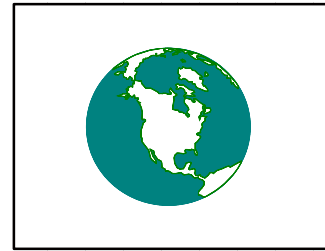


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CAR LINES

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*HAPPY HOLIDAYS TO ALL AND BEST WISHES FOR A
PEACEFUL NEW YEAR*



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EUROPE

1. EU Commission Issues Euro VI Truck Proposal

The European Commission has proposed to reduce emissions from trucks and busses of nitrogen oxides by 80% and particulate matter by 66% compared to the Euro V stage. The new 'Euro VI' standard will significantly contribute to a further improvement of air quality in Europe. It will also be a step forward towards global harmonization as it foresees limit values similar to those of the United States of America. Furthermore current legislation will be simplified as directives (which need to be transposed in 27 different national legislations) will be replaced by regulations which are directly applicable. The Euro VI should enter into force in 2013. The proposal has been subject to stakeholder and internet consultations, and will now be discussed by the European Parliament and the Council of Ministers.

Commission Vice-President, Günter Verheugen, responsible for enterprise and industry, said: "More stringent emission limits will pave the way for cleaner trucks and buses. This is good for the health of our citizens and the environment. Industry gets a clear perspective and the time to prepare to produce clean, high quality vehicles without endangering its competitiveness."

Although air quality has improved over the past decade, there remain significant air quality problems throughout the European Union, especially in urban areas and densely populated regions. To address this problem, the Euro VI proposal lays down common EU rules on heavy motor vehicles with regard to pollutant emissions. The proposal has been developed following the principles of Better Regulation and the recommendations from the High Level Group for Competitive Automotive Regulatory System for the 21st century (CARS 21). In particular:

- the feedback received in the public consultation has been fully taken into account;
- the cost and benefit of different options have been evaluated in an impact assessment;
- the current directives will be repealed and will be replaced by directly applicable regulations thus reducing the delays inherent in the transposition of directives;
- The proposal leads to global harmonization in that it foresees limit values similar to those of the United States of America.

In addition to more stringent limit values, the proposal introduces provisions on off cycle emissions, on-board diagnostics, access to repair information, durability of pollution control devices, replacement of pollution control devices, conformity of in-service engines and vehicles, and carbon dioxide emissions and fuel consumption measurement. The proposal also foresees the introduction of a particle number limit value. These measures aim at reinforcing the effectiveness of heavy vehicle emissions legislation.

Here are the proposed limits:

Proposed Euro-VI Heavy Duty Highway Vehicle Emissions Limits (mg/kWh)								
Test cycle	CO	THC	NMHC	CH4	NOx (3)	NH3	PM mass	PM number #/kWh (1)
ESC (CI)	1500	130			400	10	10	
ETC (CI)	4000	160			400	10	10	
ETC (PI)	4000		160	500	400	10	10	
WHSC (2)								
WHTC (2)								
Notes: PI= Positive Ignition (spark-ignited) CI= Compression Ignition (diesel) (1)= PM number standard to be defined later. (2)= Limit values for World Harmonized Stationary Cycle & World Harmonized Transient Cycle will be introduced once correlation factors with European Stationary Cycle and European Transient Cycle have been established. (3) Admissible level of NO ₂ in the NO _x limit value to be defined later.								
<i>Source: European Commission</i>								

2. Commercial Vehicle Manufacturers Support Tight EU Controls

The European commercial vehicle industry supports the most stringent scenario put forward by the Commission in preparation of new European pollutant emission standards, known as 'Euro VI'. "We are global technology leaders and want to make a long-term commitment to protecting the environment. Our efforts will reduce emission levels from trucks to the most ambitious level possible and result in a substantial contribution to further improving air quality", said Aad L. Goudriaan, chairman of the commercial vehicles board of the European Automobile Manufacturers' Association (ACEA), addressing a large audience in Brussels at the industry's 4th annual Commercial Vehicle Conference.

Emission levels from commercial vehicles have already decreased substantially over the past decade. The most advanced trucks on the market produce 75% less NO_x and 94% less particulate matter than Euro I trucks in the early 1990s. Particulate matter emissions from the total truck fleet in the EU15 are 40% lower than a decade ago despite the fact that the number of kilometers driven has risen by over 50%. The new Euro VI levels proposed by the industry will reduce NO_x and particulate matter emissions by 95 and 98% respectively, compared to the levels at the time of Euro I.

“We are now seeking harmonization of standards worldwide”, Goudriaan added. “The new, highly ambitious emission levels proposed by the industry should enable the EU and the US to align future pollution control standards, paving the way for harmonized standards around the globe.”

Harmonization of technical standards is essential for the vehicle manufacturers to stay competitive. The truck industry is a global industry with relatively small production numbers compared to mass production goods. Currently, technical standards and testing methods differ from region to region. This leads to different development and certification tests and to extra costs for manufacturers, public authorities and, ultimately, consumers and society. “Harmonization is a way of keeping our resources focused and investments concentrated on the right topics”, said Goudriaan.

The EU first introduced air pollution control or ‘Euro’ standards in 1991. The emission levels have subsequently been lowered and trucks are now approaching the ‘zero emission level’. The European commercial vehicles are the safest, cleanest and most fuel-efficient in the world and the European manufacturers are world leaders.

ACEA represents the 14 European automobile manufacturers, including DAF, Daimler, FIAT (Iveco), MAN Nutzfahrzeuge, Scania, Volkswagen and Volvo (including Renault Trucks).

3. EU Parliament Environment Committee Votes MMT Ban, Accelerates Low S Fuels

On November 27th, the Environment Committee of the European Parliament voted to support Amendments 17 and 19 proposed by the Rapporteur Dorette Corbey which will ban the use of MMT in gasoline. The package of measures will next go to the full Parliament.

A Commission proposal to reduce air pollution and the CO₂ impact of transport fuels was amended to make greenhouse gas reductions more flexible, introduce quality standards for biofuels and bring forward the introduction of cleaner fuels. The Commission proposal aims to update the 1998 fuel quality directive, which sets minimum standards for petrol and diesel transport fuels, to keep pace with evolving fuel and engine technology and the growth in biofuels use and tackle greenhouse gas emissions.

In adopting a report drawn up by Dorette Corbey, MEPs in the committee agree with the Commission's proposal for mandatory monitoring and reporting of the greenhouse gas emissions produced by fuels throughout their life-cycle (i.e. in production, transport and use). They welcome the obligation for fuel suppliers to cut these emissions by 10 % by 2020, so as prevent some 500 million tons of CO₂ from being released into the atmosphere. But to introduce more flexibility, a committee amendment nonetheless says that CO₂ emissions should be reduced by at least 2 % every two years from 2012 to 2020 rather than by 1 % per year from 2011 as proposed by the Commission.

To ensure that the CO₂ reduction obligation does not lead to unsustainable production of biofuels, the committee inserted amendments guaranteeing that only biofuels that meet production sustainability criteria are used.

MEPs in the committee agree that from 1 January 2009 diesel may contain no more than 10 mg/kg of sulfur. Furthermore they want to guarantee that the sulfur content in gas oil for non-road vehicles and inland waterway vessels is reduced to 10 mg/kg by 31 December 2009, rather than 31 December 2011, as proposed by Commission. To reduce emissions of damaging polyaromatic hydrocarbons (PACs) in diesel to the absolute minimum, members want to cut their permitted content from 10 % to 6%, rather than to 8 %, as proposed by the Commission.

4. EU Proposes Intensely Debated Car CO₂ Law

The European commission has tabled draft legislation that would force carmakers to reduce average carbon dioxide (CO₂) emissions from Europe's new car fleet to 130 grams per kilometer (g/km) by 2012. The target must be achieved through improvements in engine technology alone. Compliance would be encouraged by establishing increasingly severe financial penalties from 2012 to 2015 for carmakers that miss their targets.

A commission impact assessment estimates that the proposed legislation will on average add around E1,300 to the cost of a new car but deliver fuel savings of around E2,700 over its lifetime. The measures should cut CO₂ emissions from new cars by 19 per cent, it adds.

The key sticking point within the commission ahead of the decision was the differentiation of the 130g/km average target between different sized vehicles. Officials argued over how to draw a limit value curve which sets targets according to vehicle weight while ensuring the overall 130g/km target is still met.

Environment commissioner Stavros Dimas said the curve finally backed by the commission would mean makers of bigger cars would have to make more effort to hit targets. "Manufacturers of larger cars will be asked to do more than the makers of smaller vehicles," he said. This would also avoid a "perverse incentive to make heavier vehicles".

Car firms will be able to pool with other manufacturers to meet average targets jointly. The terms of this cooperation will be left to the companies to decide, but they must respect EU competition rules.

In effect this represents a simplified form of trading, where a company that beats its own target can "sell" the difference to a company lagging behind. One official said this was a simpler solution than full emission trading in a sector with relatively few operators.

The proposals will now be passed to the council of ministers and the European parliament, who must jointly decide the final shape of the legislation.

The main elements of the proposal are as follows:

- An average emission target for all newly registered cars in the EU of 130 grams per kilometer (g/km) by 2012.
- Individual targets for each manufacturer based on the average mass of their EU car fleet, established through an emission limit curve. An average mass of 1,400kg gives a target of roughly 130g/km, 700kg gives 100g/km and 3,000kg gives 200g/km.
- An option for manufacturers to form a "pool" with other carmakers to allow them to jointly meet their combined target. For example, companies expecting to miss their target could pool with others expecting to beat their combined target in return for financial incentives. All such arrangements must respect EU competition rules.
- The commission's impact assessment says the proposals will lead to average purchase price increases of around six per cent per car (around E1,300). This will be offset by average lifetime fuel savings of E2,700.
- Independent manufacturers that sell fewer than 10,000 vehicles per year may apply to the commission for a special individual target. Such targets may be set above the emission limit curve (that is, they could be more lenient), but would still require a "fair reduction effort" from the company concerned, according to the commission.
- Special purpose vehicles, including those built for wheelchair access would be exempt.
- "Complementary measures" to deliver a further 10g/km reduction by 2012 will be proposed next year, aimed at achieving the overall EU target of 120g/km. These will include minimum efficiency requirements for car components such as tires and air-conditioning systems, as well as separate legislative proposals to encourage a greater use of biofuels.
- The binding limits for average emissions apply to all new cars sold in the European Union from 2012, whether produced in Europe or elsewhere. That means American, Japanese, South Korean and Chinese companies will also be affected. No cars will have to be taken off the market or off the road.
- The limit for vans is 175 g/km in 2012 and 160 g/km by 2015.
- Carmakers will have to pay an "emissions premium" for every gram/km by which their fleet exceeds the EU limit, multiplied by the number of cars sold. The fines will be phased in over four years, starting at 20 Euros (US\$28.81) per km/g in 2012, 30 Euros in 2013, 60 Euros in 2014 and rising to 95 Euros per g/km in 2015 and thereafter.
- The proposal now goes to the Council of EU member governments and the European Parliament. The regulation must be approved by a qualified majority of member states and a simple majority in parliament.

5. France Launches Clean Car Incentive Scheme

France has launched an incentive scheme to reduce carbon dioxide emissions from new cars. From January buyers of cars emitting more than 160g/km will have to pay a premium of up to E2,600. These cars represent 25 per cent of all sales, the government estimates. Conversely, individuals purchasing cars emitting less than 130g/km will receive up to E1,000. Cars with emissions between the two limits are not affected.

6. Ireland Adopts CO2-Based Car Tax

New-car buyers in Ireland will pay a CO2 tax and face higher rates for cars with big engines starting next year. Finance Minister Brian Cowen announced that Ireland's vehicle registration tax (VRT) will be linked to a car's CO2 emissions rather than engine size starting in July.

VRT is a one-time tax levied on new cars. Currently it is calculated using the car's selling price plus sales tax. The rates range from 22.5 percent to 30 percent depending on engine size.

Starting next summer, a seven-tier rate system will be applied based on a car's CO2 emissions. The low end of the tax scale will be 100 Euros on a new car that emits 120 grams per kilometer or less. The highest tax will be 2,000 Euros for new cars with CO2 emissions above 225g/km.

A new car sold in Ireland also will have a sticker that tells potential customers how energy efficient the vehicle is. The sticker will resemble those used on appliances such as washing machines and refrigerators.

In addition, Cowen raised the annual tax rates for cars. Starting in February, the tax on a vehicle with an engine under 2.5 liters increases by 9.5 percent and goes up 11 percent for vehicles above that capacity.

The Minister announced that existing tax incentives for flexible fuel and hybrid vehicles will be extended and improved. Electric cars and mopeds will be tax exempt starting January 1, 2008.

Cowen said that Ireland needs to reduce its greenhouse gas emissions from about 70 million metric tons a year to 63 million tons by 2012 to meet its commitment under the United Nations Kyoto Protocol on climate change. He is targeting cars because he says they are responsible for 20 percent of Ireland's emissions.

7. EU Moves To Include Airlines In Emissions Trade

European Union environment ministers have agreed to include airlines in the bloc's emissions trading scheme from 2012 as part of its fight against climate change. The EU's 27 governments will now negotiate the final deal with the European Parliament, which has voted for airlines to join the system in 2011.

"Our decision is of utmost importance in our fight against climate changes," Portuguese Environment Minister Francisco Nunes Correia, whose country holds the EU's rotating presidency, told a news conference.

The plan has irked the United States, which has threatened litigation at international arbitration bodies, and has drawn criticism from airlines and top officials of the International Air Transport Association (IATA). But the ministers insisted the EU must show global leadership on combating climate change, which scientists say results from growing emissions of greenhouse gases, notably carbon dioxide (CO2).

"This is a bold step by Europe ..., which shows the EU leading in the fight against dangerous climate change," said British Environment Minister Hilary Benn.

The trading scheme is the EU's key instrument to fight global warming. It sets limits on the amount of CO2 that industry may emit. Companies buy or sell permits based on whether they overshoot or undershoot their targets.

Under the scheme, internal EU and intercontinental flights would receive, and buy in auction, carbon permits -- certificates that essentially assign rights to emit.

The ministers agreed the amount of permits that airlines must buy upfront at auction at 10 percent in 2012, compared with 25 percent proposed by the European Parliament. The figures for the following years are still to be agreed.

The sector's cap was at 100 percent of average emissions from the period 2004-2006, higher than the 90 percent proposed by the parliament.

Airlines now account for nearly 3 percent of global CO2 emissions, but the figure has doubled over the last 10 years.

The EU proposal excludes all military flights and some public aviation services in the EU's overseas territories. EU governments' flights will be included, but those of foreign governments excluded.

The ministers set aside a special quota reserve, amounting to 3 percent of the total, for new entrants or operators in full expansion.

8. Former French Environment Minister Will Head New Governance Task Force

On November 7th, France appointed former Environment Minister Corinne Lepage to head a new task force that will address a range of "environmental governance" issues and propose an agenda for the country's mid-2008 assumption of the EU presidency.

French Minister of State for Sustainable Development Jean-Louis Borloo said the task force's first mission will be to devise potential solutions to governance issues that were raised at the conclusion of a national environmental policy summit in late-October. Borloo asked Lepage, one of the country's top environmental lawyers, to report by January 15, 2008, on the potential legal or regulatory means of:

- improving the country's environmental expertise;
- increasing transparency surrounding environmental information;
- reinforcing liability and responsibility for environmental contamination; and
- Increasing public access to the judicial system.

The task force proposals are expected to be incorporated into planned legislation that would transpose the European Union's Environmental Liability directive (2004/35/EC) into French law, said the Environment Ministry. France plans to transpose the directive in early-2008, before it takes over the European Union's rotating presidency in the second half of next year, the environment ministry said.

The second mission facing the task force--a mixed bag of leading environmentalists, researchers, and legal experts--is to lay out a potential agenda for France's EU presidency, concentrating on methods for improving public input to environmental decision-making at the local, regional, national, and European level, the environment ministry said.

9. Paris Transit Authority to Monitor Air Quality

On November 8th, the Paris public transport authority, RATP, announced plans to monitor and regularly publish interior air quality data beginning in 2008. Interior air quality monitoring will cover a range of fixed control points at bus and metro stops across the network, as well as surveillance of air inside metro cars and buses, according to RATP President Pierre Mongin. The new RATP initiative will allow public health experts to compare exposure to airborne pollutants for public transit users and commuters in private vehicles, Mongin said. The RATP monitoring program is part of a wider government initiative to better monitor and control interior air quality in public spaces.

10. Diesel-Electric Hybrid Locomotives Catching-on in France

Locomotive maker Bombardier has inaugurated the first dual-mode and dual-voltage AGC (Autorail Grande Capacité, high-capacity railcar) for French National Railways (SNCF). "Dual-mode (electrical and diesel) and dual-voltage (1500 and 25000 V) technology enables the Hybrid AGC to glide seamlessly across the entire railway network and to access electricity from any available source," Bombardier said. "This will result in energy savings and reduced CO2 emissions, as well as negating infrastructure constraints and the need for passengers to change trains. The Hybrid AGC also dovetails with the sustainable-mobility agenda, enabling operators to streamline vehicle management, enhance service quality, and protect the environment. The latest variant in the AGC range is at the cutting edge of railroad technology. As of today, 21 French regions have ordered and/or operate 698 AGC regional express trains," enjoying "imperceptible switches from electric to non-electrified tracks," when the diesel motor takes over.

