considered whether the plaintiffs could succeed in winning their case on the federal preemption issue and concluded that they could. The judge agreed with the plaintiffs that the compliance strategy of the least possible cost would require a manufacturer to sell AT PZEVs, which are tied to fuel economy principles. Thus, the judge concluded that while there are other compliance options available, those options are not viable alternatives. The judge also looked at whether the plaintiffs would suffer irreparable harm from enforcement of the 2001 ZEV regulations. In its opposition to the injunction, CARB argued that the plaintiffs would not suffer harm from the 2001 regulations because the 1999 ZEV program was more stringent. CARB pointed out that the 2001 ZEV regulations eased the economic impact of the 1999 ZEV requirements. The judge rejected this argument, noting that CARB was not enforcing the 1999 ZEV Program prior to the filing of the lawsuit. The judge also took note that CARB could not enforce the 1999 ZEV Program because it had not been granted a waiver as required under Section 209 of the Clean Air Act.

Also considered by the judge was whether the AT PZEV portion of the 2001 revisions could be "severed" from the rest of the 2001 ZEV regulations so that the rest of the regulations could remain in place and be enforced. The judge agreed with the plaintiffs that the 2001 ZEV regulations did not contain any provision that would have allowed for one portion of the regulations to be removed.

33. US Planning To Phase Out Hybrid Car Tax Credit

The U.S. Internal Revenue Service announced it would extend a tax credit of up to \$2,000 to buyers of gasoline-

electric hybrid vehicles. The IRS said the credit would apply to original owners of vehicles certified by the government as hybrids. But the IRS also said the credit, which would be deducted from the buyer's gross income on a tax statement, would apply in full only to hybrids bought by the end of 2003. In 2004, it would begin to be phased out, with no credit after 2006.

The only vehicles that would likely qualify today are all Japanese models - Honda Motor Co. Ltd.'s Insight and Civic hybrids, and Toyota Motor Corp.'s Prius. All three are sold in limited numbers, and the automakers have kept production low in part because of high costs.

General Motors Corp., Ford Motor Co. and the Chrysler arm of DaimlerChrysler AG have all pledged to begin building hybrids in 2004, but have also said volumes would be small in the first years of production.

Energy bills that passed the U.S. House and Senate this year include provisions for a variety of credits on hybrid vehicles, based on a vehicle's size, emissions and its fuel efficiency. It remains unclear whether the House and Senate will be successful in reconciling their respective bills during this Congress.

34. GAO Warns MTBE Fuel Leaks In Water More Widespread

Contamination of water supplies by MTBE is more widespread in local communities than previously thought, because the gasoline fuel additive has leaked from pipelines across the United States, the General Accounting Office warned Congress. Currently, portions of 17 states and the District of Columbia use gasoline containing MTBE (methyl tertiary butyl ether) in order to boost the oxygen content of motor fuel and limit

air pollution. However, 35 states have found MTBE in groundwater at least 20 percent of the time they tested for it.

"MTBE is being detected nationwide because...it had been used as an octane enhancer in gasoline in the past and because the pipes and trucks used to carry gasoline throughout the nation have been cross contaminated with the substance," said John Stephenson, director of the GAO's Natural Resources and Environment division. GAO is the investigative arm of Congress. Testifying before a House subcommittee looking into MTBE groundwater contamination, Stephenson said leaks of the fuel additive pose health risks to those who live nearby or drink the water. "Such health risks can range from nausea to kidney or liver damage or even cancer," Stephenson said.

As a result, 14 states have partially or completely banned MTBE and some communities have closed their drinking water wells.

Stephenson pointed out that a school in Roselawn, Indiana, discovered that students have been drinking water with nearly 10 times the federally recommended safe level of MTBE, and officials are trying to determine if the additive came from a nearby tank and whether it caused the students' nosebleeds.

MTBE is less likely to cling to soil and than other gasoline components and dissolves more easily into wafer, allowing the substance to travel faster, farther and deeper.

The extent of MTBE contamination may be understated, according to Stephenson, because some leaks go undetected and only 19 states conduct extra tests to ensure that MTBE does not travel further from a tank site.

Energy legislation passed by the Senate would phase out the use of MTBE nationwide. The House of Representatives did not include such a phase out in its energy bill.

35. GM, Suzuki Exploring Electric Vehicles

General Motors Corp.'s and Suzuki Motor Corp.'s joint venture plant in Canada has signed an agreement with Electrovaya Inc. to develop electric vehicles, the Canadian battery manufacturer announced recently. Under the memorandum of understanding, Electrovaya will develop an electric propulsion system for the Chevrolet Tracker and the Suzuki Vitara small sport utility vehicles built at the Ingersoll, Ontario plant. Should GM and Suzuki decide to develop electric vehicles with the Electrovaya system, they could reach market around mid-decade, Van Damme said.

Electrovaya claims its lithium-ion rechargeable battery delivers the highest energy density of any battery technology on the market.

36. New York Getting Greener Thanks To Truckers

Six companies whose trucks, buses and vans have been cited as the most frequent violators of anti-pollution law against idling have agreed to plant 100 trees as part of a settlement with the New York State Attorney General's office, city officials have announced.

PepsiCo Inc.'s Frito-Lay Inc., Greyhound Lines Inc. and Gray Line New York Tours, Community Coach Inc., Leisure Lines Inc. and Suburban Trails Inc. will pay a total of \$103,000 for trees to be planted in neighborhoods like Central Harlem, the South Bronx and Fort Greene in Brooklyn.

The South Bronx has six times the national average of childhood asthma and truck emissions are part of the problem, health officials say.

New York state law calls for a penalty of \$250 to \$15,000 if vehicles with diesel engines leave them running for longer than five minutes while parked.

As part of the settlement, the six companies will train their drivers about the state law, monitor their compliance for three years and pay penalties of \$1,000 to \$5,000 per idling violation.

ASIA PACIFIC

37. Japanese Government Pledges To Buy Fuel Cell Vehicles

Japan's government last week pledged to buy eco-friendly fuel cell vehicles from next year in an effort to promote the fledgling technology. "We decided at today's cabinet meeting that the government would start buying fuel cell vehicles from next year if car companies are able to market them," Prime Minister Junichiro Koizumi told a news conference to mark his first year in power.

Fuel cell vehicles, which use hydrogen to create electricity and emit only water, may one day replace the internal combustion engine and major automakers are racing to put the first vehicles on the market by 2003 and 2004. But with the technology so new, costs for the vehicle are too high for the ordinary consumer and the cars are not expected to go mainstream for several years if not a couple of decades.

In Japan, Toyota Motor Corp, the nation's largest automaker and second-ranked Honda Motor Co are leaders in the field. "This is going to have a huge impact on the world because they are useful in terms of our environmental and

energy measures as well as improving our industrial competitiveness," Koizumi said.

While fuel cells promise a pollution-free source of energy using renewable fuels, high costs, a lack of industry consensus on how to transport or store a hydrogen fuel as well as on the development of a hydrogen supply infrastructure, stand in the way.

Japanese automakers are also aggressively promoting gasoline-electric "hybrid" vehicles which combine a battery-powered motor with a gasoline engine, which are expected to fill the gap before fuel cell vehicles come into their own.

38. Joint Study on Air Quality of Pearl River Delta Region Released

The Hong Kong Special Administrative Region (HKSAR) Government and the Guangdong Provincial Government have released the findings of a joint study on air quality in the Pearl River Delta (PRD) region and reached a consensus to implement measures that will bring long-term improvements to air quality in the region.

The two Governments would aim, on a best endeavor basis, to reduce by 2010 the regional emissions of the four major pollutants in the air, namely sulphur dioxide, nitrogen oxides, respirable suspended particulates and volatile organic compounds, by 40%, 20%, 55% and 55% respectively, using the emission level at 1997 as a base.

Achieving the agreed emission reduction targets will enable Hong Kong to meet the current Hong Kong Air Quality Objectives. The smog phenomenon in the region will also be significantly improved.

Cities in the Pearl River Delta region will

meet the relevant National Ambient Air Quality Standards, except for discrete time periods and at localized points.

The study indicates that the air pollution problem in the Pearl River Delta region is similar to that faced by many other cities in the world, which mainly involves ozone, respirable particulates and nitrogen dioxide.

The main emission sources identified are power plants, industrial establishments, motor vehicles and products containing volatile organic compounds. The Government said that both the HKSAR and Guangdong Provincial Governments attach great importance to tackling the problem of air pollution in the PRD region. The two Governments have implemented various measures to control emissions from their respective local sources and improved many local air pollution problems.