11. Turkey To Reduce Sulfur In Diesel From Jan 1

Turkey will reduce the sulfur content of its diesel fuel to harmonize with European Union standards starting from January 1, 2008, an official from the country's energy watchdog agency has announced. Turkey's energy markets regulator will change diesel sulfur levels for fuel for tractors to contain 1,000 parts per million from current levels of 2,000 ppm, he said.

"Diesel will contain half the amount of sulfur it currently has," said Nuri Karaoz, an official at the watchdog's petrol division.

Turkey will also change regulations to reduce the levels of sulfur in diesel for commercial vehicles and cars to 50 ppm, starting July 1, 2008, he said.

Diesel with 50 ppm sulfur is standard in the European Union.

Diesel containing 7,000 ppm sulfur will be taken off the market, the agency's web site said.

Earlier this month, Turkish refiner Tupras said Turkey would switch to cleaner heating oil with just 0.1 percent sulfur from January 1, 2008.

12. Germany Plans Tax Exemption for Low-Emission Cars

On average, German cars emit 70 percent more than the planned limit for a tax exemption

Car-buyers are to be rewarded with a tax exemption in the future for selecting environmentally friendly vehicles, Germany's finance ministry announced on November 13th. New vehicles that emit 100 grams of carbon dioxide per kilometer or less will no longer be subject to an annual tax, according to a plan released by the German government.

The car tax proposal is intended to replace the existing law, which charges car owners based on the size of their vehicle. If approved by Germany's state governments in early December, the tax exemption would apply to vehicles admitted as of January 1, 2009.

Car tax coffers are intended to break even by 2013, with high-emitters covering the lost tax revenue from new more environmentally friendly vehicles.

Currently, there are very few cars on the market that meet the 100-gram-per-kilometer emission standard. Starting in 2009, a sliding tax scale would apply to new vehicles with higher CO2 emissions.

Old vehicles would continue to be charged according to their size, but at higher rates.

New cars now emit an average of 170 grams of CO2 per kilometer. Germany aims to cut this amount to 120 grams by 2012. The goal is part of a larger environment package approved by the government in August that also targets pollutant building facilities, electronic equipment and energy plants.

Measures are in place Europe-wide to tighten emissions levels on new vehicles in 2009 and again in 2014. The German finance ministry's bid would allow for an early tax exemption for those cars that already meet the planned 2009 and 2014 standards, both of which foresee a CO2 limit of 100 grams per kilometer.

An EU law dictating an emissions-based vehicle tax has been on the table, but has come up against resistance from eight member countries. Germany has said it would support the motion from Brussels.

The environmentally-oriented German Traffic Club (VCD) has criticized Germany's new vehicle tax plan for not going far enough. VCD auto expert Gerd Lottsiepen said that each gram of CO2 cost the same amount; gas-guzzling cars would hardly be more expensive than before, news agency DPA reported.

The organization has suggested a tax advantage for vehicles with especially high gas mileage as well as low emissions.

13. European Air Pollution Review Finds Decline In Emissions Since 1990

According to the Annual European Community LRTAP Convention Emission Inventory Report 1990-2005, emissions of five main categories of pollutants (ammonia, carbon monoxide, nitrogen oxides, non-methane volatile organic compounds, and sulfur oxides) all fell between 2004 and 2005, contributing to significant overall declines since 1990, the base year for measurement.

The report was released on October 19th.

Carbon monoxide emissions declined by the greatest amount between 2004 and 2005 (down by 6.9 percent), while sulfur oxide emissions fell by the greatest amount overall between 1990 and 2005 (down by 71.9 percent). Emissions of nitrogen oxides fell by 34 percent from 1990 to 2005.

The LRTAP Convention, administered by the U.N. Economic Commission for Europe, was established in 1979 to gradually reduce and prevent air pollution. The convention set up a process for negotiating measures to control specific pollutants through legally binding protocols. Since 1984, eight protocols have entered into force.

14. Lukoil Expanding Lower-Sulfur Diesel Refining Capacity

Russia's Lukoil has approved a 2008-2009 budget plan that includes upgrading diesel fuel hydrotreating units at its Perm, Nizhny Novgorod, Bulgaria and Romania refineries. The budget plan also includes boosting refinery capacity by 2 million tons/year, thanks in large part to a major reconstruction at its Odessa refinery. "Oil supplies to be refined at the company's Russian refineries, which is the most cost-efficient, will amount to no less than 42 million tons per year," the company said.

15. Ukraine Moving Toward Euro-4 (50-ppm Sulfur) Fuel Standards by 2011

According to a report from Global Insight, the Ukrainian government has adopted new fuel quality and vehicle emissions standards that will require Euro-3 and Euro-4 limits by 2011. The report noted that only two of Ukraine's six refineries – the TNK-controlled Lisichansk (LiNOS) refinery and the Lukoil-owned Odessa refinery – are currently capable of making Euro-4 fuels. “Prime Minister Viktor Yanukovich said that the government will have to negotiate with the other refineries on investment programs to implement new technologies in order to upgrade the facilities and thus meet the new fuel quality standards by 2011,” the report said. “Ukraine's largest refinery, the Kremenchug refinery owned by UkrTatNafta, is currently the focus of a management dispute, so it is unlikely that facility will be moving to invest any money in modernization and retrofitting until that impasse is resolved.”

NORTH AMERICA

16. US Debate Over Vehicle Greenhouse Emissions Twists and Turns Forward

A. California Greenhouse Gas Law Prevails in US Court

California's landmark law requiring cuts in greenhouse gas emissions may stand, a federal court judge in Fresno, California, has ruled, rejecting arguments by car makers that federal law should preempt the state's effort. A spokesman for the auto industry, which had argued that California's law is unconstitutional, said an appeal is uncertain. "We're still reviewing the decision and a decision on whether or not to appeal hasn't been made yet," said Charles Territo, a spokesman for the Alliance of Automobile Manufacturers.

US District Court Judge Anthony Ishii said in his opinion that California's law mandating reduced greenhouse gas emissions, including carbon dioxide, from passenger vehicles would necessarily require a substantial increase in their fuel efficiency in terms of mileage per gallon. Car makers had argued that mileage standards are the responsibility of US regulators.

Ishii said that California still needs to obtain a waiver from the US government to implement its greenhouse gas law, which would affect model-2009 cars, sport-utility vehicles, pick-up trucks and minivans, including some which may come on the market next year.

Environmental activists cheered the decision as a major breakthrough in their legal efforts addressing global warming. "The only thing standing in the way of California and 16 other states in implementing this clean-car law is a waiver from the EPA," said Roland Hwang, an automobile industry analyst with the Natural Resources Defense Council.

B. Court Orders Vehicle Fuel Economy Rule Revised

A federal appeals court sharply rejected the Bush administration's new pollution standards for most sport utility vehicles, pickup and vans and ordered regulators to draft a plan that's tougher

on auto emissions. The 9th U.S. Circuit Court of Appeals ruled that the National Highway Traffic Safety Administration failed to address why the so-called light trucks are allowed to pollute more than passenger cars and didn't properly assess greenhouse gas emissions when it set new minimum miles-per-gallon requirements for models in 2008 to 2011.

The court also said the administration failed to include in the new rules heavier trucks driven as commuter vehicles, among several other deficiencies found.

Judge Betty Fletcher wrote that the administration "cannot put a thumb on the scale by undervaluing the benefits and overvaluing the costs of more stringent standards."

C. Bush Signs Bill to Boost US Vehicle Fuel Efficiency

President Bush then signed into law a landmark energy bill that increases US vehicle fuel efficiency for the first time in over three decades, and significantly boosts ethanol use. The key part of the new law raises the gasoline mileage requirements of cars and trucks by 40 percent to an average 35 miles per gallon by 2020, which will eventually reduce US oil demand by 2 million barrels a day.

The law also raises yearly production of renewable motor fuels, such as ethanol, five-fold to 36 billion gallons by 2022, and requires more ethanol in the next decade to be made from non-food "cellulosic" sources like wood chips, switchgrass and other agricultural waste. Most US ethanol is now made from corn.

The auto industry and its supporters in Congress grudgingly supported the law but launched an aggressive lobbying effort to put specific language in the legislation to prevent California and EPA from proceeding with their greenhouse emissions control efforts.¹ When the Congress rebuffed their efforts, they then turned to the White House where they found a more receptive audience. In a perverse decision, the Bush EPA then denied California a waiver to proceed with its Greenhouse emissions control program and scuttled a similar EPA program which had been under intense development over this past year, the very programs which likely persuaded the vehicle industry to accept the requirements in the Energy legislation. (See below)

D. US EPA Denies California Waiver on Greenhouse Emissions

The Bush administration has announced that it will deny California's request to regulate carbon dioxide emissions from automobiles. The administration said an energy bill signed into law hours earlier by President Bush means no further action is needed to cut carbon dioxide emissions from vehicles, which account for about 30 percent of the US total.

¹ In April, the Supreme Court overruled the Bush Administration and concluded that EPA had the authority and responsibility to regulate greenhouse emissions; since then EPA's Office of Transportation and Air Quality has been working around the clock to prepare a proposal which it intended to release by the end of 2007 and to finalize by the end of 2008. Indications were that the proposal called for more stringent reduction than called for in the Energy legislation and on a more rapid time schedule.

The Environmental Protection Agency, charged with making the decision, found that the landmark law to raise automobile fuel standards by 40 percent by 2020 was a "better approach" than a "patchwork" of state rules.

California needed a waiver from the EPA to implement a law to force automakers to make vehicles that cut emissions 25 percent by the 2009 model year. Sixteen other states had either adopted or were considering rules similar to the California standard.

"It is my intent to deny the waiver," EPA administrator Stephen Johnson said in a conference call with reporters. The energy law provides a "clear national solution -- not a confusing patchwork of state rules," and California's situation does not meet "compelling and extraordinary conditions" for action as defined by the Clean Air Act, Johnson said.

California vowed to appeal the decision and pursue "every legal opportunity" to get the waiver approved. "California sued to compel the agency to act on our waiver, and now we will sue to overturn today's decision and allow Californians to protect our environment," Gov. Arnold Schwarzenegger said in a statement.

Lawmakers and environmentalists decried the decision. Sen. Dianne Feinstein called it "disgraceful," and said the new energy bill "does not give the EPA a green light to shirk its responsibility" to protect Americans from the dangers of global warming.

According to lawmakers, the fuel economy standards in the energy law would remove the equivalent of about 10 billion tons of carbon dioxide from the atmosphere by 2030 -- comparable to shutting off all US automobiles, trains and airplanes for five years.

Automakers have fought California's environmental plans in court and lobbied hard in Washington to block the waiver. They pulled together behind the new federal fuel economy law in part to avoid tougher state standards. The biggest US and international automakers, through their Washington trade group, commended the EPA decision and said they acted in "good faith" in working with Congress on the new fuel economy law.

The Natural Resources Defense Council, an environmental group, said the EPA decision is "exactly the kind of illegal freelancing the Supreme Court rejected" in its landmark April finding that EPA had the authority to regulate carbon dioxide emissions from vehicles.

The Supreme Court in April ruled that the EPA must reconsider its 2003 refusal to regulate carbon dioxide emissions from new cars and trucks that contribute to climate change.

E. A Back of the Envelope Comparison of US and EU Requirements

The current US fuel economy standard for cars is 27.5 mpg and for trucks it's 22.2 mpg. If the fleet mix for motor vehicles is currently and continues to be half cars and half trucks, that's 24.85

mpg. Under the new Energy legislation, the US fleet average standard will be 35 mpg across the board by 2020. The Europeans currently achieve this level at 160 grams CO₂ per kilometer, and their proposal calls for 130 grams CO₂ per kilometer or about 43.4 mpg by 2012. That's 24% higher mpg and eight years earlier than what the Congress has legislated.

The Pavley Bill (AB 1493) mandates a 30% reduction in California motor vehicle emissions by MY 2016. That would be about 159 grams CO₂ per kilometer or 35.5 mpg, which is close to what the Europeans currently achieve and close to what Congress expects the US motor vehicle fleet to achieve by 2020. It appears that California has begun to consider the next steps for tightening Pavley beyond 2016; the EU targets provide a rough indication of the possibilities.

17. Mercedes to Launch Diesel Hybrid Car 'After 2010,' Unveils Diesel 2008 Offerings

At the Los Angeles auto show, Daimler's Mercedes-Benz group showed off what it calls the "S400 Bluetec Hybrid" concept car that uses both clean-diesel and electric-hybrid power for even greater fuel efficiency and lower CO₂ emissions. The four-cylinder, diesel hybrid full-size sedan would achieve 40 miles/gallon fuel economy yet with the performance and power of a V-8 engine, Mercedes said.

"A total 265 horsepower and 465 pound-feet of torque is on hand – more pulling power than many conventional V8 engines – for zero to 60 mph acceleration of about 7.2 seconds, while the car is still capable of 40.5 miles per gallon (based on a European driving cycle) in highway driving. These figures are even more impressive when considering that the S-Class is a large luxury sedan," Mercedes said.

The car would become available "after 2010" but the company didn't provide more specifics on exactly when or where.

Meantime, Mercedes is already offering (via two-year lease) its "E320 Bluetec" diesel sedans in California, "the first step in the company's plans to offer consumers diesel alternatives in all 50 [U.S.] states," with the E320 utilizing a urea-selective catalytic reduction (SCR) system to achieve U.S. EPA Tier-2, Bin-5 and CARB LEV-2 limits on nitrogen oxides (NO_x) emissions.

"The California lease program will function as a bridge as [Mercedes] prepares to begin phasing in 50-state Bluetec vehicles nationwide [in the U.S.] starting in 2008," the company said.

"The first step will be the extension of the special lease program to other states which do not currently allow sales of new diesel automobiles in January 2008. Later in 2008, Mercedes will introduce another Bluetec system on its M-, R- and GL-Class vehicles," but the company didn't say whether these vehicles also will use urea-SCR, or some other NO_x-control technology.

18. CARB Mandates Diesel Truck, Port Retrofits to Slash CO₂ Emissions

The California Air Resources Board has approved several more “early action” programs to cut “global warming.” Among the latest: “Smartway Truck Efficiency,” which will require existing trucks and trailers to be retrofitted with devices that reduce aerodynamic drag, “thus reducing 1.3 million metric tons in greenhouse gas equivalents as well as reducing fuel consumption,” CARB claims. Also on tap is port electrification which will require docked ships to shut off their auxiliary diesel engines by plugging into shoreside electrical outlets. “Already offered as a NOx and diesel PM reduction effort used at the ports of Long Beach/Los Angeles and Oakland, this project will also reduce greenhouse gas emissions by 500,000 metric tons every year,” CARB claims.

19. Long Beach, L.A. Ports Ban Old Diesel Trucks

Two of the world’s biggest ocean ports – Long Beach and Los Angeles – have passed identical regulations that gradually would ban the oldest, dirtiest diesel trucks over the next four years, in order to cut air pollution. The new or retrofitted trucks (replacing the old trucks) would have diesel particle filters, exhaust gas recirculation (EGR) systems and possibly urea-selective catalytic reduction (SCR) systems that (combined) would slash both particulate matter and nitrogen oxides emissions. All would run on ultra-low sulfur diesel (ULSD) fuel to ensure proper catalyst/filter performance.

The new schedule:

- Oct. 1, 2008: All pre-1989 trucks will be banned from port service.
- Jan. 1, 2010: 1989-1993 trucks will be banned along with un-retrofitted 1994-2003 trucks.
- Jan. 1, 2012: All trucks that do not meet U.S. EPA 2007 diesel truck emissions limits will be banned.

The scheme will rely on Radio Frequency Identification tags “or similar technology [that] will be placed in trucks and tag readers will be installed at Port terminal gates to ensure access only for clean trucks,” the Ports said.

As a result, some 16,500 old diesel trucks will be replaced with ultra-clean trucks. The Ports had said they wanted to force the current owner-operator fleet (mostly low-income operators) to be converted to company-owned-and-operated trucks licensed to operate in the Ports. That would open the door to Teamster unionization of the fleet, opposed by shipping companies and terminal operators. But the final plan as approved by the L.A. and Long Beach port authorities earlier this month dropped any reference to company-only trucking provision.

20. Seattle, Tacoma and Vancouver Ports Seek To Reduce Air Pollution

The ports of Seattle, Tacoma and Vancouver, B.C. have released an updated draft of their plan to cut maritime industry air pollution by 2015, including for the first time specific emissions reduction goals for trucks and trains. But the new draft strategy did not go far enough for local community groups who say their health is suffering due to truck diesel fumes.

While the Vancouver Port Authority already has a program in place that requires trucks that enter its seaport terminal gates to meet heightened environmental standards, the ports of Seattle and Tacoma promised only to consider emulating Vancouver's plan.

The goal is to make the aging truck fleet -- in Seattle, 1,500 to 1,800 trucks circulate between the docks and warehouses and rail yards -- to meet emissions levels of trucks that are 13 years old or younger by 2010. By 2015, the ports want 80 percent of the trucking fleet to reach emissions levels of 2007 model year trucks. Two years later, they want to up that to 100 percent.

But the current business model relies on independent operators, who get paid for each "turn" or container delivery. They don't get paid enough to buy new rigs; the Teamsters are pushing for a new business model that would make it easier to standardize the fleet -- and organize the drivers.

In the meantime, the ports say they will increase their gate hours and mandate Web-based reservation systems to decrease congestion and idling. The ports of L.A. and Long Beach have just gone much further, approving a phased ban of older trucks.