The study anticipates that with the increase in the population and economic activities, the emissions of sulphur dioxide, nitrogen oxides, respirable suspended particulates and volatile organic compounds in the region would increase by 53, 34, 34 and 25 per cent respectively in 2010 compared with 1997.

The two Governments have examined the study report and reached the following consensus -

- o The two Governments would aim, on a best endeavor basis, to reduce the regional emissions of sulphur dioxide, nitrogen oxides, respirable suspended particulates and volatile organic compounds by 40%, 20% 55% and 55% respectively, using 1997 as the base year, and strive to achieve those targets by 2010.
- o They would study in detail the additional improvement measures

recommended in the study with regard to their feasibility.

- o A regional air quality management plan would be drawn up. The Hong Kong/ Guangdong Co-operation Joint Conference would take charge of monitoring progress of the improvement measures.
- o An expert group comprising officials of the Hong Kong Environment Protection Department and the Guangdong Environmental Protection Bureau would be set up to monitor jointly trends in regional air quality and to evaluate the effectiveness of the improvement measures. It would also be responsible for training personnel of the two Governments, exchanging technical know-how and keeping in view the feasibility of introducing new technologies and measures.

The Governments of the HKSAR and Guangdong agreed at the second meeting of the Hong Kong/Guangdong Cooperation Joint Conference in September 1998 to commence the joint study to pre-empt the deterioration of region-wide air quality.

The study started in 1999. The geographical areas studied included the HKSAR and the Pearl River Delta Economic Zone in Guangdong Province. It covered an area of 43 000 square kilometers and a population of nearly 50 million.

39. Korean Authorities Seen Easing Stance On Diesel Car Ban

In the face of intensifying pressure and protests from local automakers, the commerce and environment ministries appear to be softening their previously hard line positions on the ban of diesel-engine sport utility vehicles and minivans according to industry and

government sources.

Starting July 1, the Ministry of Environment was to enforce a revised and toughened automotive exhaust gas regulation, which contains a 50-fold increase in the minimum permissible level of noxious diesel-engine exhaust gas, threatening to ban local sales of some SUVs and minivans.

However, fearing massive sales losses affecting about 6,000 units of the diesel engine Santa Fe, 7,000 units of Carens II and 5,000 units of Trajex XG, in the domestic market, Hyundai and Kia have strongly appealed to the government and enlisted the help of automotive engineers and auto industry lobbying organs. The two automakers also helped organized a public hearing on the debate in Seoul, paving the way for academic, industry and civic representatives to recommend a more careful approach to the diesel-car ban.

In addition, Hyundai and Kia officials have publicly threatened to suspend exports of the concerned SUV and minivan models to help meet their rising domestic demands prior to July 1.

Against such a backdrop, environment and commerce ministry officials have expressed an intention to postpone the enforcement of the new toughened diesel-engine exhaust gas rules, in consideration of the adverse impact on the automotive industry and auto-parts makers.

40. Shell Australia To Spend A\$100 Million On Refinery

Royal Dutch/Shell has announced that it will invest A\$100 million in its Geelong refinery to allow it to meet tougher fuel quality standards. Victoria state premier Steve Bracks announced the start of construction of a new hydro-desulphurisation plant at the refinery,

which will allow it to meet new air quality standards two years ahead of the Australian government's schedule.

Karel Pronk, Shell general manager manufacturing, said when the plant was completed in late 2003 the refinery would be able to produce ultra-low sulphur diesel which would meet the new fuel specifications of 50 parts per million sulphur that are due to be introduced on 1 January 2006.

The Shell Geelong refinery, 60km from Melbourne, is one of eight in Australia and produces 15 per cent of the country's petroleum products. It supplies about 50 per cent of Victoria's petrol.

Shell began a A\$30 million project last July to expand the processing capability at its Clyde refinery in Sydney to meet the tougher fuel standards by the end of 2003.

BP Australia said it had already invested in its refineries at Kwinana in Perth and Bulwer Island in Brisbane, allowing both to meet the fuel quality standards in October 2000.

41. PetroChina Plans Two Gas Pipelines to Beijing

Chinese oil major PetroChina is conducting pre-feasibility studies to build two new pipelines to deliver natural gas from the resource-rich northwest to Beijing, officials have announced. PetroChina aims to build one pipeline in collaboration with the Beijing municipal government, and one with oil giant Royal/Dutch Shell.

These two pipelines would ensure natural gas supply to Beijing over the next few years amid rapid economic growth. It would also gel with a government push to use environmental-friendly energy as promised in their bid to host the 2008 Olympic Games. Some

officials predicted gas consumption would exceed at least three bcm in Beijing in 2005 and was set to see rapid growth ahead of the 2008 Olympics.

PetroChina's first Shaanxi-Beijing gas pipeline, which began operations in 1997, has a maximum capacity of three bcm gas a year. It provided 1.885 bcm of natural gas to Beijing last year, but could hardly meet demand in winter when gas was used for household heating.

42. Australia Has Hottest April On Record

Australia had its hottest April on record, the Australian Bureau of Meteorology announced. The average maximum Australia-wide temperature in the month was 31.1 degrees Celsius (88 Fahrenheit), while the mean Australian temperature for the month was 24 degrees (75F).

"If we average temperatures from all around Australia, it comes in as the highest April we've had," according to Dean Collins, senior meteorologist at the weather bureau's national climate center.

April's maximum on average ranges from 21 degrees (70F) in Sydney in the south to 33 (91F) in Darwin in the north, according to the bureau's Web site.

Collins said several factors could account for the unusually warm month.

Dry weather experienced throughout much of the country would have helped raise temperatures, as would strong northerly wind anomalies through the center of the country.

Sea surface temperatures around Australia at present were also warmer than normal.

"(That) always boosts temperatures a bit," he said.

The earth's climate was always waxing and waning, Collins said. But Australia's hottest April followed unusually warm global weather in March, he said.

"An unusually warm month...is consistent with global warming, but because there are so many different influences on climate we can't definitely say that this is global warming. It could well have been a contributing factor," Collins said.

43. Thailand "Postpones" Coal-Fired Plants

Thailand has decided to "indefinitely postpone" construction of two controversial Japanese-funded coal-fired power plants, government sources said, a move that will thrill environmentalists but worry investors. The decision was taken during a meeting chaired by Prime Minister Thaksin Shinawatra to discuss the two plants, Hin Krut and Bor Nok, in Prachuab Khiri Khan province, 250 km south of Bangkok.

The government apparently decided the two power plants were superfluous to current power requirements because reserves were higher than previously projected. The government will renegotiate power supply agreements with the two projects, and five other independent power producers (IPPs) planning to build plants to supply power to the Electricity Generating Authority of Thailand (EGAT).

The Hin Krut plant is owned by Union Power Development, which is 29 percent owned by Japan's Tomen Corp and 26 percent owned by Hong Kong Electric. Japan's Chubu Electric Power, Toyota Tsusho Corp and Thailand's Union Energy own 15 percent each of

the plant.

Gulf Power owns the other power station, Bor Nok, which is 50 percent owned by Thailand's Electricity Generating Plc, 49 percent owned by Electric Power Development of Japan and one percent owned by Thai firm Mitsiam International Ltd.

The Japanese government owns two thirds of Electric Power Development, with the rest split among nine Japanese power utilities.

In the last few months, the government has come under mounting pressure from local communities and environmentalists to cancel the projects. In January, Thaksin met hundreds of villagers staging a sit-in protest at the planned sites of the power plants to hear their fears of air pollution and contamination of fishing grounds.

But the government panel headed by Thaksin was persuaded to postpone the projects by studies showing power demand for Thailand this year would be lower than forecasts made in the feasibility studies of the two plants, sources said.

Thailand's National Energy Policy Office (NEPO) said last year the projects, with a combined capacity of 2,100 megawatts are necessary to maintain power reserves at their current level as industrial and domestic demand grows. But the last head of NEPO, who often publicly voiced support for the two projects, was removed from his post last month.

The plants are two of the three privately run, coal-fired plants planned under NEPO's 1996 policy to diversify fuel sources and deregulate the power industry.

NEPO plans to lower the proportion of

natural gas in power production to 55 percent by 2011 from 74 percent last year, and get more power instead from coal, renewable fuels and neighboring countries' hydroelectric plants.

44. Japan Ratifies Kyoto Pact, Urges Others To Follow; Australia Says No

Japan ratified the Kyoto protocol on global warming that it signed at a United Nations climate conference in 1997 and said it would urge other countries including Russia and the United States to do the same. Japan has pledged to cut its output by six percent.