In 2005, the maritime industry produced more than 1,444 gross tons of diesel particulate matter - more than half of the regional total identified by the maritime emissions inventory. Particulate matter - found in soot, smoke, exhaust and diesel emissions - aggravates asthma and drives 70 to 80 percent of the cancer risk from breathing air toxics in the region.

Reducing those emissions is complicated because the port does not, in all cases, have the authority to mandate compliance with environmental standards that exceed state and local regulations. The strategy sets goals that can be measured but not enforced by the local, state and federal environmental agencies that collaborated on its creation.

For example, the Washington State Ferries are not under the port's jurisdiction but are studying how to use biodiesel in their fleet, which is one of the strategy's recommendations. The study did not come up with specific emissions goals for harbor craft like tugboats and ferries.

Emulating a federal rule proposed in April, the ports want to slash railway particulate matter emissions by 90 percent, suggesting that the railway companies switch or retrofit their engines to make them more efficient, use biodiesel or ultra low sulfur diesel fuel and electrify their switch and rail yards. Most significant in the strategy is its goal to cut particulate matter by 70 percent from ships at berth and 30 percent from cargo-handling equipment by 2010. Ship and terminal operators are encouraged to burn cleaner fuels such as ultra-low-sulfur fuel and biodiesel in their equipment, among other things.

21. Cummins Tier-4 Non-Road Diesels: EGR + DPF, Not SCR

Cummins has announced its technology path to meet U.S. EPA Tier 4 Interim and European

Stage IIIB mobile off-highway emissions standards across the 174-hp to 751-hp (130-560 kW) power band, which takes effect in 2011. “Core technology” includes a diesel particulate filter (DPF) and cooled Exhaust Gas Recirculation (EGR), plus Variable Geometry Turbocharger (VGT), advanced electronic controls and high-pressure common rail fuel systems, Cummins said. Urea-selective catalytic reduction (SCR), which would require creation of a urea refueling infrastructure, isn’t part of the picture.

“Common Tier 4 subsystem architecture will extend from the MidRange QSB to the Heavy-Duty QSX engines,” the company said. “The Cummins Tier 4 product range will maintain or increase power outputs compared to Tier 3. Fuel efficiency will be improved by up to 5%, dependent on rating and duty cycle.

The DPFs will cut particulate matter (PM) emissions by at least 90%, while EGR, working in tandem with the VGT, “enables the required 45% reduction in oxides of nitrogen (NOx) to be achieved,” Cummins said.

Non-road diesel equipment manufacturers “will be able to take advantage of specifying a single-source Tier 4 power system from Cummins, extending from the air intake filter system to exhaust aftertreatment” while “seamless electronic control of both engine and aftertreatment will be driven from an upgraded engine electronic control module,” the company said.

22. International To Meet 2010 Limits Without SCR

International’s “MaxxForce” brand diesel engines will “meet the stringent U.S. federal 2010 emissions standards for all its core applications without the use of selective catalytic reduction (SCR) systems,” the company announced Oct 31. Engine controls, air-handling and exhaust gas recirculation (EGR) will be used instead.

“The company’s strategy is designed to provide customer driven solutions to reduce costs and maintenance needs for buyers of International brand vehicles when the next EPA on-highway emission standards take effect.”

While International said it has “spent years studying and evaluating SCR,” such a scheme involves “additional vehicle hardware, sensors, electronic calibrations and the use of urea injection, which will require a North American delivery infrastructure to be operationally mature when 2010 vehicles are on the road. While the company has found SCR to be a way to effectively meet 2010 emissions standards, it adds to the cost and complexity of use of commercial vehicles for truck and bus fleet operators.”

Instead of SCR, International said it will meet EPA 2010 emissions limits “through advanced fuel system, air management, combustion and [EGR] controls. In addition, no incremental NOx after-treatment beyond the current technology will be required on any core International on-highway application in 2010. All MaxxForce on-highway diesel engines used in International’s core applications will be fully certified to the EPA 2010 emission standards.”

“MaxxFace” is the International brand for on-highway Class 4 to Class 8 commercial truck engines. “In North America, the MaxxFace product line ranges from a 4.5-liter V-6 to two new MaxxFace big-bore Class 8 engines that will launch in early 2008,” the company added.

23. Audi Details 2008 Clean-Diesel Plans for N. America

Audi has announced that it sees “high potential for the very latest technology in North America,” initially via launches of a 3.0-liter TDI diesel engine that meets U.S. EPA Tier-2, Bin-5 emissions limits. “As early as next year, Audi will be putting the cleanest diesel engine in the world into series production vehicles in the USA virtually in parallel to its launch in Europe: the 3.0 TDI with ultra-low emission system will initially be available for the Audi Q7, and later for the new Audi A4 too,” the company said.

“Audi has been expanding steadily in the USA for many years now, and sees the market as holding high potential for its cutting-edge TDI engines. The low-sulfur fuel required for the engines’ operation was introduced throughout the country a year ago, paving the way for the initiative to begin.”

The TDI uses up to 35% less fuel than comparable gasoline engines in the U.S. and would help cut CO2 emissions, the company said.

“One crucial innovation is the ultra-low emission system in the exhaust tract, which largely eliminates nitrogen oxides by means of a carbonic acid diamide [urea] solution. With this system on board, the 3.0 TDI fulfils the toughest emission standard in the world – the LEV II Bin 5 classification, which is operative in the US states of California, New York, Massachusetts, Maine and Vermont. The high-tech diesel from Audi also already complies with the emissions limits that are due to come into force in Europe from 2014.”

24. Honda Confirms Diesel Car Coming to U.S. in 2009

Honda confirmed to reporters covering last month’s Tokyo auto show that a 2.2-liter diesel engine will come to the U.S., initially installed in the 2009 Accord. In a press statement, Honda said: “The i-DTEC diesel engine, with emissions as clean as a gasoline engine, is scheduled to be introduced in the U.S. in 2009, and then in Japan.” The company will employ its novel “two-layer” NOx trap system earlier described at Society of Automotive Engineers World Congress as well as the Diesel Engine Efficiency & Emissions Research (DEER) conference in Detroit last August. According to a report from the auto show by Car & Driver magazine, “unlike VW’s similar NOx trap that will be for sale soon, Honda’s is scalable to larger vehicles. In other words, Honda says it believes it can put a V-6 diesel in a Pilot or similarly sized vehicle that meets 50-state emissions without having to inject urea, as will be the case with the VW Touareg diesel.”

25. Volkswagen Delays U.S. Introduction of Clean Diesel Jetta TDI

Volkswagen has informed its dealers that the vehicle launch has been delayed from April to late summer 2008. "This situation is due to a technical issue that was found during the later stages of durability testing," said VW's Adrian Hallmark in a memo to Volkswagen dealers. Hallmark is the former Volkswagen of American executive vice president who left the U.S. arm in late October to return to a new post at the automaker's home base.

The issue may have been triggered by the critical 50-state test here. The U.S. has strict emissions standards for diesel vehicles and it must meet them in every state, most notably California, with its tough standards.

"For image and competitive reasons, we are now working hard to bring early promotional cars into the country in order to give you the chance to pre-sell the production arriving in October during the summer months," Hallmark said in the dealer memo. "We are investigating a number of actions to make up a portion of the TDI shortfall, such as but not limited to, obtaining additional production of high demand product, ramping up the launch production, and speeding up shipment times of the new TDI, bringing in special edition cars, etc."

Hallmark noted that the launch of other new models planned for 2008 "are on time." Those vehicles include the Jetta SportWagen, Tiguan, Passat Coupe, M-Van and Touareg 2 with V6 TDI.

26. Air Regulators Pushing U.S. EPA to Finalize Locomotive/Marine Diesel Rule

National Association of Clean Air Agencies (NACAA, formerly STAPPA/ALAPCO) announced that it's urging U.S. EPA to take "immediate action" to finalize the agency's proposed locomotive/marine diesel emissions rule.

EPA proposed its rule earlier this year, following an earlier EPA rule forcing most locomotives and marine diesel engines to use ultra-low sulfur diesel (ULSD) starting June 1, 2012. ULSD will become the dominant diesel fuel in North America two years earlier, when most non-road diesel must switch to ULSD (up to 15-ppm sulfur) limits.

In a letter to EPA, NACAA says the agency must take action no later than December 31, 2007, in order for states to achieve EPA-mandated compliance deadlines for particulate matter (PM) and nitrogen oxides (NOx).

For locomotives, EPA ought to accelerate compliance dates for new and remanufactured engines, NACAA says. The toughest, "Tier 4" limits ought to be imposed by the end of 2013, while "Tier 3" limits should be imposed on new engines by the end of 2010. "Tier 2" limits on remanufactured locomotives likewise should be imposed by the end of 2010.

EPA likewise should impose new limits on remanufactured marine diesel engines, not just new engines, the group said. EPA also ought to impose "Tier 4" emissions limits on all "category 1" and "category 2" marine diesel engines greater than 25 horsepower.

The upcoming EPA locomotive/marine diesel rule doesn't affect the giant "Category 3" ocean ship propulsion engines. EPA is trying to coordinate with the International Maritime Organization (IMO) on "Marpol Annex 6" legislation so that foreign-flag ships would meet tougher emissions and fuel standards, rather than EPA imposing limits only on U.S.-flag ships, which are a tiny minority of the ocean ship traffic calling at U.S. ports.

27. Diesels, Hybrids Much Better Than Ethanol-Fueled Cars on Social Benefits

A new study by RAND Corp. concludes that cars and light trucks using diesel or electric-hybrid power provide much bigger social and consumer benefits than E-85 (85% ethanol) or conventional gasoline cars.² "Rising oil prices coupled with concerns about global climate change are driving debate about which fuels and engines should be used to power the 17 million new cars and trucks sold each year," said John Graham, dean of the Pardee RAND Graduate School and senior author of the research paper. "Advanced diesel and hybrid technologies show very well in this study, in terms of benefits to the individual and society overall," Graham said. "E-85 simply doesn't provide the same benefits."

The peer-reviewed research examined the benefits and costs of three alternatives to the gasoline-powered internal combustion engine for 2010-2020: gasoline-electric hybrid technology (as found in the Toyota Prius or the Ford Escape SUV Hybrid), advanced diesel technology (such as the Mercedes-Benz E320 sedan), and dual-fuel vehicles that are powered continuously by E-85, Rand said.

"Additionally, each technology was compared to a gasoline-powered vehicle. Comparisons were made for three vehicle types: a mid-sized car, a mid-sized SUV and a large pick-up truck. The cost-benefit comparisons were made from the perspective of individual consumers and society in general, on a per-vehicle basis over the life of the vehicle.

"The paper ranks the four technologies using benefit-cost analysis. Using most reasonable assumptions, the results placed advanced diesel technology first, followed by hybrid technology, the gasoline engine and E-85 technology.

"The consumer perspective accounted for technology cost, fuel savings, mobility and performance. The societal perspective also included tailpipe pollutants, greenhouse gas emissions and 'energy security costs' for the fuels – the costs to society as a whole from greater dependence on expensive and unstable foreign oil supplies.

The study assumed fuel prices of \$2.50 per gallon for gasoline, \$2.59 per gallon for diesel fuel, and \$2.04 per gallon for E-85 (including tax credit). The report also examines scenarios where fuel costs are much higher and much lower.

² The paper, "The Benefits and Costs of New Fuels and Engines for Cars and Light Trucks," can be found at www.rand.org.

Among the key findings:

- “The advanced diesel offers the highest savings over the life of the vehicle among the options considered. These savings increase with the size and fuel use of the vehicle: \$460 for the car, \$1,249 for the SUV and \$2,289 for the large pick-up truck;
- “The hybrid option has smaller but still considerable savings for SUV applications (\$1,066), moderate savings for pick-up applications (\$505) but minimal savings over the life of the vehicle for car owners (\$198);
- “The vehicles operating on E-85 cost all three owners more over the vehicle life, with a greater net cost burden for larger vehicles and increased fuel consumption: (\$1,034 penalty for cars, \$1,332 for SUVs, \$1,632 for pick-ups).

Both the hybrid and diesel vehicles are more fuel efficient than their gasoline-powered counterparts: 25 to 40% better for hybrid and 20 to 30% for diesel, depending on the vehicle, they said.

“While it is assumed that the hybrid vehicle will save more fuel than the advanced diesel, the overall advantage goes to the diesel because of its lower technology costs and better performance such as increased torque,” Graham said. “For E-85, it is the cost of producing the fuel, not vehicular changes, that drives the negative results.”

“E-85 does not generate net societal benefits unless a breakthrough reduces ethanol production costs or gasoline prices stay near their current high levels for a sustained period of time,” the researchers found.

“Hybrid and diesel technology are close, but diesels have the advantage for the typical motorist, and provide a strong edge for drivers who require towing, hauling and rugged capabilities such as those offered in pick-ups,” Graham said. “Hybrids have a competitive edge for urban consumers who experience more stop-and-go city traffic.”

Graham added that “it is unlikely that market forces alone will result in widespread use of any of the three technologies,” while federal tax credits could improve the cost-benefit estimates of the advanced diesel and hybrid technologies.

28. Clean-Diesel R&D Consortium Starts November 8

On October 31st, Southwest Research Institute (SwRI) announced that it will launch the “Clean Diesel V” consortium on November 8th. The consortium already includes more than 40 members including diesel engine makers, component suppliers and diesel fuel manufacturers. It’s open to new members as well.

“The newest four-year effort will seek to improve diesel emissions technology to meet the Environmental Protection Agency’s stringent 2010 [heavy-duty highway] emissions goals,” SwRI said. “It is likely that four or five projects will come forward,” SwRI researcher Tom Ryan

explained. "Technology developed during earlier clean diesel programs will be brought forward as needed, but we will be working toward different, more stringent efficiency and cost goals."

Possible projects include full operating range homogenous charge compression ignition (HCCI) engine development, dilute diffusion combustion engine development, expansion of the advanced SwRI low temperature combustion technology and integration of cost-effective aftertreatment systems, SwRI announced.

"The consortium is designed to develop pre-competition technologies that member companies can incorporate into their products. Heavy-duty emissions goals are the U.S. 2010 and Euro VI on-road and Tier IV off-road standards. Light-duty emissions goals are the U.S. Tier 2, Bin 5 and Euro VI, with the U.S. Tier 2, Bin 2 as a stretch goal.

"The advantage of consortium membership is that the impact of the yearly contribution is multiplied by the number of participants, providing substantially more research than would be possible with funding from a single member. In addition, SwRI's internally funded research programs involving control algorithms and modified combustion concepts will be shared with consortium members. These efforts often form the basis for focused research under the consortium.

"The Institute will pursue patent applications for technology developed during the Clean Diesel V program, and consortium participants will receive a royalty-free license to use the technology."

29. Scientist Says Rising Temperatures Likely to Elevate Ground-Level Ozone

Global warming is likely to elevate levels of ground-level ozone, according to a Harvard University atmospheric chemist. "The effect of climate change on ozone is pretty robust," according to Daniel Jacob, professor of atmospheric chemistry at Harvard. "It is pretty clear that climate warming degrades ozone air quality."

Jacob told a November 14th meeting of the Ozone Transport Commission, a multi-state organization that advises EPA on interstate ozone transport, that with an overall temperature increase of 3 degrees Celsius, the probability of areas exceeding the federal air quality standard for ozone doubles, in the absence of measures to reduce ozone-forming emissions. In the Midwest, warming is likely to cause a 10-parts-per-billion increase in ozone levels from what they would otherwise be in the year 2050, Jacob said.

Ozone is formed from a reaction in sunlight of nitrogen oxides and volatile organic compounds. EPA blames ozone for increased incidence of asthma attacks, hospitalizations, and death.

Jared Snyder, assistant commissioner for air, climate change, and energy at the New York Department of Environmental Conservation, said that Jacobs' findings increase the evidence for the Environmental Protection Agency to find that emissions of carbon dioxide and other greenhouse gases pose a danger to public health, in addition to public welfare.

In response to an April 2 Supreme Court ruling that EPA has the authority to regulate greenhouse gases from vehicles, EPA is set to propose a rule by the end of the year to control greenhouse gas emissions from cars and light trucks. As part of that rule, the agency is preparing a finding of endangerment from carbon dioxide. The Clean Air Act requires that EPA regulate pollutants that endanger public health or welfare. Public health endangerment is generally seen as a more compelling argument for regulating an air pollutant, such as carbon dioxide.

According to Jacob, a peak in days with elevated ozone is correlated with high temperatures. Jacob said 1988 had the highest temperatures of the past 20 years. During that year, the northeastern United States experienced roughly 20 days in excess of EPA's effective ozone standard of 84 parts per billion, an average of 257 monitoring sites in the region, Jacob said. EPA has proposed lowering the ozone standard to 75 parts per billion.

In 1992, to which Jacob referred as the coolest year in the last 20 years, only one day exceeded the EPA ozone standard averaged across the Northeast, he said.

Jacob said that using a model called GISS-GCM 3, he and several other researchers have determined that by 2050, climate change will elevate ozone levels by as much as 7 ppb in the central portion of the country above what they otherwise would be, even as the decline in ozone-forming emissions will serve to depress emissions by as much as 17 parts per billion, particularly in the Southeast.

Ozone levels are decreasing in the Northeast and Mid-Atlantic States due to an EPA program to reduce nitrogen oxide emissions from power plants, Tad Aburn, air director for the Maryland Department of the Environment, said at the OTC meeting. But Jacob said these reductions may be offset to some extent by the effects of global warming.

Jacob said a "climate change penalty" would require an additional 25 percent reduction in ozone-forming emissions in 2050 to achieve the same ozone reductions that were possible in 2000.

Another way global warming will increase ozone levels in the Northeast is by reducing the frequency of "cyclones," or circular wind patterns that form over the Northeast and bring cold fronts in from the West, Jacob said. These cyclonic winds have the effect of clearing out ozone-laden air over the Northeast and blowing it out to sea, Jacob said.

Jacob said summertime cyclones would decrease by 17 percent from 2000 frequency levels by 2050.

30. 'Life-Cycle Analysis' of Low-Carbon Fuels Debated

The first meeting of the California Air Resources Board's (CARB) "low-carbon fuel standard" (LCFS) Life Cycle Analysis (LCA) workgroup this month decided to use the well-known GREET (Greenhouse gases, Regulated Emissions, and Energy use in Transportation) model, with modifications. But there's far less agreement on the modifications themselves, a reflection of the number of inputs and sensitivities that might be needed to make GREET an effective tool for the LCFS.

GREET, developed by Michael Wang at Argonne National Laboratory, evaluates transportation fuels on a full fuel-cycle basis. GREET includes more than 100 fuel production pathways and more than 70 vehicle/fuel systems. These vehicle/fuel systems cover all major vehicle technologies.

The LCA workgroup is expected to "reach a resolution of the issues" with regard to lifecycle analysis, CARB's Dean Simeroth said. "This is meant to be a workgroup where we come up with the answers," he told participants.

For starters, all fuels will be considered on a well-to-wheel basis for the LCFS, Simeroth said. CARB has not predetermined or excluded any fuels from consideration. Even that simple starting point sparked a discussion that required resolution. Some argued a well-to-tank basis might be sufficient to support a fuel regulation, in this case, of carbon intensity (CI). But because CI is related to fuel efficiency, others argued that the tank-to-wheel analysis is also relevant to the LCFS.

The California Energy Commission (CEC) conducted a major review of alternative fuels earlier this year using a modified GREET model. CEC analyzed fuels on both a well-to-tank basis and a tank-to-wheels basis, producing a full well-to-wheels LCA. "If we follow CEC, then we can go in either direction," Simeroth said.

Fuel pathways to be considered initially include reformulated gasoline (RFG) and ultra-low sulfur diesel (ULSD) produced from different crudes and in different refinery configurations, which reflects California refineries.

The modified GREET also will examine various ethanol pathways. But the model is lacking some feedstock inputs, sugarcane, for example. In addition, the model lacks a consistent basis for allocating co-product credits.

Biodiesel also will be considered, but as with other crop-based components, such as ethanol, land use issues are not covered in detail in GREET. Land-use issues to be addressed are nitrogen impacts from fertilizer, crop rotation, agricultural run-off and waste-water treatment needs.

While the LCA also will look at electricity from different generation sources, GREET does not reflect California's specific electricity mix. Rather, it utilizes a national mix, which is not as clean as California's grid.

Meantime, U.S. EPA is also using GREET in a rulemaking initiated in response to President George W. Bush's May 14 Executive Order directing the U.S. Department of Transportation, the Department of Energy and the EPA to address vehicle GHGs. This is based on Bush's "20 in 10" plan, which aims to cut U.S. gasoline consumption by 20% in the next 10 years. It relies heavily on alternative and renewable, low-carbon fuels, and to a lesser degree, on vehicle fuel efficiency increases. EPA aims to publish a notice of proposed rulemaking in December.

Simeroth seeks to integrate the EPA and CARB efforts to the greatest extent possible, an effort widely supported by industry stakeholders who are concerned about the potential for overlapping state and federal requirements. CARB and EPA have been in bi-weekly discussions on how best to coordinate, said Simeroth. "We don't want something that is unique to California." The LCA tool should be relevant nationally and "hopefully, internationally," he said. "But even if EPA does a perfect job, we'll still have to make some changes for California," he added.

31. Hawkins Tell Industry: Make Electrons for Plug-in Hybrids, Not Liquid Fuel

While much of the energy industry is moving to boost production of "clean" hydrocarbon fuels, many environmentalists instead want more "clean" electricity in order to support a conversion to plug-in hybrid electric vehicles (PHEVs). Natural Resources Defense Council climate center director David Hawkins explained this in a keynote speech to the Gasification Technologies Council (GTC) 2007 annual meeting.

Hawkins, a former U.S. EPA assistant administrator, repeated NRDC's long-time warning against converting coal to liquid fuels (CTL), claiming this would result in excessive CO₂ emissions and environmental damage from expanded coal mining. If coal must be used at all for energy, then it only should be used via ultra-clean integrated gasification combined cycle (IGCC) power combined with carbon capture & storage (CCS), which he termed "CCD" (with the "D" standing for "disposal.")

Energy industries and their major end-users (including the automotive industry) first must strive for greater energy efficiency, then more renewables, and finally IGCC plus "CCD" for fossil-fuel-based energy, he said.

"We must change the way we use coal," he said. "Gasification can play a very large role in reconciling" coal with the environment, but only for electricity generation, he argued. "Don't waste time on CTL [coal to liquids]," he said. "Use coal for electricity, for plug-in hybrids, to back-out twice the oil barrels with one-tenth the CO₂," he argued.

"There are about 24 trillion tons of CO₂ left in exploitable fossil fuels and around 20 trillion tons of that is in coal. Every third day, a new coal plant starts-up somewhere in the world – two-thirds of that in the developing world. "If you assume a 60-year life for a coal power plant, then [new

plants] will result in 26% more CO₂ than all the prior human CO₂," while gobbling-up at least one-third of the projected CO₂ "budget" designed to stabilize greenhouse gases, he warned.

ASIA-PACIFIC

32. Beijing To Introduce Tougher Auto Emission Standards

Beijing will introduce tougher auto emission standards at the beginning of 2008 to curb air pollution in this host city of the 2008 Olympic Games, an official has said. The new standards will reduce the amount of sulfur dioxide in automobile exhaust by 1,840 tons every year, said Feng Yuqiao, an official with the Beijing environment protection bureau.

Automobile distributors in Beijing have gotten prepared for the new China IV standards that are equivalent to the Euro IV standards in the European Union, the official added.

Feng also said "all the gas stations in Beijing will provide gasoline and diesel that meet the requirements of the new standards starting from January 1." The maximum sulfur content of both diesel and gasoline will be 50 ppm.

There are 3.1 million motor vehicles in Beijing at present.

33. China Rolls Out First Self-Designed Hybrid Car

China's state-owned Chang'an Automobile group has started making its own hybrid cars, the first such move by a Chinese automaker, the Xinhua news agency reported. Mass production of the Chinese-designed car, which consumes 20 percent less fuel than ordinary cars of the same size, was launched after six years of research and development, Xinhua said.

"This shows Chinese automakers have grasped the core technology of making hybrid cars," the report said, adding that Chang'an will donate 10 such vehicles for the 2008 Beijing Olympics.

The Chang'an group is listed as Changan Automobile Co SZ, a Chinese partner of Ford Motor Co and Mazda Motor Corp. The listed arm, based in the southwestern city of Chongqing, is also China's largest mini-van maker.

Toyota Motor Corp was the first carmaker to build hybrid cars in China. General Motors Corp said last month it would begin producing a hybrid car in China from next year, in time for the Beijing Olympics in August.

Japan's Nikkei said the hybrid vehicle made by Chang'an is based on a 2-liter compact wagon that will be able to travel 100 kilometers (62 miles) on 6.8 liters of gasoline, and it will be officially released next year.

The new hybrid is close in size to Toyota's Prius hybrid, which the Japanese automaker has assembled and sold in China since late 2005, the Nikkei said. Chinese sales of the Toyota hybrid were down 86 percent in the first 10 months of 2007 from the same period a year earlier to 299 units, as the vehicle's 300,000 Yuan (US\$40,700) price tag dampened its popularity, it said.

Changan's new offering will cost around 150,000 Yuan, roughly 20,000 Yuan more than the base vehicle but just half as much as the Prius, the Nikkei said.

34. China Says Glaciers Shrink by up to 18 Pct

High altitude glaciers in China's remote west have shrunk by up to 18 percent over the last five years due to global warming, according to state media, citing preliminary results from an on-going survey. The shrinkage was most evident in two areas in the far Western region of Xinjiang and in part of Tibet, the official Xinhua news agency said.

"The change of glaciers is in fact a manifestation of the pressure upon China's environment from global warming," it quoted Ding Yongjian, a Chinese Academy of Sciences research fellow, as saying. "Global warming has led to an increase in the average temperature in the western area of China over the past few decades. This has caused the glacial shrinking, a thawing of frozen earth and worsening arid conditions," it paraphrased him as saying.

China is set to overtake the United States as the world's top emitter of carbon dioxide as early as this year, and is under rising international pressure to curb emissions from its factories and vehicles. But Beijing says its domestic energy efficiency program is helping cut its contribution to climate change and offered to do more in return for clean technology from the developed world.

35. China Bends on Price Controls, but Diesel Shortages Persist

China's National Development & Reform Commission (NDRC) has allowed diesel and gasoline prices to rise by more than 9%, helping to ease significant diesel supply shortages, according to multiple reports. According to a South China Morning Post story, NDRC raised the retail price of petrol (gasoline) by 9.1%, to 5,980 Yuan/ton, and diesel by 9.96%, to 5,520 Yuan/ton, effective November 1st.

In a press statement, NDRC acknowledged that "even after this price rise, refined oil prices are still at such a level that some oil refiners will still suffer from losses . . . but some local refineries should [find it economically viable to] resume operations. Meanwhile, PetroChina and Sinopec should increase diesel imports and limit exports to ensure sufficient supply."

However, just prior to the price rise, China Daily quoted Yao Daming, of Guangdong Oil & Gas Association, as saying that "wholesale prices of major oil products, especially diesel, and low-end gasoline products have risen to some extent. But the real headache is that even with rising

prices, there is still not enough supply.” The China Daily report said that diesel supplies in Guangdong are already low, with shortages expected to continue throughout 2007 “and early next year as demand for diesel picks up further and supply drops.”

36. China Diesel Maker Adopting Urea-SCR in 2011 Heavy-Duty Trucks

Tenneco has announced that it has won a development contract for a urea-selective catalytic reduction (SCR) system for a “major Chinese commercial vehicle engine manufacturer.” Tenneco said the manufacturer, whose name wasn’t disclosed, aims to install urea-SCR on its Euro-4 emissions trucks and buses by 2011 for the China market.

The so-called “Elim-NOx” system would cut nitrogen oxide (NOx) emissions by 70 to 90%, Tenneco said.

“The injector system is capable of providing rapid, uniform dispersion of urea without the use of steam or compressed air, reducing overall system lifecycle cost,” Tenneco said of the urea-SCR system. “The ‘self-learn’ monitoring device significantly reduces vehicle development time and costs with the use of sensors to measure NOx, exhaust temperature and other engine parameters.”

Tenneco already operates five majority-owned joint ventures in China including emission control operations in Shanghai, Dalian (two joint ventures with JIT facilities in Changchun) and Chongqing. Volkswagen (SVW), General Motors (SGM), Chery, Brilliance, PSA (DPCA), Daimler Chrysler (Beijing Jeep), Suzuki, Nissan, Audi (FAW-VW) and Ford are among the company's OE customers there, Tenneco said.

37. General Motors to Build Shanghai Center To Develop Hybrid-Vehicle Technology

General Motors Corp. will build a high-tech research center in China to develop new hybrid vehicle technology and cleaner cars, company officials announced on October 9th. At a news conference in Beijing, General Motors' top management said they were committed to building cleaner automobiles here and would fund research and development to make that happen.

China is the world's fastest-growing car market, with growth in sales of more than 20 percent annually for the past few years. Shanghai General Motors, a partner of the Shanghai Automotive Industry Corp. (SAIC), is the top-selling car brand in China; China is General Motors' second-largest market after the United States.

With the growth in car ownership has come worsening air pollution for China's cities, however. General Motors intends for this first-of-its-kind research center to study and develop cleaner fuel and auto technology, officials said. The research center is part of General Motors' plant investment in Shanghai announced earlier.

GM officials said they are confident they can create in China without losing intellectual property rights, and that the investment in Chinese market is worthwhile.

"The new GM Center for Advanced Science and Research will support China as it undertakes one of the most rapid technological transformations in world history," Rick Wagoner, chief executive officer of General Motors, said. "It is designed to bring together various resources ... to accelerate research in the areas of energy-efficient and environmentally friendly automotive technologies, as well as alternative fuel pathways that are socially responsible, economically viable, environmentally sustainable, and technologically feasible."

38. Cummins Wins Large Chinese Order For Engines

China's race to clean up its environmental standards in time for the Beijing Olympics is good news for Cummins Inc., one of the world's largest suppliers of diesel engines; it has received an order for 1,900 engines from public transport companies in China.

One analyst said the deal was worth at least \$20 million.

The company said that it will supply engines to more than half the buses held by Beijing Public Transport Holdings, one of the world's largest bus companies. It is to sell 1,000 Euro IV diesel engines to Beijing Public Transport Holdings Ltd. and 900 Euro III diesel engines to Hangzhou Public Transport Corp. Hangzhou is the capital of Zhejiang province in eastern China.

Beijing Public Transport's latest order follows its purchase of 1,400 Cummins Euro IV diesel engines and 250 Euro III natural gas engines in the second quarter.

China has implemented Euro III emissions standards countrywide this year and plans to move to Euro IV by 2010. However, the country is pushing ahead with special standards for Beijing, which is expected to move to Euro IV in time for the Olympics next summer.

39. World Bank Study: Air Pollution Increasing Health Woes In China

The World Bank's country director for China and Mongolia has warned China that its air pollution is causing more ailments and deaths, while eating 3.8 percent of the nation's gross domestic product. Among the negative effects of air pollution are higher incidents of lung diseases such as cancer and respiratory problems, which leads to higher levels of absenteeism in workplaces and schools.

Including the cost of water pollution, the bill to China's economy for health and non-health effects is around \$100 billion a year, roughly 5.8 percent of its GDP, said David Dollar of the WB.

He aired the warning at a forum on China's investment attractiveness, quoting an environment report prepared jointly by the WB and China's State Environmental Protection Administration.

Dollar cited statistics on density of particulate matters to support his warning. Beijing has a mean density of 141 micrograms; north China has 112 micrograms, while south China registered 88 micrograms.

He suggested transferring production facilities outside of city limits, using liquefied gas for heating systems instead of coal-burning stoves and promoting public transportation while curbing the use of private vehicles.

Environmental protection is on top of China's priority. Under its 11th Five Year Plan, it will reduce power consumption by 20 percent per unit of GDP and shave 10 percent off major pollution causes between 2006 and 2010.

One such effort is its use of carbon capture and storage technology, with the help of the British government. The two nations launched in Beijing Tuesday the Near Zero Emission Coal Initiative, designed to bring to almost nil by 2020 the carbon dioxide discharge of coal-fueled facilities in the country.

The first step is to conduct a feasibility study on bringing in carbon capture and storage technology into Chinese plants, followed by pilot testing. Under the technology, greenhouse gas emitted by combustion of fossil fuel like coal, oil and gas is captured before it gets to be released into the air and placed in a secure storage vessel before it is buried underground.

In October, the United States tried out the technology in three areas to test if it can store 1 million or more tons of carbon dioxide. The U.S. pilot project costs \$197 million, spread over 10 years.

40. Hong Kong Switching to ULSD

Hong Kong has passed a resolution to introduce a concessionary duty rate for Euro V diesel (\$0.56/liter as compared with ULSD's \$1.11/liter) starting from December 1 2007 for two years. They believe the oil companies will respond to this positively. The Hong Kong Government has committed to reviewing this duty arrangement before making Euro V diesel its statutory motor vehicle diesel requirement but the preliminary plan is to do so from January 1 2009 (in tandem with the EU).

As for Euro V diesel vehicle emissions, the plan is also to introduce it in tandem with EU and the authorities have already started their consultation with vehicle manufacturers on this initiative.

41. Hong Kong Public Willing To Pay for Air Pollution Fight

Most Hong Kong people were willing to pay for a tougher crackdown on chronic air pollution through road pricing and other measures, according to a government-backed report. The head

of the government advisory body that collaborated on the report with Hong Kong University also said the city should establish a "superfund" for cleaning up the environment.

Released during Hong Kong's traditionally smoggy winter months, the report is the most ambitious so far to gauge public attitudes about pollution, which frequently obscures the famous harbor.

"The public really wants something to be done even if certain costs are added to them...so it's really a good political capital that they (the government) have to drive on more initiatives," said environmentalist Alexis Lau.

Edgar Cheng, the Chairman of the Council for Sustainable Development, called for the government to establish the fund. Cheng didn't specify the size of the fund, but said the government could afford it, with an expected surplus of HK\$50 billion dollar (US\$6.4 billion) this fiscal year. "We figured out that if we want to clear up everything, it will cost HK\$20-30 billion," Cheng said.

Of the 81,000 people polled in the survey, 77 percent said they would be bear increases in transport costs in return for better air, through the use of cleaner vehicles and fuels. Forty-two percent said they backed electronic road pricing, which would charge vehicle usage on roads during peak periods -- a contentious measure opposed by the motor trade for decades.

A consensus was also found for greater public transport usage on bad air days and certain mandatory measures like the use of green light bulbs and turning off air-conditioners in empty rooms.

Hong Kong leader Donald Tsang said he would study the report. "Improving air quality and the overall environmental quality is a long term battle, which must have the participation of everyone in society in order to realize results," he said.