Following the ratification at a cabinet meeting, Japan's foreign and environment ministers will write to countries including Russia and the United States urging them also to ratify the treaty. But hopes that the treaty can be brought into force during the Johannesburg meeting on sustainable development starting on August 26 now seem unrealistic, as Russia has indicated that it will not ratify until the end of the year.

In a related development, Australia has indicated that it will not ratify the treaty. "It is not in Australia's interests to ratify the Kyoto protocol," the prime minister said in his response to a question without notice from the main opposition party. "The reason it is not in Australia's interests to ratify the Kyoto protocol is that, because the arrangements currently exclude--and are likely under present settings to continue to exclude--both developing countries and the United States. For us to ratify the protocol would cost us jobs and damage our industry."

Thirty-nine nations that have signed the treaty have yet to ratify it.

45. The Report on the State of Environmental in China 2001

Released by SEPA

China has released its official national environmental status report for last year, which states that "the overall environmental situation in China is still grave." According to the report, issued by the State Environmental Protection Administration (SEPA), China's environmental quality remained stable last year, while the country enjoyed an economic growth rate of 7 per cent. Total pollutant discharge was roughly kept at the same level as in the previous year, the report said. The nation-wide industrial solid waste discharge totaled 28.9 million tons, a 9.2 per cent drop from the figure for the previous year. Pollution in all seven major rivers around the country increased to some extent last year, with the water quality of the Yellow, Huaihe and Liaohe rivers suffering the most because of their dramatic drops in water volume. Coastal pollution remained serious in the East China and Bohai seas. Urban air quality was almost the same as for the year 2000, but total suspended particulate (TSP) pollution became more widely spread. Acid rain fell on around 30 per cent of the country's territory but the number of cities affected was slightly reduced, according to the report. Most cities around the country were slightly affected by noise pollution, said the report. Statistics from the ministry indicate that sand storms last year were more serious than in the previous year in terms of frequency and intensity, with 18 sand storms covering 45 days from March to May last year in northwestern, northern and northeastern parts of China. The report also covers other environmental issues such as nuclear radiation, forest conservation, soil erosion, biological diversity, and the ecological situation in the Three Gorges Reservoir area, red tides, and progress of major environmental projects across the country.

46. Beijing To Adopt Euro 2 Standards One Year Early

China's capital city will impose Euro 2 automobile emissions standards beginning January 1, 2003, a year earlier than they are due to be implemented nationwide, state media reported June 17. In 2001, the city's air pollution exceeded World Health Organization standards for safe breathing on more than half the days of the year, and automobile exhaust contributed substantially to the problem, supplying two-thirds of the nitrogen dioxide and hydrocarbons in Beijing's air, according to the official *China Daily*.

Beijing alone has 1.7 million cars, and that number will rise to 3 million by the time Beijing hosts the Olympics, the newspaper said. Chinese officials announced in 2001 that they would begin imposing Euro 2 standards nationwide in 2004. In November, China began extending tax rebates for automobile manufacturers whose cars already met the standards.

AFRICA**47. Action Plan Developed For The Phase -Out Of Leaded Gasoline in East Africa**

Ninety-one participants representing governments, the private sector and civil society, met in Nairobi, Kenya, from 5 to 7 June 2002 to develop an action plan for the phase-out of leaded gasoline in East Africa.

Considering that human exposure to lead is a major environmental health hazard which results in a broad range of serious and often irreversible health consequences, especially in children; that leaded fuel prevents the introduction of cleaner engines and catalytic converters which are necessary

to achieve significant reductions in air pollution; and Recognizing that lead phase out is the essential first step to a comprehensive air pollution control strategy in East African countries; that by building linkages with existing and future initiatives as well as involving all the relevant stakeholders will ensure successful implementation of these strategies; that most countries in the East African sub-region still use only leaded gasoline ;that the undisputed health and environmental dangers of leaded fuels are a serious and growing threat in East Africa; and that there is a broad consensus among government, industry and civil society partners in favor of urgently phasing out the use of leaded gasoline; and Taking Note of the decision on phasing out of leaded gasoline at the UNEP Governing Council (Decision 21/6 of February 2001) and the Dakar Declaration on the phasing out of leaded gasoline in Sub-Saharan Africa (June 2001); the priority given to the phase out of leaded gasoline world-wide during the preparations for the World Summit on Sustainable Development (Johannesburg, August-September 2002); and the three sub-regional Workshops on phasing out of leaded gasoline in Sub-Saharan Africa, held in Abuja (November 2001), Dakar (March 2002) and Cotonou (April 2002), The participants agree that in the East Africa context, considering health, environment, technology and economic factors, options are available to remove lead from gasoline; that the only refinery in the sub-region is central to the phasing out of leaded gasoline in many countries in East Africa.

The Participants therefore recommend that the following actions be taken urgently to prepare for and execute the phasing out of leaded gasoline:

1. For East African Governments to declare their intention to phase out the

use of lead in gasoline and to organize a group of people to work on the specific modalities for the implementation of such phase out;

2. For multi-stakeholders to convene meetings in each country to develop road maps for the phase out of leaded gasoline (including fuel specifications, pricing and taxation, and enabling activities);

3. For respective authorities of East African Governments to work towards harmonization of fuel specifications in the region to ease the introduction of unleaded gasoline and facilitate regional trade, recognizing different timeframes and needs;

4. The enactment of appropriate national legislation/ regulation to ensure more stringent fuel quality –including unleaded gasoline- and emission standards, and monitoring and enforcement of these standards;

5. The development of awareness campaigns to train and educate government officials, fuel pump operators, and service attendants, and others, to promote unleaded gasoline;

6. For industry (oil, automotive, and retailers) to declare that leaded fuel is not necessary in East Africa and to provide sound technical information and authoritative statements to government and public;

7. For Governments to remove any barriers to the provision of unleaded fuel, and for oil companies and retailers to take a leadership role in ensuring that unleaded gasoline is widely available throughout East Africa;

8. For Governments and international agencies to purchase unleaded fuel only for their own vehicle fleet consumption;

9. For civil society to encourage actions by governments and the private sector to accelerate the phase out of lead in gasoline;

10. To develop public awareness campaigns addressed to the whole population focused on key health and environmental issues and reasons for phasing out leaded gasoline;

11. To develop awareness-raising campaigns addressed to car users, auto trade, mechanics, etc., focused on vehicle performance, user benefits, etc. to dispel myths about unleaded gasoline;

12. To initiate programs to gather and generate data and information in support of the awareness campaigns (ambient air quality, emissions, lead pollution, lead blood levels, vehicle population...);

13. For the National Environment Council in Kenya, as well as similar organizations in other East African countries, to put on their agenda the phase out of leaded gasoline.

To monitor progress in implementing this Action Plan, a review, organized by UNEP, will take place during the second half of 2003 (or first half of 2004) in connection with the meeting of the African Ministers of Environment (AMCEN); as part of this review each government will prepare a short report on progress, IPIECA will prepare a report on actions taken by the private sector, and civil society organizations will be invited to report on activities in relation to the action plan. UNEP will prepare a report of this review, which will be sent to all participants of the East Africa Sub-Regional Workshop.

The international organizations that have supported this workshop, IPIECA,

UNEP, USEPA, and The World Bank Group, will continue to support activities for the phase out of leaded gasoline in East Africa as well as in the rest of the world.

GENERAL

48. Diesel Soot Added To List of Global Warming Culprits

Reducing soot emissions will slow global warming faster than will reducing carbon dioxide, methane or other greenhouse gases, says a Stanford pollution expert. "If you want to control global warming, the first thing to go after is soot," says Mark Z. Jacobson, associate professor of civil and environmental engineering. "But you should not neglect carbon dioxide. Controlling fossil-fuel soot will not only slow global warming but also will improve human health."

Why is soot worse than greenhouse gases like carbon dioxide and methane? A particle made primarily of elemental black carbon, soot warms the air by absorbing sunlight and radiating the heat to the air. Greenhouse gases, in contrast, do not absorb sunlight; they warm the air by absorbing the Earth's heat and radiating it to the air. Soot does this as well.

Soot may be the second-leading cause of global warming after carbon dioxide, says Jacobson. But controlling soot will cool climate faster than will controlling carbon dioxide because soot has a very short lifetime in the air -- weeks to months -- whereas carbon dioxide has a lifetime of 50 to 1,000 years. That means soot leaves the atmosphere quickly and no longer has a warming effect.

Yet the 1997 Kyoto Protocol failed to consider this climate-changing culprit, created by burning diesel fuels, jet fuel,

coal, wood and other biomass. Most past climate-change models took into account neither soot nor its interactions with other atmospheric aerosols or clouds. Jacobson's computer model, developed over a 12-year period, does.