Coal-fired power stations are blamed as the city's worst polluters, but increasing emissions also blow across the border from tens of thousands of factories in southern China.

42. Hong Kong Chokes on Pollution – Worst of the Year

Hong Kong has been shrouded in the worst air pollution of the year during early December, with hills across Victoria harbor invisible despite a sunny dry weather. Pollution monitoring stations registered "very high" readings in several spots and the Environment Protection Department warned people with heart or lung problems to avoid outdoor activities.

Residents are increasingly worried over the rising number of smog-ridden days caused by the city's coal-fired power stations, cars and trucks, and a booming manufacturing sector across the border in the southern Chinese province of Guangdong.

The Air Pollution Index (API) surpassed 101, reaching what the department considers very high levels at several places after hitting 151 -- the highest level this year -- in the Central business district.

CLP Holdings Ltd, the larger of Hong Kong's two power utilities often under attack by environmental groups, pledged that it would cut the carbon intensity of its global power generation by 2050. But Chan Ka-keung, CLP Group's director of renewable energy, told the South China Morning Post that it has yet to enact definite plans to achieve the aggressive goal.

43. Japan's Greenhouse Gas Emissions Shrink in 2006 But Still Exceed Target

Japan's greenhouse gas emissions decline by 1.3 percent (18 million tons) in fiscal year 2006 compared to fiscal 2005 levels, with a total output of 1.341 billion tons on a carbon-equivalent basis, the Ministry of the Environment announced on November 5th.

Compared with the Kyoto Protocol baseline year of 1990, however, the emissions released in fiscal 2006 (which ended in March 2007) exceeded 1990 levels by as much as 6.4 percent, or 80 million tons. As a result, Japan would have to reduce its greenhouse gas emissions by another 12.4 percent to meet its commitment under the Kyoto agreement to reduce its total greenhouse gas emissions to 6 percent below 1990 levels by 2012, the ministry said in a new report.

Moreover, the decrease in Japan's greenhouse gas emissions in fiscal 2006 likely will be wiped out by an indefinite suspension of Tokyo Electric Power's Kashiwazaki-Kariba Nuclear Power Station--which was shut down in July following an earthquake--and by record-high temperatures during the summer, according to greenhouse gas emissions data from the Ministry of the Environment.

Of total greenhouse gas emissions, carbon dioxide emissions--representing 95 percent of the total--decreased 1.3 percent in fiscal 2006, reflecting the effect of reduced motor vehicle use and greater energy conservation spurred by high oil prices and a mild winter.

The transport sector's emissions fell 0.9 percent from fiscal 2005, and emissions from offices, homes and restaurants, hotels, and other soft business sectors were down 2.6 percent. Emissions for the manufacturing sector rose 0.6 percent.

The ministry estimated that had the country's nuclear power sector been operating at 84.2 percent of full capacity--about the average level for the past several years--then emissions in fiscal 2006 would have been down 2.1 percent from fiscal 2005, and only 3.3 percent above 1990 levels. However, the nuclear power sector's operating ratio was as low as 69.9 percent because several plants were forced to shut down after they attempted to cover up defects at their facilities.

Ministry officials said that unless Japan introduces proactive reduction measures, the country cannot meet its Kyoto targets by 2012.

The city of Tokyo recently began exploring the introduction of a carbon tax, as well as other measures, based on the polluters-pay principle.

44. Used Car Dealers Urged To Focus On Health of New Zealanders

Associate Transport Minister Judith Tizard says proposed measures to clean up New Zealand's vehicle fleet will save New Zealanders' lives by improving air quality. The proposed Land Transport Vehicle Exhaust Emissions Rule establishes minimum vehicle emissions standards on imported used vehicles for the first time ever and will according to the Minister bring New Zealand closer in line with other countries. Key points made by Ms. Tizard include:

- "This Rule is part of the Labor-led Government's commitment to cleaning up air quality. Vehicle emissions currently contribute to the premature death of 500 New Zealanders a year.
- "We do not want cars which fail to meet standards in other countries to end up on our roads.
- "The outlandish claims issued today by used car dealer organization IMVDA do not stand up to scrutiny and are a desperate attempt to scare monger so they can continue to import old and polluting used cars.
- "The Rule will not apply to cars already in New Zealand nor will it increase the cost of cars. But it will ensure that cars being brought into New Zealand are cleaner and less polluting. Only those with a vested interest will oppose these measures.
- "The five-point plan to clean up emissions being proposed by the used car dealers targets every sector of the car industry except those importing used cars. This plan shows that they want to be able to continue to import polluting cars but push the cost of dealing with them onto the buyer and the health system.
- "Vehicle emissions are being targeted through initiatives in three areas - the vehicles in the New Zealand fleet, the fuel supplied to run those vehicles, and the way in which those vehicles are driven and maintained," said Judith Tizard.
- "We have already introduced lower sulfur diesel and introduced measures to test all vehicles already on New Zealand roads through the Visible Smoke Check which is part of every warrant of fitness test. We trialed a vehicle scrappage scheme to get decrepit vehicles off the road, and have invested in public transport to encourage an alternative to short car trips. The Emissions Rule is just another part of that equation."

45. Tourism Holdings and VTNZ Set World Class Emission Standards

Tourism Holdings Ltd (THL) – New Zealand’s premier tourism operator and the largest motor home rental supplier – has taken the lead in meeting tough new exhaust emission standards set by VTNZ. The new emission test, launched by the Prime Minister Helen Clark in Auckland, sets a world class benchmark for vehicle exhaust emission standards.

VTNZ, New Zealand's leading vehicle testing company, has developed their own fully independent vehicle emission test. The VTNZ Five Star benchmark far exceeds the equivalent European emission standards. Early results show nearly all of the 1,500 motor homes in the THL rental fleet get over the Five Star bar.

THL’s Chief Executive Officer Trevor Hall said the partnership with VTNZ was part of THL’s commitment as an environmentally conscious organization to do something about reducing New Zealand’s harmful emissions and is timely given the announcement of the Government’s tourism strategy this week. “Preserving New Zealand’s beautiful, untouched landscape is vital to THL’s business and to the wider tourism industry. We are committed to ensuring our business has the smallest environmental impact possible on that landscape.”

VTNZ – which carries out well over a million vehicle safety and warrant of fitness checks a year – said it welcomed the request from THL to develop a robust and independent vehicle emissions test.

46. India Strives For Air Pollution to Meet WHO Standards By 2012

Delhi may be fighting the haze as a "clear" and present danger but the government is looking at a long-term plan of cleaning Indian cities of the increasing air-pollution mess. It has set an ambitious target of achieving the air-pollution standards mandated by World Health Organization by 2011-12 in all major cities of the country.

These targets form part of the 11th five-year plan which will be put before the National Development Council on December 9. The ambitious target comes against projections that car production in India increased by 300% between 2001-06 while that of commercial vehicles increased by almost 400%. Vehicle registrations - the basic figure to show additional cars being put on roads each year - increased by 300% from 1991-2006 with 4.8 million vehicles being registered last year in India.

Coupled with the increase of private vehicles and a rise in the percentage of diesel fleet is the fact that no city has a transport policy to look at the three different elements of transport management - public transport, city planning and regulation of private transport under one integrated plan.

The government has now proposed that all central programs on outdoor pollution will be reorganized under a national Air Quality Plan. This national-level plan will integrate plans made at city-levels and roadmaps made separately for industrial areas.

The action plan for each city, the government is projecting, shall integrate the National Urban Policy and Jawaharlal Nehru Urban Renewal Mission on development of public transport, including both bus- and rail-based mass rapid transit systems.

As part of the move, the national program for monitoring air quality will be extended to other parts of the country. The air quality-monitoring network, currently operating in 208 stations, will be expanded to 1,000 stations across the country. Most of the existing air quality monitoring stations are manually controlled and do not provide real-time data and therefore inhibit closer monitoring of trends in pollution level. The government wants to extend automated real-time monitoring every year to 15 new cities and cover 76 cities by the end of the year.

47. Study Finds Air Quality in Delhi Has Worsened Dramatically

Air quality in Delhi has deteriorated dramatically in the past two years, exposing the capital's residents to heightened risk of a range of respiratory diseases. The Center for Science and Environment, based in Delhi, called on the government to implement an "aggressive" new public transportation policy to mitigate the rise in pollution, caused primarily by soaring car ownership.

Pollution levels improved in 2001, after the government ordered that all public transportation vehicles use compressed natural gas, or CNG, a cleaner fuel. But the environmental group said its research showed that the city's air was quickly becoming as polluted as it had been before that measure was implemented.

India's thriving economy has created a booming market for cars, particularly in wealthier urban areas like Delhi. An average of 963 new private vehicles are registered for use on Delhi's roads every day, and the imminent launch of the world's cheapest car, a \$2,500 vehicle made by the Indian company Tata, is expected to increase that figure. Road expansion programs lag far behind the thriving car market.

"Whatever we gained by the CNG bus program we are losing due to the influx of diesel cars," said Sunita Nairain, director of the Center for Science and Environment. "We will have to take tough measures to control growing air pollution and fast," Nairain said. "Otherwise, Delhi will find itself in the choked and toxic haze of the pre-CNG days, when diesel-driven buses and autos had made it one of the most polluted cities on earth."

The research highlighted pollution levels measured in quantities of respirable suspended particulate matter - microscopic dust that embeds itself in the lungs. Before the CNG program led to cleaner air in Delhi, the annual average level of particulates stood at 143 micrograms per cubic meter. The figure dropped to 115 micrograms per cubic meter in 2005, but last year the average jumped up again to 136 micrograms per cubic meter, and forecasts for this year are even higher, the research group said. During the winter months, the daily average is currently about 350 micrograms per cubic meter.

The group said that exposure to such high levels of particulates was known to lead to increased hospitalization for asthma, lung disease, chronic bronchitis and heart damage, and could cause lung cancer over the long term.

48. Booming Chennai Faces Dust, Smoke and Noise

The increase in the number of motor vehicles, industrial and commercial activities, coupled with the rise in construction work in and around the city, is translating into a lot of air and noise pollution for the residents. Almost every part of the city suffers on account of air and noise pollution, much of it caused by automobiles. The city's ambient air quality on several parameters leaves much to be desired, with the levels of pollution above the permissible limits.

According to the Tamil Nadu Pollution Control Board (TNPCB) statistics for the six-year period ending 2006, though the levels of sulfur dioxide and nitrogen dioxide were low, the level of suspended particulate matter (SPM) was much higher than the permissible limit. Road dust kicked up by the near-constant vehicles movement also contributes to high levels of air pollution in several areas, including Vallalar Nagar, T. Nagar and Kilpauk. The growth of the construction activity and the associated movement of material-laden heavy vehicles, especially through residential areas, such as Anna Nagar, compound the problem.

The National Auto Fuel Policy's 2010 deadline for adopting vehicular emission norms is expected to improve the air quality. Chennai Petroleum Corporation Limited (CPCL), the major supplier of automobile fuel to the city, supplies petrol and diesel conforming to the Euro 3 vehicular emission specifications and is investing Rs.2,700 crore in projects to upgrade the fuels to meet the Euro 4 vehicular emission standards.

A major burden on the ambient air quality is the public transport system, including the Metropolitan Transport Corporation. Only the new MTC buses conform to the Euro 3 norms. Of the 47,600 autorickshaws in the city, only 2,800 run on the eco-friendly liquefied petroleum gas.

Measures such as restricting the movement of heavy vehicles on city roads, setting up emission test centers for MTC buses, checking goods carriers for their emission levels and restricting vehicle movements through one-way are initiatives to reduce the pollution levels, TNPCB officials say. Simultaneously, the proposed extension of the Mass Rapid Transit System to St. Thomas Mount and the metro rail, when implemented, are also expected to contribute significantly in reducing the number of private vehicles on the roads and consequently the resultant vehicular emissions. Until then, tests should be made more stringent to ensure that all automobiles are checked for their vehicular emission levels, said a TNPCB official.

49. M&M, Navistar in JV for Diesel Engines

Mahindra & Mahindra has formed a joint venture with US-based Navistar International Corporation to produce diesel engines for medium and heavy commercial trucks and buses in

India. The combined investment in the joint venture is pegged at \$90 million which will be spread over the next five years.

The joint venture will be named as Mahindra International Engines (MIEL). M&M will hold 51 per cent stake and Navistar will hold the balance of 49 per cent, M&M informed the Bombay Stock Exchange.

This is Navistar's second joint venture with M&M. It formed its first joint venture with Mahindra & Mahindra in 2005 to make light, medium and heavy commercial vehicles for India and export markets.

The new company's advanced diesel engines will power the full line of trucks and buses produced by the preceding joint venture beginning in 2009.

Engine components will be sourced locally, going up to 85 per cent within two years, due to the strong availability of quality parts and materials from Indian suppliers.

50. Only Seven of Bangkok's 60 'Green Roads' Have Safe Air, Probe Finds

Bangkok's Sukhumvit Road is the most polluted among the 60 major roads that the city administration has earmarked for improvement. According to the latest survey, conducted from July to September by the Bangkok Metropolitan Administration (BMA), the air on Sukhumvit has over 300 micrograms of dust particles per cubic meter (mpcm), far above the standard of 120 mpcm.

Sukhumvit Road starts near the heart of Bangkok's business and tourist districts and runs eastwards into Samut Prakan province.

High levels of small dust particles are regarded as a risk factor for residents' health, especially for the young, elderly and sufferers from respiratory diseases, according to BMA's Air Quality and Noise Management Division.

Of the 60 major roads previously surveyed by the BMA, only Phitsanulok, Sukhothai, Henri Dunant, Thai-Chinese Friendship, Rajvithee, Yaowarat and Rajdamnoen roads were classified as "green", meaning the air quality was safe. The remaining 53 were classified as "yellow", meaning they had some impact on health.

"We hope to improve air quality in these places," said deputy Bangkok governor Bannasopit Mekvichai.

Although the city's Air Quality Index has improved over the past year, there is still room for improvement, and the BMA hopes more roads will be upgraded in terms of air quality.

The city started its air-quality management project with 10 "green roads" in 2004. In 2005, 60 major roads were covered, and the first Air Quality Index inspection measuring fine particulate matter and total suspension particles was conducted.

Theera Prasitthipol, deputy director of the Environment Office, said previous opinion polls had shown that most respondents were moderately satisfied with the air-quality improvement project. However, about 90 per cent of respondents complained about too much dust and exhaust fumes on city roads.

Sukhumvit's dustiness is largely due to heavy traffic and the road's physical environment, which does not allow sufficient ventilation, plus construction of a 5.2-km extension of the Skytrain mass-transit system from On-nuj to Sukhumvit 107.

Other dusty roads include Somdet Phrachao Taksin Road on the other side of Bangkok, where a Skytrain extension is also under construction, and Ramkhamhaeng Road and Prachacheun Road, both of which usually have heavy traffic.

Theera said construction of the mass-transit infrastructure on these major roads, as well as work on new housing projects and many new cars have contributed to an increase in dust and small particles in Bangkok's air.

At present, the city's measures to manage this problem include cleaning roads more frequently and planting more trees on traffic islands and footpaths as well as near bus stops to reduce carbon dioxide. All district offices are required to plant more trees and wash streets in their jurisdiction twice a week.

Air quality is measured three times a year using sensors installed at designated locations for 24-hour monitoring.

The BMA also works with city police and the Pollution Control Department to take legal action against vehicles spewing black smoke and/or making excessive noise.

Builders are also asked to protect the environment by covering construction sites properly to contain dust and small particles.

51. Jakarta's Old Town to Be Car-Free Once Each Month

Several streets in Central Jakarta's Old Town area will be closed to motorists on Sunday from 6 a.m. to 2 p.m. to reduce air pollution at the tourist destination. The city administration has announced the Old Town area will be a car-free zone on the fourth Sunday of every month, beginning in November. The move is in accordance with a 2005 bylaw on air pollution control.

The policy will affect Jl. Pintu Besar Utara, Jl. Cengkeh and Jl. Tongkol, which are home to Fatahillah Square, the Jakarta Museum, the Puppet Museum and Red House. Cyclists,

pedestrians and public transportation will be allowed on the streets; all other motorists will be rerouted. Jakarta Environment Management Board head Budirama Natakusuma said the ban would allow Old Town visitors to enjoy fresher air.

The city administration first introduced car-free days in September, when it closed Jl. Sudirman and Jl. Thamrin from 6 a.m. to 7 p.m. to private vehicles and taxis. However, the event failed to achieve its goal of reducing air pollution, as motorists simply jammed alternative streets rather than leaving their vehicles at home.

Poor coordination between police and the Jakarta Transportation Agency left motorists confused, resulting in many cars being allowed to enter the supposedly closed-off streets. Budirama blamed motorists' ignorance for the failure. "We have to work hard to raise people's awareness of the importance of reducing air pollution."

Between 2001 and 2005, Jakarta experienced an average of fewer than 11 clean air days a year. In 2006, there were 45 clean air days, while there have been 54 so far this year

The administration said vehicle emissions accounted for 70 percent of air pollution in the capital.

A 2005 by law stipulates that each of Jakarta's five municipalities must organize one car-free day at the end of each month. The city administration earlier said it planned to fully enforce the bylaw by November, but to date only Central Jakarta has organized a car-free day.

52. Sri Lanka to Tighten Environmental Laws

Sri Lanka plans to tighten environmental protection regulations next year with vehicle emissions being a key target of the authorities, officials said. The government has recently launched a vehicle emission testing program to check noxious gas and particulate emissions.

Registrar of Motor Traffic B Wijeratne says there about 1.9 million vehicles on the roads now though his department has registered about three million vehicles so far. By the end of 2008, the vehicle population is expected to reach 2.4 million.

The country's three-wheeler taxis which use two stroke engines have become a key cause of atmospheric pollution in the city. The county has announced a ban on the import of two-stroke engine three wheelers and motorcycles. However the move is resisted by three wheeler owners who are politically powerful.

"There has been an alarming increase in respiratory disorders particularly among children in the country for which the primary cause is unchecked vehicle exhaust emissions," Ruwan Wijemuni, deputy chief medical officer of the Colombo Municipal Council said. Tests have found that air quality of the ground floor of urban schools was much worse than that of rural schools.

Emission certificates would be made compulsory from April 2008 for all vehicles. The certificate would have to be submitted to get the annual revenue license. Two firms, Clean Co. (Pvt.) Limited and Laugfs Holdings Limited, have been officially authorized to conduct the tests, through 32 permanent and 80 mobile testing stations.

Sri Lanka's government policies have contributed to environment pollution and discouraged the use of cleaner fuels and smaller vehicles. Diesel is heavily subsidized compared to petrol, despite petrol being a cleaner fuel. This has discouraged its use. Diesel vehicles in general are heavier than petrol ones.

Most politicians use heavy, diesel guzzling super luxury jeeps imported duty free. Earlier this year government officials were provisionally given a chance to import more than 20,000 tax slashed cars.

In the 1990's people stopped buying petrol cars and switched to heavier, diesel vans, as petrol was priced at 50 rupees a liter and diesel at only 13 rupees. Starting from 2002 the gap between diesel and petrol was narrowed, and leaded petrol was eliminated. But in 2007 the gap between diesel and petrol has started to widen again.

Two private companies Clean Co Lanka (Pvt) Ltd and Laugfs Eco Sri (Pvt) Ltd are to invest over Rs 1 billion to implement the Government's Vehicle Emission Testing program aimed at creating air pollution free environment for the benefit of future generations. These two companies have been selected for this Public Private sector Partnership in a transparent tender procedure to issue emission testing certificates following an emission test on vehicles with effect from the 1st of April next year.

Director Clean Co, Anura Vidanagamage, noted, "simple matters such as shabby fuel caps, worn-out spark plugs, bad air cleaners, and improper engine tune-up can cause unacceptable levels of vehicle emissions. Emissions mean unburned fuels, and if we reduce fuel consumption by 1% by emission control, it saves Rs. 1 billion yearly to the nation. We strongly believe that unless this is monitored and regulated, the damage caused, could in the near future be detrimental for the healthy existence of all living beings."

53. Report Says Sydney Exposed To Dangerous Pollution

According to an air audit to be released by the Total Environment Centre, national standards for photochemical smog and fine particles are breached regularly, exposing the city's residents to dangerous chemicals.

"The reason for this is clear: failure to deliver promised public transport infrastructure and reduce vehicle use," the centre's director Mr. Jeff Angel said. After nearly a decade, the State Government's air quality program has failed to produce a meaningful improvement in Sydney's air quality with programs to curb rising motor vehicle use stalled.

An independent report detailing the progress of Action for Air strategies and policies is to be presented at the NSW Government's Clean Air Forum. Last week, the NSW Government claimed air quality in the Sydney basin has improved thanks to reductions in large particle air pollution. The audit about to be released argues that fine particle pollution is posing an increasing risk to health as it can enter the lungs, causing extreme health hazards.

The audit claims that the main source of fine particle pollution is motor vehicles, especially diesel powered vehicles, industry and the residential sector, especially solid-fuel heaters. The audit discloses that unchecked growth in vehicle use is offsetting the gains made thanks to the move towards using cleaner fuels and engines as well as measures to reduce industrial pollution.

"When 'Action for Air' was released in 1998 the State government committed to a major expansion of Sydney's transport infrastructure," Mr. Angel said. "While all road projects in the strategy have been completed on or close to time, rail projects have been cancelled, delayed or only partially implemented."

"It is clear Sydney will face worsening traffic and air pollution unless urgent steps are taken to improve public transport," Mr. Angel said.

54. Pakistan Senate Rips Delays in Euro-2 Diesel

Pakistan's Senate Standing Committee on Petroleum and Natural Resources released a report attacking the government's "inability to reduce sulfur content in diesel despite the doling out of billions of rupees of public money in incentives to refineries," according to a report from Pakistani newspaper, Dawn. "The add-ons were allowed to oil refineries back in early 2000 to reduce sulfur and this grace period ended in 2003 but these could neither improve the quality nor pass on the benefit to the end users, i.e. consumers," the report said.

"The government had allowed local refineries in 2000 to charge 10% duty on the sale of high speed diesel and 6% on kerosene, jet fuel and light diesel with the condition that such revenues should be used through a reserve fund for re-configuration of refineries, latest by 2003, to meet the Euro-II standards [500-ppm sulfur maximum] envisaging low sulfur content. About Rs50 billion were collected through this levy in about seven years but none of it was used for technology up gradation."

The report directs the ministry of petroleum and natural resources "to ensure hydro desulfurization of diesel by oil refineries in Pakistan in accordance with the European standards to achieve the Euro-II specification of high speed diesel by 2010," the newspaper said. "Any refinery not complying with the instructions regarding sulfur contents should not be allowed to sell its products as human health was more important than everything else," the committee report said.

55. China Tells Officials Not To Buy Gas-Guzzlers

China has asked government officials to abstain from using four-wheel drive vehicles and other gas-guzzling cars to lower emissions and protect the environment, state media has reported.

"Government-issued cars should set an example," the official People's Daily newspaper quoted a notice from State Council administrative organs as saying. The notice urged officials to take public transport on official business, and "put cars away for safe-keeping" during national holidays.

It reminded them that hiring out government cars for profit was illegal. It also placed a freezing order on existing departments commissioning new cars, to lower the number of vehicles on the government pay-roll and clear out a back-log of cars in violation of standards.

The order instructed officials to organize training and "fuel conservation competitions" with the goal of lowering fuel consumption by 20 percent in 2008.

Fearful that environmental degradation will prove an obstacle for future growth China has pledged to cut emissions of acid-rain causing sulfur dioxide emissions and chemical oxygen demand -- a measure of water pollution -- by 10 percent between 2006 and 2010, but last year failed to meet the annual target.

56. India Says Global Pact on Climate Change Will Require Adaptation Help

India's government will release a national strategy to address the challenges posed by climate change "in a few weeks," and one of its central messages will be that any future global agreement must help developing countries to meet the huge but largely ignored costs of adapting to droughts, floods, disease, and other problems, an official said on October 31st.

Prodipto Ghosh, a member of the recently formed Prime Minister's Council on Climate Change, said India is "extremely vulnerable to natural variability." Ghosh said costs of drought survival programs, flood shelters, malaria control, support to farmers, and other measures needed to help India's more than 1 billion people adapt to climate change come to a significant 2 percent of India's gross domestic product. Yet these costs are overlooked in multilateral talks about measures to address climate change, he said.

India and China are two of the lowest emitters, per person, of gases that contribute to climate change, yet they are portrayed as being among the biggest polluters on the planet. "We have not caused [climate change], but we are the worst sufferers," said Ghosh, who stepped down as secretary of India's Ministry of Environment and Forests earlier this year.

Besides underscoring the costs of adaptation, India's forthcoming climate change plan will also highlight the link between rising fossil fuel-based pollution and economic growth, Ghosh said. India needs to support economic growth to fight widespread poverty. He said India therefore

cannot accept legally binding emissions cuts when nearly 80 percent of its population lives on less than \$2 a day, so long as its per capita emissions remain many times below those in the United States, Canada, and other developed countries.

SOUTH AMERICA

57. Colombia Converts Public Transport to ULSD in 2010; Nationwide in 2013

Colombia's government has announced that state-owned Ecopetrol has agreed to convert the entire nation's diesel supply to 50-ppm sulfur ULSD standards by 2013. Public transport buses in Colombia's major cities will get the ultra-low-sulfur diesel fuel three years early, in 2010, as suggested in legislation that passed the House of Representatives only days earlier.

Environmental studies show that the number one air pollutant in Colombia's major cities is diesel exhaust, caused by black-smoke-belching trucks and buses running on 4,200-ppm sulfur diesel fuel. However, Bogota today gets a better-quality diesel (800-ppm sulfur) from Ecopetrol.

Under the deal, Ecopetrol will begin supplying the 50-ppm sulfur ULSD to big-city public transport vehicles Jan. 1, 2010, while the rest of the country converts to ULSD in 2013. As a run-up to ULSD conversion, Bogota will get 500-ppm sulfur diesel starting July 1, 2008, while the rest of the country converts to 3,000-ppm sulfur diesel. A year later, the non-Bogota diesel sulfur level drops to 2,500-ppm. When the major cities convert to 50-ppm ULSD in 2010, other areas in Colombia will get 500-ppm sulfur diesel, until 2013 when the entire country switches to ULSD.

The decision came despite criticism from the Interior Minister who in an October 16 letter to the House of Representatives said that Ecopetrol had claimed that it would be "impossible" to comply with a 50-ppm sulfur mandate, according to a report from El Tiempo (Bogota). Given that Ecopetrol is investing heavily in ULSD production for export markets at its Cartagena refinery, this claim would seem dubious. However, Colombia still controls retail diesel fuel prices below international free-market prices, thus discouraging clean-fuel investment. On the other hand, the government-dictated retail subsidy has been gradually diminished over the past two years, with diesel prices now slightly below world free-market prices.

Importing ULSD in order to meet a mandate would require raising diesel prices by 770 pesos (U.S. 37¢) per gallon, the Interior Minister had said.

Public transport vehicles in Bogota currently consume about 12,200 barrels of diesel daily, the report said.

In a separate press statement, Ecopetrol pointed out that over the next three years it will have invested U.S. \$2.5 billion on upgrading fuels quality at its refineries. Old vehicles with poor emissions-control systems are largely to blame for the high levels of particulate matter (PM) in

cities, Ecopetrol said. Nevertheless, “Ecopetrol has committed to reduce sulfur to 50 parts per million in diesel for all public transport in all the country by 2010 and for all diesel fuel, with great efforts, by the beginning of 2013,” Ecopetrol said.

58. Sao Paulo, Minas States Threaten Petrobras Over ULSD Delays

Two major state governments, Brazil’s bar association and environmental advocacy groups are claiming that Petrobras is criminally negligent by failing to desulfurize diesel fuel (to Euro-4, 50-ppm sulfur limits) by a 2009 deadline set by the nation’s Conama environmental council. Instead, Petrobras is only aiming to introduce Euro-4 ULSD in major cities by 2010, leaving the rest of the country stuck with higher-sulfur (500-ppm), dirtier diesel fuel, the critics complain.

The dual-fuel, dual-standard situation won’t stop older, dirty-diesel trucks and buses using high-sulfur diesel fuel to enter major Brazilian cities, undercutting the clean-fuel/clean-vehicle efforts restricted to big-city borders.

Now, according to a report from Agencia Estado news service, “the governments of São Paulo and Minas Gerais, the Bar Association of Brazil (OAB) and non-governmental consumer and environmental defense organizations are taking action against Petrobras” because its ULSD plans are allegedly too little and too late. “A representation already was delivered to the Public Prosecution service of the State of São Paulo, demanding criminal action against the company,” the report said. “The same group will present to the Self-regulation Advertising executive agency (Conar) an analysis order on the advertising made for the Petrobras as a social and environmentally responsible company. “It is false advertising,” the report quoted the secretary of the Environment of the State of São Paulo, Xico Graziano, as saying.

The groups also will ask that Petrobras be removed from the Sao Paulo Stock Exchange’s listing of the Index of Sustainable Enterprises (ISE), claiming that Petrobras fails to recognize its commitment to social responsibility and enterprise sustainability.

“The movement aims at to force Petrobras to fulfill Resolution 315, of 2002, of the National Environment Agency (Conama), within the program of control of air pollution. According to that norm, diesel commercialized in the country must have no more than 50 parts of sulfur per million, from January of 2009, in order to reduce air pollution cancer risk.”

59. Petrobras Says It Plans Investment to Produce Cleaner Diesel

Perhaps in response to the threats from Sao Paulo, Petroleo Brasileiro SA said it plans to spend 9 billion reais (\$4.9 billion) to produce cleaner-burning diesel. The investment, which runs through 2012, will be used to upgrade refineries to cut the amount of sulfur in diesel, the Rio de Janeiro-based company said in a statement.

Petrobras is stepping up efforts to increase supply of low-sulfur fuel ahead of a new law that requires domestic automakers to produce cleaner engines. New vehicles sold in Brazil have to meet the standards starting in January 2009.

“We will ensure supply for the new engines,” Paulo Roberto Costa, the company's supply director, said at a press conference in Sao Paulo. “We're committed to this investment.”

Diesel in Brazil currently has a sulfur content of 500 parts per million in cities and 2,000 ppm in rural areas, Petrobras said. The company will reduce sulfur to as low as 50 ppm starting in 2009 and phase out production of 2,000-ppm fuel by 2013.

MIDDLE EAST

60. Saudi Arabia to Reduce Diesel Exports Next Year

Saudi Aramco will cut diesel exports to 880,000 tons next year from 2.2 million tons in 2007, and will not renew any of its annual term deals, as domestic demand grows swiftly, industry sources have said.

"Gas oil exports will be reduced because domestic demand is very strong," said one source involved in supply discussions, adding that all shipments will be sold on a spot basis. The grades will be a mix of 0.05 per cent and 0.5 per cent sulfur. Another source said: "Domestic diesel demand has already caught up with production."

Oil demand is booming in the kingdom, thanks to petrodollar-fuelled economic growth and low domestic prices, forcing it at times to import extra supplies. The economy grew 4.3 per cent last year.

Aramco, which owns around 1.8 million barrels per day (bpd) of refining capacity in the country, imported 250,000 tons of diesel from August to October, as plant maintenance coincided with peak summer demand.

Exports also fell, as some Saudi cities have already moved on to cleaner diesel of 0.05 per cent sulfur from 0.2 per cent, which requires a greater level of secondary refining.

The supply cut followed on the 2007 term contract which saw diesel shipments being reduced to two million tons from four million tons in 2006.

61. Dry Winter Days Mean More Air Pollution in Tel Aviv

Scientists see a direct link between dry winters and an increase in the number of days with excessive air pollution in the greater Tel Aviv area. The connection stands out in the fall and early winter seasons, which are characterized by a climate phenomenon termed "Red Sea

trough" - a system of surface atmospheric circulation patterns whose influence is recognizable at sea level.

A study dealing with the impact of synoptic conditions on nitrogen oxide concentrations in the Dan region was presented at a conference on air pollution organized by Tel Aviv University and the Environment Ministry. The researchers presented the results of a study dealing with nitrogen oxides. The compounds are a major cause of air pollution, and a large share of these is emitted by motor vehicles. Researchers studied the link that existed in the years 1998 to 2004 between various synoptic scenarios, such as sharav, easterly hot airflow or strong westerly winds, and days on which nitrogen oxide concentrations exceeded allowable levels.

Conditions for high-level air pollution usually develop when winds are weak, and the air pollution is prevented from dispersing and dissipating. These conditions ordinarily exist at night and under the impact of situations termed "barometric levels." In the case of the Dan region, the research found that the greatest number of days with excessive air pollution was during periods of Red Sea trough (RST). This is a synoptic condition characterized by hot southeasterly winds and it occurs in the transition seasons and early winter.

More than half of the days with excessive air pollution in the period studied (477 days in total) coincided with the RST. More than a third of the days on which the RST was felt registered excessive air pollution. Summertime had almost no days of excessive air pollution. That season is dominated by the Persian trough, which is characterized by strong westerly winds and mixing of air layers that helps disperse the pollution.

According to the study, the contrast between the easterly winds brought by the RST and the sea breeze typical of the coast weakens the winds, reducing the ability to disperse pollutants. In addition, the cool air coming in from the sea increases stability. These conditions predominate in winter and typify conditions of pollution from transportation.

Pollution dispersal, however, can adversely affect other areas in Israel. Winds bring air pollution from the Dan region to areas distant from the coast, and there solar radiation causes chemical reactions that turn the pollutants into ozone at a lower atmospheric layer. Exposure to ozone greatly increases health risks. According to the Environment Ministry, last year there were 260 days on which the Etzion region registered ozone levels in excess of that recommended by the World Health Organization.

62. Annual Report on Air Quality Monitoring in Israel Published

Israel's annual report on air quality monitoring for 2006 presents data on the state of air quality in Israel. The Ministry of Environmental Protection invests major efforts in quality control and data quality assurance in order to provide a reliable database for planning, policy making, setting air quality standards and research.

The annual monitoring report includes data obtained from most of Israel's air quality monitoring networks, including the Ministry of Environmental Protection's 24-station Air Quality Monitoring Network and stations operated by associations of towns for the environment, Israel Electric Corporation, local authorities and the Israel Airports Authority.

Monitoring results for 2006 reveal a trend of improvement in pollution caused by transportation sources in Jerusalem and in the Tel Aviv metropolitan area. However, elevated ozone concentrations characterize many of Israel's internal regions, underlining the importance of further reducing hydrocarbon and nitrogen oxides emissions from vehicles, gas station, power plants and industry.