Jacobson says that net global warming to date is due to warming by greenhouse gases and soot, significantly offset by cooling due to reflective particles, such as sulfate and nitrate from multiple pollution sources. Eliminating all fossil-fuel soot could reduce more than 40 percent of net global warming to date in three to five years, he says. Cutting fossil-fuel carbon dioxide emissions by a third would have the same effect, but only after 50 to 200 years.

Many people mistakenly believe that diesel vehicles are better for the environment because they travel 30 percent more miles per gallon than do gasoline-powered vehicles. But diesel vehicles emit about 18 percent more carbon per gallon than do gasoline vehicles. More important, soot is a much more efficient warming agent per unit mass than is the worst greenhouse gas. That translates into greater global warming with diesel than with gasoline over the next 100 to 150 years, Jacobson says. Only after that time, with the cumulative effect of the greater fuel efficiency of diesel vehicles, does diesel overtake gasoline in terms of climate benefit. But never do the health costs of diesel fall below those of gasoline, Jacobson says.

Ways to address global warming due to

soot, Jacobson says, include tightening standards to reduce particulate emissions by a factor of four to eight, requiring industry to come up with better particle traps and switching from diesel fuel to gasoline or hydrogen fuel cells.

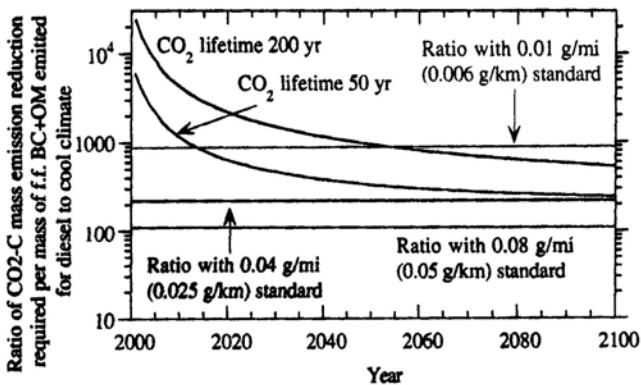
49. Antarctic Ice Melt Poses Worldwide Threat

The Antarctic Peninsula ice shelves are cracking up and, on the face of things, it is the most serious thaw since the end of the last ice age 12,000 years ago. The break-up of the ice shelves in itself is a natural process of renewal, but the size and rate of production of icebergs - some the size of major cities - is alarming scientists, who blame global warming.

The break-off last month of a 500 billion ton chunk of the Larsen Ice Shelf - 650 feet (200 meters) thick and with a surface area of 1,250 sq miles (3,240 sq km) - is the second big break since a giant iceberg broke away in 1995 and is well beyond normal activity, scientists say. The production of vast amounts of icebergs is a threat to the world's climate and the way the ocean's function, they say. And the process, once started, cannot be reversed.

The fear is that a snowball effect will lead to disintegration of the vast West Antarctic ice shelf, kilometers thick in parts.

Significant warming in parts of the pristine Antarctic wilderness is expected to continue to send huge icebergs into the Southern Ocean, and lead to the disintegration of other sections of ice shelves that fringe Antarctica's continental ice cover. A longer-term effect would be if the disintegration led to a meltdown of the grounded West Antarctic ice sheet, which would cause the world's oceans to rise by up to five meters (17 feet).



As they delve deeper into the mysteries of the southern continent, scientists are finding a jigsaw on a gigantic scale.

The Antarctic Peninsula, which juts out into the Southern Ocean, has warmed by 2.5 degrees Celsius over the past 50 years, while some other areas have cooled. Some parts of West Antarctica have been losing ice, while, like shifting grains of sand on a beach, ice has built up elsewhere.

But the main message from the world's biggest concentration of Antarctic scientists in Hobart, in Australia's southernmost city, is of retreating West Antarctic ice and massive break-offs.

Scientists are not too worried for the moment about rising sea levels. This is because floating ice shelves displace large amounts of seawater, and sea levels would effectively remain unchanged if the ice shelves disappeared. The real problems arise if the ice built up over millions of years on parts of Antarctica's land mass melts.

But scientists believe that the expected loss of half the Antarctic's sea ice by the end of the century will have important consequences for Earth's entire natural system. They are finding that the world's deep ocean circulation system will slow as the Antarctic produces smaller amounts of dense oxygen-rich seawater, possibly within 30 years, threatening marine life. The Antarctic is normally the source for a large part of the "bottom water" which feeds oxygen to global ocean depths. And computer modeling results indicate production of this dense, rich water has fallen by 20 percent from pre-industrial times.

Two technology-crammed research ships, the 1,594 ton former Arctic trawler "The Southern Surveyor" and its bigger cousin, the bright orange "Auora

Australis", ride at anchor next to CSIRO Marine Research headquarters at Hobart harbor. Both vessels are allowing scientists to probe the southern seas as never before, as they deploy thousands of robotic floats and tons of sensitive equipment in parts of the Antarctic.

A small increase in ocean temperature from climate warming could produce a doubling of the melt, which would cause the ice shelf to shrink dramatically, recede and break off, he said. Two years of physical research is proving model results, that the entire coastal shape of the 550 km long, 200 km wide Amery Ice Shelf could soon change as it melts back.

A 1999 expedition to the Antarctic south of Tasmania, near Commonwealth Bay, yielded even more alarming results. An open coastal area near Dumont d'Urville in French territory has been found to produce the most important source in East Antarctica of bottom water - "the lungs of the ocean". In the depths of winter, strong freezing winds cascade down the Arctic continent to race across the ocean surface, pushing ice floes away, forming new sea in open water near the coastline. The oxygen-rich highly saline seawater, which remains, sinks to the ocean floor to form 20-25 percent of Antarctica's total bottom water production, which then circulates the globe, promoting ocean circulation and life.

One question is whether disappearance of half the Antarctic's sea ice by the end of the century would also halve the Southern Ocean's krill, the tiny planktonic crustaceans that are most abundant animal organism on earth. Krill, the keystone of the Antarctic ecosystem and bread and butter for seals, penguins and whales, need ice for sanctuary and for food from algae.

50. New Swedish Study Highlights Benefits of PM Filters¹

The transport sector contributes significantly to the air pollution. In one particular aspect, the light-duty vehicles have been subject much interest lately, and this is regarding the particulate emissions from diesel-fuelled cars. Since the market penetration of diesel cars has been increasing in most markets in Europe (to over 30% in 2001), this issue has become even more pronounced. Sweden has been an exemption in this respect. Here, the market penetration has been slowly decreasing during the last 3 years and now it seems to have stabilized at level of slightly above 5%. In order for the vehicle manufacturers to meet the agreement to reduce CO₂ emissions in the future, an increased market share of diesel cars is a possible route.

As there are relatively few data on unregulated emissions from modern diesel cars, it was of particular interest to generate such data. It was also considered important to compare these data with data on modern petrol-fuelled cars.

Four cars were selected for the investigation:

- A diesel-fuelled Peugeot 307 2.0 HDi FAP, equipped with a particulate filter
- A diesel-fuelled VW Golf 1,9 TDI (without particulate filter)
- A petrol-fuelled Peugeot 307 with 1.6 liter engine
- A petrol-fuelled VW Golf with 1.6 liter engine

The cars were tested according to the

¹ "ENVIRONMENTAL AND HEALTH IMPACT FROM MODERN CARS: A comparison between two petrol and two diesel cars with varying emission control technology", A report for the Swedish National Road Administration Ecotraffic ERD3 AB, Peter Ahlvik

NEDC cycle at ambient temperatures of +22°C and -7°C. In addition, the US06, having a more aggressive driving pattern than the NEDC driving cycle was chosen to reflect this type of driving. Finally, overtaking of a lorry was simulated to generate data on full load operation. Measurements of regulated and several unregulated emission components were carried out, including air toxics and particle size distribution.

The results on HC emissions show that the level was generally significantly higher for the petrol cars than for their diesel counterparts. Moreover, HC emissions from petrol cars were more influenced by the ambient temperature than are diesel cars. The use of advanced technology for reducing cold start emissions in general could reduce the HC level considerably in the future. The lower HC emission level for the diesel cars generally also indicates lower levels of toxic volatile organic compounds. This was also the case for most of these emission components.

The results on NO_x emissions - generally considered as a main problem for diesel cars - confirm the expectations of a higher level for diesel cars. Petrol cars exploit reduction of the NO_x emissions in a so-called three-way catalyst (TWC), while the oxidation catalysts on diesel cars have very little influence on the NO_x emissions. Somewhat surprising was the considerably higher NO_x level at the lower ambient temperature for the diesel cars.

Particulate emissions are considered a major emission problem for diesel cars. As expected, the particulate level was also highest for the diesel car without a particulate filter, although the level for this car was actually lower than the Euro IV limit. The particulate emissions were generally lower for the diesel car with a particulate filter than for the petrol cars.

The petrol cars had a higher particulate level at the low ambient temperature than at the “normal” test temperature. However, the level at the low temperature was significantly lower than in previous results in the literature, indicating a considerable improvement in this area.

The particle number and particle size distribution was measured with an electrical low pressure impactor (ELPI). This instrument measures particle number at 12 stages for an aerodynamic particle size between 7 nm and 6 µm. One of the features of the ELPI instrument is that it can measure the particle emissions in real-time.

The particle number in NEDC was highest for the diesel car without a particulate filter. The two petrol cars had a level that was roughly two orders of magnitude lower. The diesel car achieved the lowest level with a particulate filter, i.e. about one order of magnitude lower than for the petrol cars.

In the US06 cycle, the particle number compared with the results in NEDC increased considerably for the petrol cars to roughly the same level as for the diesel car without a particle filter. The level during overtaking was lower for the petrol cars than in the US06. In both tests, the diesel car with a particulate filter had very low total number of particles, i.e. several orders of magnitude lower than the other cars.

The ozone formation potential was generally lower for diesel cars than their petrol counterparts. The reason is primarily due to the significantly lower HC emissions in comparison to the petrol cars. However, it should also be noted that the level was generally considerably lower for the newer cars than for the older cars, regardless of fuel used.

The results for the cancer risk index show that the level for the cars tested in this study was significantly lower than for the old cars. Due to the uncertainty regarding the unit risk factor for each one of the emission compounds, and the scatter between the cars, it is somewhat difficult to conclude whether diesel or petrol cars have a lower level. The contribution to the cancer risk index was dominated by the polycyclic aromatic compounds (PAC) for the petrol cars. These emissions are primarily emitted at low ambient temperature.

For diesel cars without particulate filters, particulate emissions contributed most to the cancer risk. The virtual elimination of the particulate emissions by using a particulate filter had a considerable impact on the cancer risk index.

Oxides of nitrogen (NOX) and sulphur (SOX), as well as ammonia (NH₃), contribute to acidification. However, fuel production has also to be taken into account, as acidification could be considered as a regional impact. As the NOX level was very low for the petrol cars, as well as the sulphur level was for the petrol used, the acidification is dominated by fuel production for the new petrol cars. Diesel cars had a high NOX level and this was the reason for the high level for these cars. In this case, the contribution from fuel production was lower than for the petrol cars.

51. New Study Links Air Pollution and Children's Health

A cohort of 1,678 Southern California children, enrolled as fourth graders in 1996, was followed for 4 years to determine whether the growth in lung function of the children was associated with their exposure to ambient air pollutants. These subjects comprised the second cohort of fourth grade

children participating in the Children's Health Study.² Significant deficits in lung function growth rate were associated with exposure to acid vapor, NO₂, particles with aerodynamic diameter less than 2.5 µm (PM_{2.5}), and elemental carbon. For example, the average annual growth rates of maximal midexpiratory flow and forced expiratory volume in 1 second were reduced by approximately 11% (p = 0.005) and 5% (p = 0.03), respectively, across the observed range of acid exposure. Exposure to acid vapor was also associated with reductions in the ratio of maximal midexpiratory flow to forced vital capacity (p = 0.02), whereas exposure to ozone was correlated with reduced growth in peak flow rate (p = 0.006). Larger deficits in lung function growth rate were observed in children who reported spending more time outdoors. These findings provide important replication of the study team's previous findings of an effect of air pollution on lung function growth that were based on the first fourth-grade cohort from the Children's Health Study (*Am J Respir Crit Care Med* 2000;162:1383–1390).

52. UNEP Says World Facing Critical Choices On Environment

The world is at an environmental crossroads where the choice between greed and humanity will decide the fate of millions of people for decades to

come, the United Nations Environment Program said in a new report, the third Global Environment Outlook report. The GEO-3 report, designed to kick world leaders into action ahead of the Johannesburg earth summit in late August, sees a bleak outlook for the future unless radical action is taken now.

"The choices made today are critical for the forests, oceans, rivers, mountains, wildlife and other life support systems upon which current and future generations depend," it said.

The report painted four possible scenarios ranging from the greed-driven "markets first" future to the caring and sharing "sustainability first" approach. Under the first, three percent of the earth's surface disappears under concrete by 2032, more than half the population is living with drought, 70 percent of the remaining land and animals are under threat and 16 billion tons of carbon dioxide is being belched into the air each year from fossil fuels. Under the latter scenario, cities and highways eat up less land, drought is kept at bay by better water management, the pressure on land and animals stabilizes and global carbon dioxide emissions stabilize at just half the greed policy route.

In the decade since the first world earth summit in Rio de Janeiro 58 species of fish, one mammal and one bird species have become extinct and a remaining quarter of the world's mammals and one in eight of its birds are on the critical list.

Life-giving forests are being ripped apart, fertile land is disappearing under concrete or into the sea and waterways are drying up or dying of pollution.

Dire poverty, hunger and sickness are rampant across the planet and the globalization of trade is carrying with it

² "Association between Air Pollution and Lung Function Growth in Southern California Children, Results from a Second Cohort", W. James Gauderman, G. Frank Gilliland, Hita Vora, Edward Avol, Daniel Stram, Rob McConnell, Duncan Thomas, Fred Lurmann, Helene G. Margolis, Edward B. Rappaport, Kiros Berhane and John M. Peters

pollution on a global scale.

The world's seas, already under attack from litter and poisons, are also being plundered by man to the extent that nearly one-third of the world's stock of fish is now ranked as depleted, overexploited or recovering, the report said.

53. Global Warming Blamed For Melting Everest Glacier

A glacier from which Sir Edmund Hillary and Tenzing Norgay set out to conquer Mount Everest nearly 50 years ago has retreated five km (three miles) up the mountain due to global warming, a U.N. body says. A team of climbers, backed by the United Nations Environment Program (UNEP), reported after their two-week visit last month that the impact of rising temperatures was everywhere to be seen.

During their visit, the team of climbers from the International Mountaineering and Climbing Federation (UIAA) spoke to the head of the Nepal Mountaineering Association, Tashi Jangbu Sherpa, who told them that the ice fields had seen rapid change over the past 20 years.

UNEP recently warned that more than 40 Himalayan glacial lakes were dangerously close to bursting, threatening the lives of thousands of people, because of ice melt caused by global warming.

54. Revision To Worldwide Fuel Charter To Focus on Elimination of Lead

On behalf of automobile and engine manufacturers from around the world, the World-Wide Fuel Charter Committee has developed the newest draft edition of the World-Wide Fuel Charter. The Charter was first established in 1998 to promote greater understanding of the

fuel quality needs of motor vehicle technologies and to harmonize fuel quality worldwide in accordance with vehicle needs.

Regions of Asia, Europe and North America have been adopting and continue to explore stringent new requirements for lowering vehicle emissions and the opportunity for reducing fuel consumption. To cope with these emerging needs, automobile and engine manufacturers have concluded from existing research that the sulfur levels of both gasoline and diesel fuel must be dramatically lowered to enable advanced and future motor vehicle technologies to meet these new requirements. The most stringent of these requirements led to the recommendation for sulfur-free fuels in Category 4, which the Committee adopted in 2000.

The Committee is pleased that so many countries around the world have begun taking steps to reduce the sulfur content in gasoline and diesel fuel.

At the other end of the spectrum, more than 100 countries around the globe continue to allow the use of lead in their gasoline. Leaded gasoline poses a serious, direct threat to public health and is a barrier to the introduction of automotive emission control systems that can reduce exhaust emissions by 90 percent or more over uncontrolled levels. It also impedes global harmonization of vehicle technology. Automakers and engine manufacturers around the world support efforts to end the use of lead in gasoline. The key change in this 3rd edition of the Fuel Charter is the elimination of any allowance for lead use anywhere in the world.

Some areas that are reducing the use of lead may be using metallic or ash-forming substitutes that also may harm

emission control systems. This Charter revision recommends against the use of any metal-based additives replacing lead in commercial fuels to avoid health risks and damage to catalysts.