Following are the main findings for 2006:

- 59 high air pollution days in the Tel Aviv metropolitan area in 2006, compared to 61 days in 2005.
- 32 high air pollution days in Jerusalem, compared to 52 days in 2005.
- Annual exceedance of the target standard for PM 2.5 in all monitoring stations which measure fine respirable particles smaller than 2.5 micrometers.
- Annual exceedance of the standard for respirable particles smaller than 10 micrometers (PM10) in Haifa's French Carmel neighborhood, Tel Aviv, Givataim, Modi'in, Nir Galim in the Ashdod region, Bat Hadar in the Ashkelon region and in transportation stations in the Tel Aviv metropolitan area.
- Deterioration of air quality in Haifa for ozone and respirable particles.
- Increased ozone concentrations in the Neve Sha'an an neighborhood in the Haifa region, Beit Shemesh, Gush Ezion and Kiryat Malachi.
- Isolated exceedances of the ozone standard in the Neve Sha'an an and French Carmel neighborhoods, Nesh er, Kiryat Ata and Kiryat Tivon in the Haifa region, in Givat Ha'More and Afula, in Moshav Kerem Maharal and in Kibbutz Ha'mapil, in Beit Shemesh, Gush Etzion, Kiryat Malachi and Ramat Hovav's "Shemen site."
- Exceedance of the World Health Organization's annual standard for nitrogen dioxide in the old central bus station of Tel Aviv-Jaffa, Ramat Gan and the Kfar Hayarok Junction in Ramat Hasharon.
- Annual exceedances of the nitrogen dioxide standard in all of Israel's transportation stations, although a trend of improvement has been noted since 1998.
- An isolated exceedance of the World Health Organization's 1-hour standard for nitrogen dioxide in the Ahad Haam transportation station in Petach Tikva.

AFRICA

63. South Africa Automakers Warn of Possible Diesel Misfueling

The National Association of Automobile Manufacturers of South Africa (NAAMSA) has issued a bulletin warning drivers of late-model diesel cars that they shouldn't use 500-ppm sulfur diesel,

but rather the 50-ppm sulfur ULSD now widely available. “Effective 2006, two grades of diesel were legislated by the South African Department of Minerals and Energy with maximum sulfur levels of 500-ppm (parts per million) and 50-ppm respectively,” NAAMSA noted. “While all diesel vehicles benefit from the use of low sulfur diesel, the 50-ppm grade was specifically introduced to accommodate the increasing number of new technology diesel vehicles entering the South African market designed to operate on current European diesel fuel which has a maximum sulfur level of 50-ppm and to allow the introduction of new technology particle filter equipped diesel vehicles which should only use diesel fuel with a sulfur level not exceeding 50-ppm. The 50-ppm low sulfur grade is now being marketed by an increasing number of oil companies in South Africa alongside the standard (500-ppm) grade. However, it remains a concern that, despite Government legislation, many filling stations still do not display legally prescribed labeling to indicate the maximum sulfur level of the diesel fuel on sale. Where no sulfur level is indicated on the fuel pump, motorists should assume that the diesel is of the standard quality and not the low sulfur 50- ppm 'clean' grade as stipulated by an increasing number of vehicle manufacturers . . . To assist motorists, a list of fuel companies and filling stations supplying sub-50 ppm low sulfur diesel is maintained on the NAAMSA website: www.naamsa.co.za/unleaded/diesel.htm.”

64. Durban Proposes Emissions By-Laws

Durban is expected to have new by-laws in place by June next year that would see diesel-powered vehicles in the municipal area stopped and tested for exhaust emissions. The owners could be fined if the vehicles do not comply with the proposed bylaws, says The Mercury. The eThekweni Municipality's Vehicle Exhaust Emissions Management Strategy was to be put in place to ensure that diesel exhaust emissions were reduced and air quality in the municipality monitored and kept at a satisfactory standard. The strategy was developed by a team aided by foreign funding. The plan will have to be approved by several committees, including the executive committee and the full council, before being adopted and its regulations written into the municipality's bylaws.

In Cape Town, the city's zero tolerance on air pollution has seen warrants of arrest being served on three motorists for having high levels of vehicle emissions. Ivan Toms, city Director of Health, said in a report to the city's Health Portfolio Committee that the department had tested more than 1 700 vehicles in the past three months, slightly below the target of 1 800, says the Cape Times. Of the more than 50 summonses served by the city's diesel vehicle testing teams during this time, nine people paid admission of guilt fines, 12 cases were still pending and 28 were struck off the roll due to incomplete documentation.

Bylaws could be in place by June next year that would see diesel-powered vehicles in the eThekweni municipal area stopped and tested for exhaust fume emissions.

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The Deputy Head of Pollution Control Support in the health department, Siva Chetty, said that the strategy was not only intended to fine vehicle owners and pull their vehicles off the road, but also to create an environment in which diesel emissions were low.

If a vehicle was found to have exceeded the permitted emission limits, the owner would be given a month to rectify the problem. The owner would report back to the department, and a fine would be issued if the problem was not fixed. The fine system would work in a similar fashion to speeding and other traffic-related fines, and repeat offenders could have their vehicles taken off the road.

Chetty said the "concept by-law" was finalized and it would now be taken to various stakeholders, including the public, before it was written into law.

Vehicles would be pulled off at roadside testing stations manned by a traffic officer, a diesel vehicle emissions testing officer and two assistants. The test would involve inserting a probe into the vehicle's exhaust pipe. The engine would be accelerated to its maximum speed - after being warmed up - while the smoke meter took individual and average readings.

Council-owned vehicles would be the first to be tested, thereafter, other major fleet owners would be approached to buy environmentally friendly vehicles and encouraged to use low-sulfur diesel, which is safer for the environment.

GENERAL

65. UN Says Developed Nations Have Cut Emissions, But Trend Is Moving Up

Total global greenhouse gas emissions from industrialized nations have declined only slightly since 1990--from 18.7 billion metric tons that year to 18.2 billion metric tons in 2005--as emissions cuts in former Soviet bloc nations and in some European nations were offset by increases in Turkey, Spain, Australia, the United States, and Japan, the United Nations climate change secretariat said in a report released on November 6th.

Industrialized nations overall saw a 2.8 percent decline in emissions over the 15-year period, according to the report, National Greenhouse Gas Inventory Data for the Period 1990-2005. The report covers emissions from 40 developed nations and the European Community.

Over the most recent period covered in the U.N. report, the European Community reduced its overall greenhouse gas emissions from 4,227 million metric tons in 2004 to 4,192 million metric tons in 2005. The United States reported an increase from 7,189 million metric tons to 7,241 million metric tons of greenhouse gas emissions over that period, although more recent data suggest it may have curbed its overall emissions slightly in 2006.

The greenhouse gas emissions covered in the report include all forms of emissions produced by human activities, including carbon dioxide, nitrous oxide, methane, and hydrofluorocarbons but do not take into account practices that may have reduced emissions below the annual totals, including land use changes and forestry practices.

66. International Energy Agency Raises Alarm About Chinese, Indian Demand

China and India's demand for oil and gas is expected to dramatically transform the global energy market, pushing demand inexorably higher and posing major risks to prices, long-term supply, and the environment, the International Energy Agency said on November 7th. They put this analysis of Chinese and Indian impacts on global markets and climate change at the center of its annual World Energy Outlook.

The IEA projects that China and India will more than double energy use by 2030, accounting for nearly half of all global energy demand growth over this period.

While much of the two Asian giants' projected growth will be fired by coal, the IEA forecasted that both China and India's oil imports will by 2030 reach levels seen today in the United States or Japan. With most oil supply increases over the coming two decades likely to come from a handful of countries in the Middle East and Russia, the IEA said it is worried that producers will slowly gain the upper hand in the perennial battle over prices. The IEA also pointed out that growing dependence on Middle Eastern oil will boost the chances that geopolitical tension in the region spills over into energy markets.

Under the IEA's business-as-usual scenario, a continued reliance on fossil fuels will lead to 57 percent growth in global energy-related carbon dioxide emissions by 2030. Under that scenario, China--whose energy needs draw largely on coal--is expected to overtake the United States as the leading emitter of carbon dioxide by year-end 2007, the IEA said.

China's per-capita emissions will approach average levels seen in the world's industrialized countries by 2030, according to IEA projections.

India, whose power generation needs are also largely centered on coal, is slated to become the world's third-largest emitter by 2015, the IEA said.

Immediate implementation of tighter energy efficiency standards--combined with a range of other policy measures, including wider use of nuclear fuel and renewable energy--could bring about important reductions in fossil fuel consumption and greenhouse gas emissions, the IEA

said. But even under so-called alternative policy scenarios, global carbon dioxide emissions will still be one-quarter above current levels in 2030, the IEA said.

Stabilization and eventual reductions in the concentration of atmospheric carbon dioxide will only come about in the event of "exceptionally quick and vigorous policy action by all countries," coupled with "unprecedented technological advances, entailing substantial costs," the IEA said.

Highlights of the Report Include:

- While China and India will need to invest about \$5 trillion (in 2006 dollars) between now and 2030 for all sorts of energy-supply projects, most of that will go for electricity generation and distribution, the report says.
- As for coal to liquids (CTL), about \$41 billion is seen invested in China in various projects by 2030, under a "baseline" scenario assuming continuation of present trends.
- The report notes that last year, China's National Development & Reform Commission (NDRC) approved a national investment plan totaling some \$128 billion in CTL fuels and chemicals, with a special focus on Xianjiang for CTL and Mongolia for methanol. Some 30 coal-gasification or direct-liquefaction projects either are in planning or construction stages, the report says.
- Among future projects, about 20 CTL plants are either under construction or under consideration, costing about \$15 billion and representing about 16 million tons/year of oil equivalent capacity, it says.
- Coal used in CTL plants "is expected to rise rapidly, reaching 72 million tons of oil equivalent in 2030," the report says.
- While CO₂ emissions and water shortages may pose problems for future CTL expansion in China, "prospects for widespread commercialization of alternative coal-based fuels over the projection period [to 2030] are good, particularly if conventional fuel prices remain high and stricter transport fuel quality standards are introduced as planned," the report says.
- Methanol-in-gasoline is one possible CTL fuel, the report notes. However, world automakers condemn the use of methanol in gasoline because of corrosive damage to fuel systems and vehicle emissions problems. China to date has been lax about methanol blending in gasoline. But that may change.
- While China's domestic oil production is likely to fall in coming decades, CTL will help to compensate, the report finds. "We project that CTL production will reach 250,000 barrels/day in 2020 and 750,000 b/d in 2030," the report says. "The recent increase in oil prices has made CTL production a profitable option. It is expected to be a particularly attractive technology in China because of the availability of cheap local coal."

- However, outside private investment in CTL is complicated by provincial government politics, the report warns. “Investment risk is heightened where provincial governments seek to link coal mine investments with much larger downstream investments in power generation, CTL, chemicals and coking plants,” which explains why only two coal mines in China have been developed by foreign investors (at Antaibo and Daning, Shanxi), the report says.
- If China instead pursues a higher-efficiency “alternative policy scenario” rather than the baseline scenario used in the report, then CTL output could rise even more, the report says. Under this “alternative” scenario, CTL production hits 1 million b/d in 2030, causing between 140-250 million tons of CO₂ annually, “depending on the production process used,” but not including carbon capture & storage (CCS).
- Aside from CO₂, “more worrying are the implications for water,” the report says. “Water needs will be between 250 and 550 million cubic meters per year. Most of the currently planned CTL projects are located near to coal resources, notably in Inner Mongolia and Shanxi, provinces which already face serious water shortages. “Priority is at present given to supplying households, irrigation for agriculture and existing power facilities. It may prove to be very difficult for new CTL projects to obtain sufficient water supplies,” the report warns.
- If on the other hand China pursues a “high-growth scenario” that exceeds the baseline or “alternative” policy scenarios, then CTL production could hit 1.3 million b/d by 2030, or 560,000 b/d more than in the baseline scenario.

67. OECD Sees Diesel Demand up 4.5% in Latest IEA Report

Demand for diesel among the member nations of the Organization for Co-operative and Economic Development (OECD) increased 4.5% year-on-year in September to 9.73 million b/d, according to the latest *Oil Market Report* by the International Energy Agency (IEA).

In North America, diesel demand increased 7.3% to 4.1 million b/d. Diesel demand increased 6.6% in the U.S. (although IEA points out that this is overstated because high-sulfur diesel, including heating oil, was reclassified as “diesel” this year). Diesel demand rose 3.4% in Canada and 0.3% in Mexico. In the U.S., gasoil/diesel net imports are predicted to rise, thanks to strong diesel demand even as hydrocracking additions slightly improve U.S. refineries’ distillate yields.

Meantime, off-road diesel specifications in the U.S. have been tightened in 2007 to a sulfur content of 500-ppm, with more tightening due in 2010, bringing it into line with on-road ULSD at 15-ppm sulfur. To meet this growing low and ultra-low-sulfur diesel demand, refineries continue to invest in diesel hydrotreating capacity, IEA said.

Diesel demand in Europe increased 2.7% to 4.39 million b/d, with Germany increasing 4.6%, United Kingdom 0.3%, Italy 6.3%, Spain 7.4% and France decreasing 3.4%.

The weakness in OECD Europe diesel/gasoil demand continued to relate to persistently lower-than average deliveries of heating oil (gasoil) in Germany and France. In both countries, end-

users once more delayed the refilling of their tanks, thus Europe's September heating oil deliveries fell 18.3% year-on-year, IEA said.

Although there are signs that the rise in prices since the second quarter this year has pressured gasoline and diesel demand growth in the OECD, it is too soon to conclude that major structural changes have taken place, such as a more fuel efficient car fleet, IEA noted. While higher prices have affected OECD end-user behavior, this change may be temporary.

Demand for transportation fuels, including gasoline, diesel and jet kerosene, has been surprisingly strong given high prices, although consumers are becoming more concerned as prices keep going up, IEA said.

While the weak dollar has partly protected European consumers from the effects of the sharp rise in international oil prices, end-user prices for transport diesel reached record highs in October in both France and Germany. Consequently, end-user protests have begun. In France, fishermen went on strike in early November demanding subsidies to counteract the rising cost of diesel.

Transportation fuels demand soared in Japan, as motorists went on the roads to benefit from warm weather. While gasoline rose by 7.7% year-on-year, diesel only increased by 3.9% in Japan, IEA said.

Though the price of diesel is affected by both supply and demand factors, it is supply-side constraints that now appear to be driving the price. The demand for ultra low sulfur distillate (ULSD) in Europe is being affected by two legislative changes, according to IEA.

- First, European heating oil specifications will tighten at the start of next year to 0.1% (1,000 ppm) sulfur. This change has forced some refineries to upgrade their hydrotreating capability to conform to the new specification, increased seasonal maintenance and boosted the need for imports to supply the marginal barrel of ULSD.
- Secondly, the UK is voluntarily changing to 10-ppm sulfur ULSD from the existing 50-ppm sulfur ULSD from December 4, about 13 months ahead of the mandatory tightening required by the European Commission.

Meantime, diesel demand in the Pacific (excluding China) increased 1.8%, to 1.24 million b/d, pushed by the strong rebound in OECD Pacific demand being mostly driven by Japan, which struggled to meet soaring electricity demand amid ongoing nuclear outages.

Diesel demand increased 3.9% in Japan and 5.7% in Australia, but decreased 5.9% in Korea. In Korea, diesel's weakness – for the second month in a row – continued to be related to stock draws because deliveries had jumped by 33% in July, in anticipation of the 7.5% diesel tax hike.

Throughout October, in the non-OECD country of China, inland service stations across the country—most importantly in the capital Beijing—were forced to ration diesel and in some, 90

and 93 RON gasoline too. Even though state-owned Sinopec and PetroChina promised to increase supplies, either through higher imports or increased output, local traders suggested that the National Oil Companies (NOCs) were quietly resisting the government's pressure to meet domestic demand and were seeking to find a compromise.

Then on October 31, the government announced a 9% surprise increase in gasoline, diesel oil and jet fuel/kerosene 'guidance' (wholesale) prices from November 1st, according to the *Oil Market Report*. Additionally, at about \$0.70/liter, gasoline and diesel prices in China remain lower than international levels. The government reportedly will give direct subsidies to the worst-hit end-users, ranging from fishermen and farmers to urban taxi drivers.

68. Bali Breakthrough Launches Climate Talks

Nearly 200 nations agreed at UN-led talks in Bali to launch negotiations on a new pact to fight global warming after a last minute reversal by the United States allowed a breakthrough. Washington said the agreement marked a new chapter in climate diplomacy after six years of disputes with major allies since President George W. Bush pulled out of the Kyoto Protocol, the main existing plan for combating warming.

But despite its dramatic turnaround in the meeting, which approved a "roadmap" for two years of negotiations to adopt a new treaty to succeed Kyoto beyond 2012, the White House said it still had "serious concerns" about the way forward.

"This is the defining moment for me and my mandate as secretary-general," UN Secretary-General Ban Ki-moon said after making a return trip to Bali to implore delegates to overcome deadlock after the talks ran a day into overtime. Ban had been on a visit to East Timor. "I am deeply grateful to many member states for their spirit of flexibility and compromise," Ban told the press.

Under the deal, a successor pact will be agreed at a meeting in Copenhagen in late 2009.

The deal after two weeks of talks came when the United States dramatically dropped opposition to a proposal by the main developing-nation bloc, the G77, for rich nations to do more to help the developing world fight rising greenhouse emissions.

But the White House voiced reservations about future talks. Negotiators "must give sufficient emphasis to the important and appropriate role that the larger emitting developing countries should play," White House spokeswoman Dana Perino said.

The United States is the leading greenhouse gas emitter, ahead of China, Russia and India.

Indonesian Environment Minister Rachmat Witoelar, the host of the talks, banged down the gavel on the deal to rapturous applause from weary delegates.

"All three things I wanted have come out of these talks -- launch, agenda, end date," Yvo de Boer, head of the UN Climate Change Secretariat, told reporters.

"The US has been humbled by the overwhelming message by developing countries that they are ready to be engaged with the problem, and it's been humiliated by the world community. I've never seen such a flip-flop in an environmental treaty context ever," said Bill Hare of Greenpeace.

The European Union, which dropped earlier objections to the draft text, was pleased with the deal. "It was exactly what we wanted. We are indeed very pleased," said Humberto Rosa, head of the European Union delegation.

German Environment Minister Sigmar Gabriel was cautiously optimistic: "Bali has laid the foundations ... it was hard work and exhausting. But the real work starts now."

But a leading Indian environmentalist was disappointed. "At the end of the day, we got an extremely weak agreement," said Sunita Narain, head of the Centre for Science and the Environment in New Delhi. "It's obvious the US is not learning to be alive to world opinion."

Agreement by 2009 would give governments time to ratify the pact and give certainty to markets and investors wanting to switch to cleaner energy technologies, such as wind turbines and solar panels.

In a day of drama and emotional speeches, nations had berated and booed the US representatives for holding out. A wave of relief swept the room when the United States relented. "The United States is very committed to this effort and just wants to really ensure we all act together," said Paula Dobriansky, head of the US delegation. "With that, Mr. Chairman, let me say to you we will go forward and join consensus," she said to cheers and claps.

James Connaughton, chairman of the White House Council on Environmental Quality, said: "This is not a step taken alone by America. This is a step taken by all the countries that the time had come to open a new chapter."

69. Cardiovascular Disease Cluster Linked to Pollution

A sudden spate of urgent cardiovascular syndromes resulting in severe chest pain that required emergency department visits among residents of Sydney, Australia, in 2005 has been traced to high solar radiance and ozone levels. Surveillance data indicated an increase in urgent visits to city hospitals by individuals with chest pain assessed as "imminently or immediately life-threatening on arrival" in April and May 2005, Dr. Robin M. Turner of New South Wales Department of Health in North Sydney and colleagues report in the journal *Environmental Health*.

Emergency department visits increased from 4.0 per day in 2004 to 5.7 per day for the 8 weeks of April and May 2005.

The researchers compared emergency department visits with daily weather and pollution variables to find an explanation for the sudden peak in urgent cardiovascular syndrome visits. "Given the known association between environmental factors and cardiovascular disease outcomes, and the unusual extended period of dry, mild, stable weather conditions arising from drought conditions at the time, we hypothesized an environmental cause of the observed increase," the investigators write.

They did, in fact, find an association between environmental factors and increases in urgent cardiovascular disease syndromes requiring emergency care. Specifically, high temperatures increased the risk by 27 percent, high radiation levels increased the risk by 44 percent and high ozone levels increased the risk by 13 percent.

The factors that best explained these correlations were probably of "photochemical origin, given the observed associations with ozone, solar radiation and temperature during that period," Turner and colleagues write.

"Both solar radiation and temperature are important catalysts in photochemical smog reactions that produce ozone and other oxidants," the Sydney investigators point out. The chemical reactions have been associated with various cardiovascular disease manifestations, including irregular heart contractions.

"Temperature and solar radiation were unseasonably high during the outbreak period. The addition of drought and high atmospheric pressure provided favorable conditions for atmospheric stagnation and ozone build-up. The reduced variability in air pressure during the outbreak period provides further support to a stagnation hypothesis," Turner and colleagues conclude.

70. UNEP Says Humanity, Other Species Threatened by Climate Change, Degradation

Climate change and environmental degradation are undermining development and threatening humanity and other species on the planet, according to the United Nations Environment Program (UNEP). The stark warning is contained in UNEP's Global Environment Outlook: Environment for Development (GEO-4) report, released on October 25th in Nairobi and New York. The report identifies climate change, the high rate of species extinction, and the challenge of feeding a growing population as critical points to the unfolding calamity.

Releasing the report in Nairobi, UNEP Executive Director Achim Steiner warned that failure to address issues raised in the report puts humanity at risk. "The objective is not to present dark and gloomy scenario, but an urgent call for action," Steiner said.

On climate change, it says the threat is so ominous that large cuts in greenhouse gases are needed by 2050. "Unfortunately, institutions like UNEP, established to counter the root causes of climate change and environmental degradation, are weak and underfunded," Steiner said.

The director noted that negotiations would start in Bali, Indonesia, in December for a treaty to succeed the Kyoto Protocol. The new treaty is expected to bring on board developing countries, some of which are substantial greenhouse gas emitters. "Those countries such as India and China must agree to emission reductions without delay," Steiner said.

Humanity, meanwhile, is living beyond its means. "The global population is so large that the amount of resources needed to sustain it exceeds what is available," the report says. UNEP estimates environmental demand currently stands at 21.9 hectares (54.12 acres) per person, while the Earth's biological capacity is on average 15.7 hectares (38.8 acres) per person.

Priorities for Asia and the Pacific include urban air quality, fresh water stress, degraded ecosystems, agricultural land use, and increased waste. The report notes that illegal traffic and dumping of obsolete electronic and hazardous waste have become an environmental challenge in many developing countries in Asia and Africa.

Many Latin American and Caribbean countries face urban growth, biodiversity threats, coastal damage, and marine pollution. At the same time, Europe's rising incomes and growing number of households are leading to unsustainable production and overconsumption, higher use of energy, and transport problems.

Effects of climate change are being felt as well in North America, where energy efficiency gains have been countered by the use of larger vehicles, low fuel economy standards, and increases in the number of vehicles and distances traveled. But of paramount concern is the hole over the stratospheric ozone layer that protects against ultraviolet radiation. "Even when emission of ozone-depleting substances has decreased in the last 20 years, the ozone layer is expected to take another half a century to recover," the report says.

71. Particulate Emissions From Ships Linked To 64,000 Deaths Each Year Worldwide

Particulate matter emissions from ships are responsible for as many as 64,180 deaths worldwide each year, according to a study published Nov. 5 in the journal *Environmental Science & Technology*³. According to the study, about 16,000 of the deaths are in Europe, 16,000 in South Asia, 15,000 in East Asia, and 9,000 in North America.

The study estimated that 737,000 deaths are caused annually by all particulate matter emissions (not just those from ships), based on studies of the health response to different concentrations of particulate matter. By estimating the contribution of shipping to particulate matter emissions, especially at ports, coastal areas, and along waterways, the researchers estimated that 3 percent to 8 percent of these deaths are caused by shipping.

³ "Mortality from Ship Emissions: A Global Assessment"

This resulted in a high estimate of more than 64,000 deaths from particulate matter emissions from shipping, and a low estimate of 18,920 deaths.

Under the high estimate, 56,790 deaths result from cardiopulmonary disease and 5,050 result from lung cancer.

The researchers said that with the growth in shipping, under current regulations, annual mortality from shipping emissions could increase by 40 percent by 2012.

"Our work demonstrates that mortality and health benefits in multiple regions globally could be realized from policy action to mitigate ship emissions of primary PM2.5 formed during engine combustion and secondary PM2.5 aerosols formed from gaseous exhaust pollutants," the researchers said.

The study was conducted by James Corbett of the University of Delaware, James Winebrake and Erin Green of the Rochester Institute of Technology, Prasad Kasibhatla of Duke University, and Veronika Eyring and Axel Lauer of the Deutsches Zentrum fuer Luft-und Raumfahrt--Institute fuer Physik der Atmosphaere.

72. ICS Says World Shipping Must Act on Air Emissions

The trillion-dollar shipping industry must set global targets to cut greenhouse gas emissions and other air pollutants by the end of 2008 or risk having regional solutions imposed on it, according to the International Chamber of Shipping. Tony Mason, secretary general of the influential industry body, called on the sector that carries 90 percent of the world's traded goods by volume to act in a comprehensive way and as quickly as possible. "We at ICS believe it is absolutely vital that conclusions are reached and improved standards adopted during 2008," Mason told a ship emissions conference in London.

"If governments and industry cannot between them deliver bankable solutions within this deadline, we shall see a serious disenchantment with the International Maritime Organization (IMO) process, and a proliferation of local regulations, led in all probability by the EU and the United States," he said.

Shipping, unlike aviation, has largely escaped close attention over emissions, but pressure is building. In late November, the European Commission urged the IMO to do more. Commission Vice President Margot Wallstrom said both shipping and aviation were "lagging behind" and were not helping European Union plans to extend its carbon market.

The United Nations' IMO, the world's top maritime body responsible for regulating the industry, is due to report by the end of this year on a way forward to combat emissions of carbon dioxide (CO2), the main greenhouse gas.

The shipping industry, with a fleet of up to 60,000 ocean-going vessels, also accounts for about 10 percent of sulfur dioxide emissions and large amounts of toxic nitrous oxide, gases which cause acid rain and deplete the ozone layer.

Ships also produce particulate emissions.

The IMO is busily reviewing current marine pollution laws, known as MARPOL Annex VI, adopted by countries in 1997, but that only came into force globally in 2005. Because of the delay the regulations are seen as inadequate and unable to address huge concerns over how much sea-based transportation contributes to global warming, industry experts say. IMO's review is expected to set out far more stringent standards on completion.

73. Intertanko Defends Worldwide Conversion of Heavy Bunkers to Distillate

Intertanko, the world association of oil and chemical ocean tanker ships, is hitting back against refiner claims that converting the world's intermediate fuel oil (IFO) to lower-sulfur gasoil/diesel (MDO) for ship bunkers isn't practical or would cause excessive CO₂ at refineries.

"The world is looking to the IMO [International Maritime Organization] to introduce one single global standard, or as near to that as it can get, to counter the threat of regional legislation," Intertanko said in a statement. "The environmental footprint of ships, which carry 90% of world trade covering over 30,000 billion ton-miles a year, is extremely light compared to other forms of transport. And yet despite the industry's ton-mile efficiency, it has been left behind by other sectors which are already regulated and compelled to use clean, environmentally friendly fuels.

"This means that the shipping industry has become an easy-to-pick fruit, recently targeted by politicians eager to show that they are still doing something on the environmental front.

"A switch from residual fuel to marine diesel oil (MDO) means a comprehensive and practical strategy for an efficient and long-term reduction of air pollution from ships. Should one expect ships to reduce air pollution while still burning residual fuels? These fuels have a significant content of sulfur, nitrogen (that contributes to the NO_x emissions and thereby ozone or a greenhouse gas), hazardous components including heavy metals and polycyclic aromatic hydrocarbons (PAH) that combine to create a cocktail of particulate emissions and generated sludge.

"The proposal that the shipping industry switches to distillate bunker fuel (MDO) according to a timescale that takes into account fuel availability, delivers immediate, real and global reductions in atmospheric pollution (SO_x, NO_x and PM). It deals with the cause of this pollution rather than the effect – i.e. rather than limiting the rulemaking development to cleaning up the pollution itself. These are among the reasons that this proposal has been gaining support from a growing number of IMO states.

“Switching to MDO aligns the shipping industry with other means of transportation and facilitates innovation to allow the industry to go further and faster in the future as emission regulations tighten still more. Looking at road transportation (trucks and trains) and air transportation, their SO_x, NO_x and PM emissions have already been reduced significantly because these industries were forced by law to use cleaner fuels.

“This has facilitated the optimization of engines and indeed the whole combustion process. In contrast, ships are today allowed to burn a mixture of heavy distillates and a refinery waste product (i.e. refining residues) which is called residual fuel. This flies in the face of the general trend towards cleaner fuels. If society expects cleaner emissions from ships, then governments should apply the same clean fuel measures which have successfully been mandated on other means of transportation - as well as on many land-based industries.”

Intertanko concedes that cleaning up heavy bunkers will cost money. But higher fuel cost is “often recoverable – in part or in whole – through freight rate adjustments,” the trade group said. In contrast, “the fitting, running, maintenance of fuel purification and emission abatement systems [ship stack scrubbing], as well as for the physical disposal of the liquid and solid wastes generated by these systems” are “not cost recoverable,” the group said.

“Supplying cleaner fuels to ships places the burden of cleaning on the oil refiners – who inevitably pass the extra costs through to the ship owners in the cost of the fuel. The process of producing clean fuel is a current operation for the roughly 700 refineries around the world.

“The refiners would dispose of the waste at the end of the process – the ultimate bottom of the barrel is asphalt or coke. By doing this, economies of scale could be achieved rather than dispersing the problem to the individual ships.

“Retaining residual fuels, and purifying the fuel and cleaning the emissions onboard ships, places on the ship owner the full burden of, and responsibility for, this cleaning process. Ships, numbering nearly 60,000 around the world, are not the most efficient vehicles to carry out such a task.

As for supply concerns for MDO, “the total production of the global oil refining industry is around 4,500 million tons a year (tpa). According to IEA figures, new refineries coming on stream by end 2011 will add 14% to refining capacity over end 2005, or some 660 million tpa,” Intertanko said.

“Out of this new capacity, one-third could produce yields of medium/heavy distillates (such as MDO) – or in this case 220m tpa. In addition current refineries are being upgraded and they will have spare capacity for increased production. These two developments will create capacity that comes close to providing the additional 250 million tons of MDO required for all ships today.”

74. Scientists Say IPCC Report Falls Short On Addressing Emissions From Biofuels

A report by the United Nations' Intergovernmental Panel on Climate Change does not properly address increased carbon emissions and other environmental problems that can result from the expanded use of biofuels, a group of scientists said in an October 30th letter to the IPCC. As a result, the letter called on the IPCC to amend the report and said the United States and Europe should more thoroughly examine the environmental effects of biofuels before continuing to subsidize them.

The Fourth Assessment Report is billed as a "comprehensive and up-to-date assessment of the current state of knowledge on climate change." But the letter from five scientists in the United States, Spain, Austria, and Germany told IPCC Chairman Rajendra Pachauri that the part of the report discussing mitigation of climate change, contributed by IPCC Working Group III, contains "serious and dangerous deficiencies" regarding the impact of biofuels.

The letter was signed by David Pimentel of Cornell University; Tad Patzek of the University of California at Berkeley; Florian Siegert at Remote Sensing Solutions GmbH in Munich, Germany; Mario Giampietro of Universitat Autònoma in Barcelona; and Helmut Haberl of Alpen-Adria-Universität in Klagenfurt, Austria.

"With accumulating evidence of multiple adverse consequences for emissions, humanity, and biodiversity from unbridled biofuels expansion, we have grave concerns that the respective parts of IPCC publications will become used to justify further adverse developments and delays in rescinding already erroneous decisions," the letter said.

The letter said that although Chapter 5 of the report mentions that biofuels production "on a massive scale" may result in deforestation and the release of carbon from soil, the report fails to mention that even small-scale biofuels production can lead to destructive land-use changes. In particular, according to the letter, the biofuels market is encouraging farmers to replace forests and other carbon-rich ecosystems with cropland. "This is currently leading variously to major damage to biodiversity, irregularities in land acquisition and other human rights abuses, water pollution, and stress on water resources in addition to the land disturbance emissions," the letter said.

The letter said that emissions associated with palm oil plantations on thick tropical peatlands are "particularly colossal." A recent study found that producing one metric ton of palm oil on peatlands in Asia emitted between 10 metric tons and 30 metric tons of carbon dioxide from drainage decomposition, excluding fires used to clear land, the scientists said. "Increased demand for palm oil will accelerate the conversion of peat swamp forests into plantations and thus will accelerate the release of greenhouse gases and the destruction of biodiversity hotspots," the letter said.

The letter said that the report's estimate of expected carbon dioxide reductions from biofuels fails to account for such land-use-change emissions, which in many instances "could take decades or centuries to recoup."

The scientists further disagreed with the report's conclusion that cellulosic crops like switchgrass may be grown in areas unsuitable for grains and other food/feed crops and thus do not compete with food. "This is incorrect ... since such land is often used as pasture for livestock and is currently under stress in many locations," the letter said.

The report also fails to mention that cellulosic ethanol involves more fermentation than conventional ethanol, thereby using more energy at this stage of the production process, the letter said.

In addition, the letter challenged the report's assertion that increased use of biofuels for transportation "would generally have positive social and environmental side effects." Finally, the letter found no justification for the report's claim that blending biofuels with fossil fuels has produced environmental benefits.

75. Volvo Warns of Biodiesel Emissions, Operating Problems

Running engines on high percentage blends of biodiesel not only will cause excessive nitrogen oxides (NOx) emissions but also could cause the engine's torque limiter to kick-in, according to Volvo. In a report from Motor Transport (UK), Volvo pointed out that running high percentage biodiesel blends could cause trucks to fail the relatively modest NOx limits in Euro-4 regulations (far more lenient than U.S. NOx limits). "Under EU proposals for future 'in use' – i.e. roadside – checks on NOx and particulate matter compliance, based on 'never exceed' principles, the legality of B30-plus biodiesel blends would be jeopardized," the report said. "Additionally, the high NOx level produced by some high-blend biodiesels could trip the NOx sensor on newer trucks, causing the torque limiter to kick in."

What's more, the variable quality of biodiesel could cause problems with exhaust aftertreatment. "Fuel derived from palm oil, for instance, could cause rapid sooting-up of [diesel particulate] filters," and also could distort oil change intervals, the report said. As a result, "Volvo would like to see a more demanding international FAME [fatty acid methyl ester biodiesel] fuel standard," the report said.