55. Appendix A: Summary of 2007 Truck Court Decision

D. Background

A set of challenges were filed in the United States Court of Appeals for the District of Columbia Circuit to the 2007 EPA rule affecting diesel fuel and engines. Numerous parties, including engine manufacturers (including Cummins Inc.), automobile makers, and fuel refiners, challenged the rule on various grounds, while others, including environmental groups and states, defended it. The Court denied all the petitions.

E. Cummins's Challenges

i. Feasibility of NOx and PM Standards

Cummins argued that the EPA acted arbitrarily and capriciously in concluding that engine manufacturers will be able to develop emissions-control systems satisfying the new rule. According to Cummins, the EPA failed to make "reasonable extrapolations," or to "provide a reasoned explanation for believing that its projection is reliable".

In reviewing these issues, the Court noted that EPA was "not obliged to provide detailed solutions to every engineering problem," but had only to "identify the major steps" for improvement and "give plausible reasons for its belief that the industry will be able to solve those problems in the time remaining." Since the EPA is authorized to adopt "technology-forcing" regulations, a petitioner's evidence that current technology is inadequate is not enough to show that the EPA was arbitrary in predicting future success.

Availability of Adequate NOx Adsorbers

Cummins asserted that no NOx control system will be capable of meeting the EPA's 2007 standards and presents three reasons to support this conclusion; ultimately, the Court is convinced by none.

First, Cummins argued that though the EPA standards in effect require NOx adsorbers to operate at 90% efficiency, rapid degeneration would prevent them from lasting for anywhere near the useful life of a heavy heavy-duty diesel engine. In rejecting this point, the Court noted that EPA never denied that degradation is currently something of a challenge; however, what matters to the Court is whether the EPA was arbitrary or capricious in predicting that degradation could eventually be controlled and the judges clearly concluded that EPA was not.

In a closely related argument, Cummins urges that the desulfation process is an intractable obstacle to long-lasting NOx adsorbers. To prevent degradation, NOx adsorbers must periodically be subject to "desulfation," a process that removes sulfur. Desulfation, however, requires that exhaust temperatures be increased--and this in turn poses a risk of so-called "sintering," in which the catalysts are melted. Sintering degrades the device's future NOx absorbance. The result, according to Cummins, is a technical "catch-22" that pulls manufacturers in "conflicting directions." On one hand, desulfation should happen often and at high temperatures to prevent clogging by sulfur; on the other hand, frequent, high-temperature desulfation itself degrades NOx absorbance. As Cummins sees it, the EPA presents no reason to think that this technical obstacle will be overcome, other than "unsupported predictions of government and private-sector observers, who assert in conclusory fashion that

technology that overcomes these inherent problems will develop in due time." Cummins's argument turns on its heavy discounting of the studies relied on by EPA.

Cummins says that the Ford Study is not strictly relevant because it was performed using a "pulsator," a device that burns synthetic gases and injects pollutants to test catalyst performance. Cummins seems to regard it as self-evident that the use of a pulsator leads to inaccurate or inapplicable results. The EPA argues in response that the pulsator experiment does shed light on the ability of NO_x adsorbers to withstand desulfation. As Cummins gives no articulable reason to doubt this conclusion, the Court cannot fault the EPA for having relied on the study.

As for Cummins's objection that further Ford experiments found significant degradation, the EPA observes that these further experiments were conducted at temperatures of 900 to 1000 degrees Celsius whereas a "heavy-duty diesel engine in contrast rarely has exhaust gas temperatures in excess of 500°C." Given the adverse effect of excessive heat, this seems to the Court to be a pertinent response.

Cummins complains that the DECSE study showed that while desulfation did improve adsorber performance (compared to a sulfur-clogged state), it did not return the adsorber's performance to prior levels. Moreover, the DECSE study showed that even without the presence of sulfur, the desulfation-phase temperatures caused a "continued decline in the catalyst's desulfated performance."

The EPA, for its part, admits that the equipment used for the DECSE test was not optimized for durability, but notes that the EPA already pointed out several engineering steps that would help

adsorbers "to better withstand potential thermal sintering from desulfation." For example, the EPA cited technical solutions used in light-duty vehicles, such as "modifications to the catalyst supports and surface structures that stabilize the precious metals at high temperatures," and "strengthening of crystalline lattice structures." Other steps identified by EPA include careful control of maximum temperatures during desulfation, and lowering the air-to-fuel ratios.

Finally Cummins argues that compliance with the Federal Test Procedure will be impossible because of reduced performance during the so-called "cold start" section of that test. The NVFEL tests did not include the cold-start portion of the Federal Test Procedure. This was because the "adsorber system was not optimized for cold start performance," though why such optimization was left undone, the Court noted that it does not know.

EPA says that Cummins wrongly depicts the "cold start" test period as if the engine and exhaust system were cold throughout the period. But in fact the emission control system warms up throughout the "cold start" period. EPA cites--by way of analogy--tests done on gasoline engines that found that catalyst temperatures of 450 degrees could be reached in a mere 30 seconds after a cold start. If similar steps were taken for diesel engines, then the portion of the Federal Test Procedure that would be conducted in a genuinely "cold state" would make up a trivial percentage of the weighted score for the test. Moreover, the RIA discussed a number of ways by which cold start performance could be improved. Cummins has not shown that EPA was arbitrary in believing that, collectively, they would provide an adequate solution.

In sum the Court finds no basis for

reversing EPA's prediction of the future development of adequate NOx adsorbers.

Availability of NOx Sensors

Cummins asserts that the new standards for 2007 will require NOx sensors that are not and will not be available. Cummins points out that regeneration (essential for burning off the accumulated NOx from the NOx adsorber) has to be triggered by a NOx sensor that measures the rising levels of NOx in exhaust gas (as rising levels indicate degenerating performance of the adsorber). But, says Cummins, such sensors "do not exist." Cummins believes the studies relied on by EPA fail to support its belief in the future availability of such sensors.

EPA relied in part on the "Kato" study as demonstrating that current NOx sensors are "capable of detecting NOx emissions in the 100 ppm range." Cummins notes that the paper shows data only from the 70 ppm to 400-ppm range, and argues that it is impermissible to extrapolate the results to the 15-ppm range because errors that are relatively minor at a high level would be fatal at a low one. If this were EPA's sole basis, and if EPA were required to show present availability of proper sensors, this might be a winning argument. Neither is true.

EPA also relies on the NVFEL test program, which successfully used NOx sensors. Cummins argues that during this test program regeneration was controlled manually, so that the test failed to prove that sensors could control regeneration in real-life situations. The EPA, by contrast, seems to imply that NOx sensors were used to trigger every regeneration event. In fact, neither side is precisely correct. For the NVFEL tests, the engineers first performed a process they called "steady state optimization," the function of which is to figure out the conditions for regeneration

that will minimize emissions and fuel economy impact. The optimization methods used, including the ones in which manual operation played a role, involved the use of a NOx sensor to determine the best time for regeneration. But for the actual tests of emissions, the engineers used a "time-based regeneration schedule," so that "regenerations occurred at predetermined engine conditions during the transient cycle." So, while it may be literally true (as Cummins says) that the ultimate test results do not directly prove that a NOx sensor could independently trigger regeneration as needed, the test offers indirect proof, as NOx sensors were essential in optimizing the system so that the NOx adsorber could reduce emissions by greater than 90 percent. Cummins thus fails to show arbitrariness in the EPA's prediction that adequate NOx sensors will be available.

More generally, the EPA claims that adequate NOx sensors have already been developed. Contrary to Cummins's implication, EPA concludes that a NOx sensor can successfully "be used to control both NOx regeneration of a NOx adsorber system, and diagnosis of the NOx adsorber system."

Again, in the opinion of the Court, Cummins has not shown that the EPA acted arbitrarily or capriciously.

Feasibility of the Crankcase Standard

Here Cummins argues that it is not feasible to eliminate the prior exception that allowed crankcase emissions from heavy-duty engines. EPA envisions that eliminating crankcase emissions will require manufacturers either to (1) use a crankcase filtration system, with "blow-by" gas routed to the engine's air-intake system, or (2) route the emissions into the exhaust system upstream of the emissions control equipment.

According to Cummins, however, the filtration systems are only 80% effective,

leaving 20% of crankcase emissions to go back and foul the intake system. The EPA notes, however, that such filtration systems are already required in Europe, and have been used on a Mercedes heavy-duty diesel engine in the United States since 1999. Cummins presents no evidence that these systems have caused material fouling of turbochargers.

Cummins also complains that the EPA made no findings whatever about the durability of crankcase filtration systems; this is of concern because the systems would be required to last 50,000 miles or 1,500 hours. But the issue was not raised until now and is therefore waived by the Court. Because the rule can stand so long as there was one solution as to which EPA's prediction was not arbitrary, the Court noted that it would not proceed to evaluate the second option--venting crankcase emissions into the exhaust system.

The Effects of Sulfur

Cummins argues that even with fuel sulfur reduced as low as 15 ppm, sulfur can still cause PM emissions that are up to 60% of the 2007 limit. Standing alone, the point seems meaningless to the Court (as 60% is less than 100%). Cummins seeks to render it meaningful by also arguing that EPA failed to consider potential increases in PM resulting from crankcase emissions and cold-start problems. But as EPA points out, Cummins failed to raise these in the rulemaking, so they are waived.

ii. Accuracy of Measuring Equipment

Cummins's second main argument is that there will be no testing equipment accurate enough to measure the extremely low emissions required by the new regulation. Assuming this to be true (and some such errors are inevitable), it would not provide a basis to upset the rule. The possibility of statistical measurement error ... merely deprives the agency of the power to find a

violation of the standards, in enforcement proceedings, where the measured departure from them is within the boundaries of probable measurement error. Furthermore, if the test methods eventually adopted raise a greater potential for error than is practical or necessary, a reviewing court may order revisions. Accordingly, issues about the reliability of testing methods can be addressed at a later stage.

iii. Possible Misfueling in Canada and Mexico

Cummins's last main argument is that the rule unlawfully exposes manufacturers to the risk of recalls resulting from the "poisoning of catalysts from fueling of vehicles in Mexico and Canada." But in the Court's view, the risk, if not simply nil, is so remote as to render the claim unripe. If the alleged poisoning occurs, Cummins would apparently have a good defense to a recall action. The recall-authorizing statute provides that a recall can be ordered only if "a substantial number of any class or category of vehicles or engines, although properly maintained and used, do not conform to [the emission standards]." On Cummins's scenario, the border-crossing trucks would not have fulfilled the proper maintenance condition. Indeed, EPA explicitly abjured any right to demand recalls for exceedences caused by "the use of high-sulfur (>500 ppm) fuel in Alaska during the period of the temporary sulfur exemption" that it had granted in reference to Alaska.

F. Diesel Fuel Sulfur Standard

EPA is empowered to regulate fuel content if the Administrator either determines that (A) "any emission product of such fuel ... causes, or contributes, to air pollution which may reasonably be anticipated to endanger the public health or welfare," or (B) "emission products of such fuel ... will

impair to a significant degree the performance of any emission control device or system which is in general use, or which ... would be in general use were such regulation to be promulgated." The Court first considered whether EPA's 15-ppm sulfur rule is justified as protecting public health or welfare. Determining it is not, the Court considered whether EPA's decision to regulate diesel fuel in order to prevent impairment of sulfur-sensitive emission control devices was arbitrary, capricious, or otherwise contrary to law. The Court concludes it was not. Finally, the Court considered and rejected the remaining challenges to the 15-ppm sulfur rule brought by petitioners National Petrochemical & Refiners Association, et al. ("NPRA"), and denied their petition for review.

iv. Basis for the Diesel Fuel Standard

At the outset, EPA argues that the ultra-low diesel fuel standard of 15-ppm sulfur is justified as a regulation to protect public health or welfare as well as to prevent impairment of sulfur-sensitive control technology. Because NPRA only challenges EPA's determination under the availability of sulfur-sensitive control technology, EPA contends that the Court must dismiss the petition for review. However, the Court agrees with NPRA that EPA has not justified the 15-ppm sulfur requirement under the "public health or welfare" rubric. Although it is possible EPA could have justified the 15-ppm sulfur limit based on effects on public health and welfare, the Court concludes that EPA has not done so.

v. Sulfur-Sensitive Control Technology

NPRA argues that EPA's 15-ppm sulfur requirement is arbitrary, capricious, and contrary to law because EPA has failed to show that the emission-control technology requiring ultra-low sulfur fuel is in or near general use. Specifically NPRA contends that NOx adsorption

technology requiring 15 ppm sulfur diesel fuel will not be "in general use" even if this fuel standard is adopted. Further, NPRA argues that the PM control technology does not require ultra-low sulfur fuel. The Court concludes that EPA has reasonably determined that NOx adsorption technology will be available. Although some research remains to be done to solve the problem of catalyst sintering, petitioners have identified no theoretical barriers to the development of NOx adsorbers. "In the absence of theoretical objections to the technology, the agency need only identify the major steps necessary for development of the device, and give plausible reasons for its belief that the industry will be able to solve those problems in the time remaining." Here EPA notes that NOx adsorbers are used in gas turbine systems and natural gas fired powerplants. EPA claims that the "differences between these current applications of the NOx adsorber technology and the future use of NOx adsorbers to control NOx emission from diesel engines lies only in the need to adapt the diesel engine operation to the NOx adsorber performance." It is only necessary that a desulfation cycle be developed--and EPA cites evidence that such research is under way. EPA has evidence that application of this technology is feasible, appears to have set forth an engineering path rather than mere optimism, and has given a reasoned explanation why it believes this path can be followed. That is sufficient: "EPA is not obliged to provide detailed solutions to every engineering problem posed in the perfection of the [technology]?"

NPRA also contends that the decision to regulate was arbitrary and capricious because EPA overlooked sulfur-resistant technology, namely Selective Catalytic Reduction ("SCR"). Petitioners argue that EPA treated NOx adsorption

technology and SCR technology inconsistently--having optimism for the former and disfavoring the latter. That may be. Nonetheless, EPA is entitled to deference in its evaluation of technologies, and in any event EPA identified several practical obstacles to the widespread implementation of SCR technology. In particular, SCR systems require refilling with urea on a regular basis (3-6 gallons for every 100 gallons of fuel) in order to operate and are subject to abuse. Failure to replenish the urea does not cause a loss in driving performance (so truckers may have little incentive to spend resources on urea) but does reduce emissions reductions. Furthermore, there is currently no system in place to distribute urea to truck stops or other retail outlets for dispensing into vehicles, and the evidence before EPA would support a determination that these problems would not be solved by model year 2007. Given these concerns, EPA reasonably determined that SCR was not a viable means of achieving NOx emissions reductions, and that sulfur-sensitive technology, and thus ultra-low sulfur diesel, would be required.

EPA's determination that NOx adsorption technology is viable and necessary justifies the 15-ppm sulfur diesel fuel standard; therefore, the Court need not consider whether the diesel fuel standard is necessary for the operation of PM control technology.

vi. Other Challenges to the Diesel Fuel Standard

NPRA raised several other objections to the diesel fuel standard, most of which may be dismissed summarily. First, petitioners contend that the phase-in renders the 15 ppm standard arbitrary and capricious. Although the Court finds that petitioners have standing (because of the alleged harm to distributors in carrying the extra grade of fuel), it finds no merit to the claim that the phase-in undermines the fuel standard and reject

the claim that the decision to phase-in ultra-low sulfur diesel is arbitrary and capricious. Similarly, although the Court finds petitioners to have standing to challenge the selection of ASTM Method 6438 as the primary test method, it finds nothing arbitrary or capricious in EPA's selection of this test method. Third, petitioners' argument that EPA failed to comply with the Regulatory Flexibility Act is devoid of merit.

Finally, that brings the Court to NPRA's allegation that the decision to require 15 ppm sulfur content will result in a shortfall in diesel fuel. Although the Court ultimately rejected this claim, it required more elaborate consideration. If EPA promulgated a regulation that would in fact result in a diesel fuel shortage or energy crisis, it would be acting arbitrarily and capriciously--failing to give "appropriate consideration to cost [and] energy" in setting emissions standards, and failing to consider the "economic data" in regulating diesel itself. Therefore, if EPA's assessment of diesel fuel availability under its regulation of diesel fuel is unreasonable, then it has not properly considered all of the relevant factors and its fuel regulation should be vacated and remanded as arbitrary and capricious.

Petitioners argue that EPA's estimating technique for assessing highway fuel loss due to cross-contamination in the pipeline system is inadequate. They contend that when ultra-low sulfur diesel fuel and non-highway diesel fuel are transported in tandem, the former will be contaminated by the sulfur in the latter at the interface volume. This contaminated fuel cannot be used as highway fuel, as it would damage the emission control devices. EPA assumed that this loss would be only twice the current loss from transport of 500-ppm sulfur diesel fuel and non-highway diesel fuel. EPA's fundamental assumption was that the interface

volume would not change. However, as petitioners argue, this fundamental assumption may be incorrect.

Petitioners point out "EPA considered only pipeline diameter and length in calculating today's losses, but not the different sulfur concentrations in the various products in pipelines or the relative margin for error given the very low allowed sulfur level." For example, "[i]t would take less than 0.5 percent of 3000-ppm sulfur containing product to contaminate [ultra low sulfur diesel] ... to a level above EPA's maximum of 15 ppm." Petitioners note that "the size of the interface volume pipeline operators will presume is affected by adjoining products is likely to grow dramatically with [ultra low sulfur diesel]," but that EPA has assumed the interface volume will remain constant. Additionally, EPA may further have underestimated the contamination loss by failing to consider diffusion from residue on the walls of the lines carrying the fuel.

Even assuming EPA made missteps in calculating cross-contamination, the burden is on petitioners to demonstrate that EPA's ultimate conclusions are unreasonable. Cross-contamination is only a sub-issue of the critical question of adequacy of projected supply. Petitioners have failed to show that EPA's overall determination that there will not be a diesel shortfall is unreasonable. EPA contends that there are adequate economic incentives to ensure that refiners will not abandon the highway diesel market, and that several refineries would have incentive to enter the diesel market. Although EPA's effort at estimating losses due to cross-contamination may be flawed, petitioner fails to show that cross-contamination will result in a shortfall. Therefore, while perhaps EPA could have been more thorough, the Court denies the petitioners' challenge.

In sum, the Court denies all of the challenges brought by NPRA to the 15-ppm sulfur diesel fuel standard.

G. Mack Truck Petition

Petitioner Mack Truck challenges EPA's changes to its Averaging, Banking and Trading ("ABT") program. This program allows engine manufacturers who produce engines cleaner than those required by the regulations to generate "credits" that they may then use to offset higher emitting engines ("averaging"), save for future use ("banking"), or sell to other manufacturers ("trading"). Traditionally, EPA has prohibited engine manufacturers from applying credits generated by light heavy-duty or medium heavy-duty engines to heavy heavy-duty engines. The new rule allows such cross-subclass averaging, but only during the 2007-09 phase-in period. Furthermore, when manufacturers use credits from one diesel engine class in calculating the emissions of another diesel engine class, credits are discounted by 20%. Cross-subclass banking and trading remain prohibited.

Mack's complaint about these new provisions stems from the fact that it makes only heavy heavy-duty engines. According to Mack, because manufacturers cannot make a compliant heavy heavy-duty engine without sacrificing some fuel efficiency and because Mack's customers are extremely sensitive to cost increases generated by decreased fuel economy, the new rule will likely force Mack to purchase emissions credits from manufacturers of the same engine class. Anticipating these harmful consequences, Mack urged the Court to find the revised ABT program's allowance of cross-subclass averaging unlawful because EPA failed: (1) to give interested parties notice and opportunity to comment; (2) to summarize in the

record conversations had with Mack's competitors; and (3) to give a reasoned explanation of its new program. EPA contests these claims.

The Court concluded that it could easily dispose of the procedural challenges to the ABT program. Setting a high bar for such challenges, the Clean Air Act requires the challenger to demonstrate a "substantial likelihood" that the rule would have been "significantly changed" absent the alleged error. EPA argues that because Mack not only had actual notice of the proposal to allow cross-subclass averaging but, in fact, submitted comments, it cannot possibly meet this standard. Mack disagrees, explaining that it heard of the proposal only through a "casual conversation" with a competitor rather than directly from the agency.

Despite Mack's contention that it was merely "speculat[ing] on rumor" when it submitted comments, the record indicates that the company was "aware" that EPA was considering abolishing the prohibition on cross-subclass averaging. To begin with, in support of the proposition that Mack heard of the change only through a "casual conversation" with a competitor, the company cites its own petition for reconsideration, which in turn cites an attached declaration that nowhere addresses the issue of how Mack learned of the proposal. Moreover, the extensive comments that Mack submitted on December 15th give no indication that the company had any doubt about what EPA was proposing. In fact, in its comments, Mack expressly states that "[i]n discussions with the Engine Manufacturers Association, [EPA] has indicated its intention to include in [the 2007 Rule] provisions that would allow for averaging, trading and banking of emissions across subclasses of heavy-duty diesel engines."

Mack next argues that even if adequate, the notice was not "fair" because it gave the company less than three weeks to respond to the proposal, resulting in "hurried" and ill-prepared comments. But even with more time, Mack made basically the same arguments in its petition for reconsideration that it made in its initial comments; therefore, the Court thinks it quite unlikely that the rule would have been "significantly changed" had Mack received earlier notice.

Equally without merit is Mack's next procedural claim: that EPA failed to include in the administrative record discussions held with Mack's competitors, as required by the Clean Air Act's docketing provision. Mack has neither alleged that EPA relied on any critical "information or data," obtained from the disputed conversations nor provided any other reasons to think that there is a "substantial likelihood" that EPA would have "significantly changed" the rule had it received the full content of the conversations. In any event, Mack not only received actual notice of the proposed changes, but it submitted comments, which EPA considered.

Challenging the substance of the ABT program, Mack contends that the agency failed to provide a reasoned explanation for its "sudden reversal of its previous, long-standing position against cross-class averaging." As EPA points out, however, a provision that temporarily allows cross-subclass averaging from 2007 through 2009, but retains the prohibition against banking and trading, can hardly be considered a wholesale reversal of a general policy against cross-subclass averaging, banking, and trading. In any event, EPA fully explained its decision, noting that the revised ABT program adds flexibility during the transition to the new emissions standards. Any adverse environmental effects, EPA observed,

would be eliminated by the temporary nature of the cross-subclass averaging and by the 20% discount applied to credit use. Responding to the claim of anti-competitive effects, EPA explained that although it "tries to avoid introducing competitive ... disadvantages when it establishes new emissions control programs, it is not a result [EPA] can ensure; nor is that the primary goal for EPA under the statute."

H. Petition of AAM/AIAM

Petitioners Alliance of Automobile Manufacturers and Association of International Automobile Manufacturers (collectively, "Alliance") challenged as arbitrary and capricious the 2007 Rule's failure to require ultra-low sulfur diesel fuel "in time to enable ... [light-duty diesel vehicles] to comply" with emissions standards promulgated by EPA in a previous rule-making, the so-called "Tier 2 Rule." In addition to defending the merits of the 2007 Rule, EPA argues that Alliance's petition is actually a challenge to the Tier 2 Rule and as such time-barred by 42 U.S.C. s 7607(b)(1), which requires all petitions for review to be brought within sixty days of promulgation. The Court agreed with the latter argument. Promulgated on February 10, 2000, the Tier 2 Rule established new emission standards for light-duty vehicles (basically passenger cars and pickup trucks).

The Tier 2 Rule set emission standards without establishing diesel sulfur limits, and the 2007 Rule altered none of these standards. The Alliance, moreover, concedes that it raised the low sulfur fuel issue in comments to the Tier 2 proposal. EPA considered those comments and concluded "the interim standards [were] feasible for diesel [vehicles] without further reductions in diesel fuel sulfur." With regard to the ability of light-duty diesel vehicles to

meet the final standards (triggered in 2007), EPA felt that ultra-low sulfur diesel fuel would likely be required but concluded that "[g]iven the significant potential costs of such fuel changes and the small percentage of [light-duty vehicles] using diesel fuel ... it [was] inappropriate to make such changes in the context of a rule regulating light-duty vehicles and engines." If the Alliance believed the emissions standards contained in the Tier 2 Rule were infeasible without ultra-low sulfur diesel fuel, it should have petitioned for review of that rule.

Calling the 2007 Rule a "supporting regulation," Alliance argues that a challenge to the Tier 2 Rule would have been a "waste of judicial resources," pointing out that the Court has in the past "upheld an otherwise valid ... regulation whose validity hinged upon an adequate supporting regulation that the Court nevertheless found wanting." The Alliance has conserved no judicial resources by waiting to challenge a failure to require ultra-low sulfur diesel fuel now rather than at the time of the Tier 2 Rule's promulgation.

Nor can Alliance rely on the "reopening" doctrine under which a review period "starts fresh ... if an agency reopens [an] issue by holding out [an] unchanged section as a proposed regulation, offering an explanation for its language, soliciting comments on its substance, and responding to the comments in promulgating the regulation in its final form." As EPA points out, although some automakers did submit comments advocating that ultra-low sulfur diesel fuel be made available earlier, EPA responded: "Our feasibility analyses as presented in the Tier 2 Rule ... remain our policy regarding light-duty diesel vehicles. We have not reexamined or reopened the issues regarding the Tier 2 standards."

I. Conclusion

The petitions for review are denied.

So ordered.