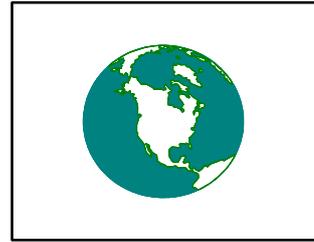


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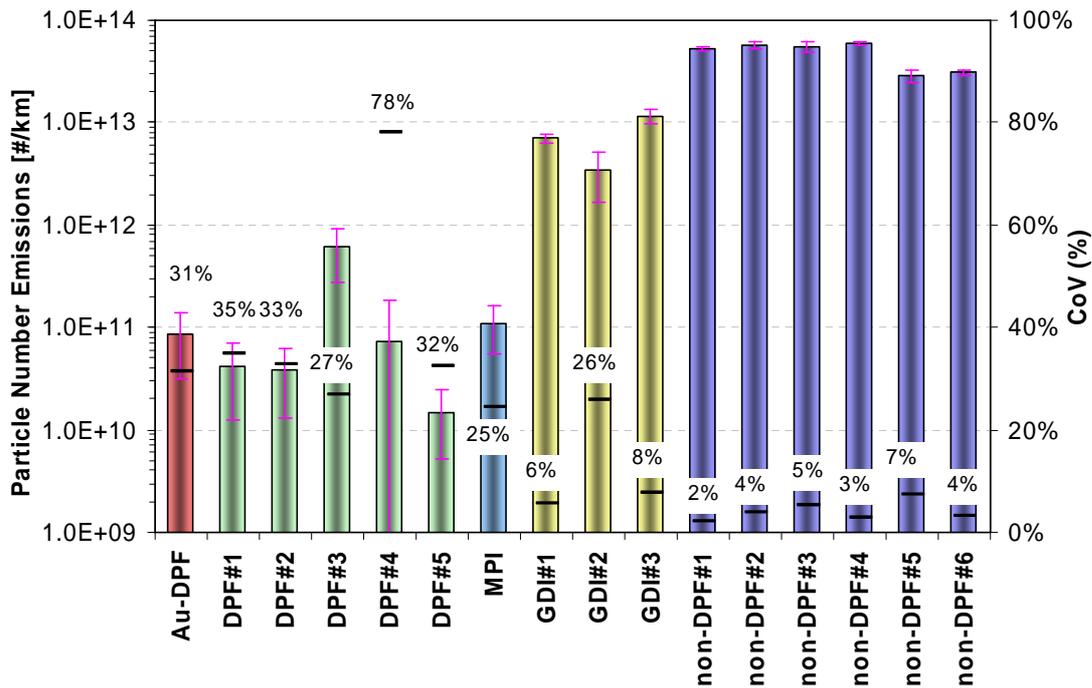


# CAR LINES

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Particle Number Emissions and Repeatability Data – All Vehicles



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# EUROPE

## 1. PMP Light-Duty Inter-Laboratory Correlation Study Completed

The European Particle Measurement Program (PMP) has published the "Light-duty Inter-laboratory Correlation Exercise Final Report" which summarizes the results and findings from Phase 3 of the study.

The PMP program, conducted under the auspices of the UNECE WP29/GRPE group, was started in 2001 to develop and recommend PM measurement methods to be used for EU type approval testing and development of future emission standards for light- and heavy-duty vehicles. In its Phase 1 and 2, the program recommended two systems:

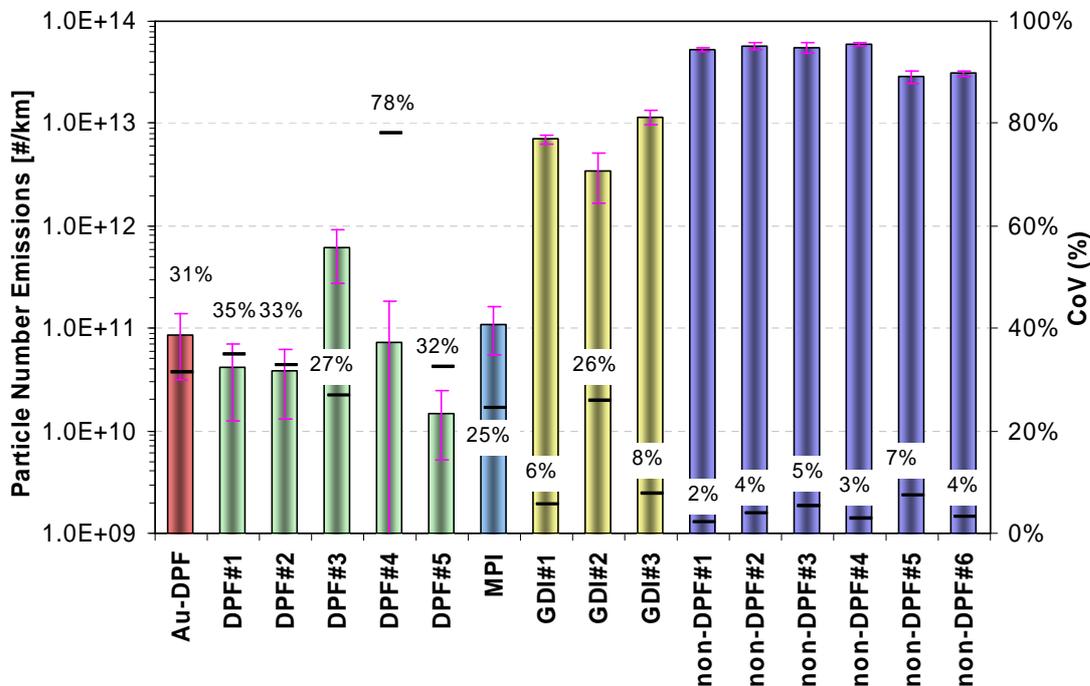
- - For PM mass measurement, a modified filter method similar to that currently used in Europe, but incorporating changes broadly based on the US 2007 emission certification testing procedure.
- - For particle number measurement, a new method using a condensation particle counter (CPC), a selected size range (23 nm - 2.5 µm), and sample pre-conditioning at 300°C in an evaporation tube. The procedure has been designed to count solid particles only, and to eliminate volatile particles.

The Light Duty Inter-Laboratory Correlation Exercise has conducted testing at 9 test laboratories in the EU, Korea and Japan in order to demonstrate the repeatability and reproducibility of the PMP methods. The exercise involved testing 16 light-duty vehicles including 6 diesels equipped with wall-flow diesel particulate filters, 6 conventional diesel vehicles, 3 direct injection (DI) gasoline vehicles and one conventional, multi-point injection gasoline vehicle. A Golden Vehicle -- DPF equipped Peugeot 407 -- was tested at all participating laboratories to allow the inter-laboratory reproducibility of measurements to be assessed. Vehicles were tested over multiple repeats of the NEDC transient test cycle. Measurements of solid particle number emissions, particulate mass and regulated gaseous emissions were taken over each test. In addition to particle number measurements made with a Golden System circulated between laboratories (Matter Engineering rotating diluter, evaporation tube and ejector diluter plus a TSI Condensation Particle Counter), particle number measurements were made with several alternative systems to compare the performance of different measurement systems.

Key findings of the study included:

- Mean particle number emissions were less than  $2 \times 10^{11}$  particles/km for DPF equipped diesels (including light goods vehicles). Repeatability was typically around 30%. The one major deviation of 78% was due to the DPF being in an unstabilized fill state resulting in emissions from the vehicle decreasing test after test as the DPF filled up and its filtration efficiency progressively increased. Subsequent to testing of this vehicle a DPF stabilization protocol was adopted. One DPF equipped diesel (Toyota Avensis D-CAT) gave higher mean results of around  $6 \times 10^{11}$  particles/km. This vehicle differed from the other DPF equipped vehicles in being fitted with a more porous substrate (designed for coating with a NOx adsorber catalyst). The particle emissions trace from this vehicle showed solid particle emission levels following the drive cycle (as they do for a conventional diesel vehicle) unlike the trace for a more efficient DPF where solid particle emissions are practically eliminated except for during the cold start and final acceleration of the NEDC cycle.

## Particle Number Emissions and Repeatability Data – All Vehicles



- Conventional diesel vehicles gave particle number emissions of around  $5 \times 10^{13}$  particles/km, i.e. more than two orders of magnitude higher than the DPF equipped vehicles. Mean particle number emissions from DI gasoline vehicles were in the range  $3 \times 10^{12}$  to  $1 \times 10^{13}$  particles/km. The conventional, multi-point injection gasoline vehicle tested gave particle number emissions similar to the DPF equipped diesels.
- Particulate mass proved incapable of distinguishing between high and low porosity substrates on DPF equipped diesels or identifying changes in DPF fill state. This shows that particulate mass is fundamentally insensitive as a measurement of post DPF particle emissions, concluded the authors.
- Background PM mass measurements from the dilution tunnel at one lab gave a mean result equivalent to 0.441 mg/km across the test cycle with a standard deviation of 0.096 mg/km. This is actually higher than the total particulate mass measurement for DPF vehicles at many labs, suggesting that the measurement cannot be easily distinguished from background contributions. Background measurements of particle number were equivalent to  $2 \times 10^8$  particles/km across the test cycle, with a standard deviation of  $7 \times 10^7$  particles/km. This is around 55 times lower than the lowest vehicle test result indicating that, unlike particulate mass, particle number measurement is able to discriminate between vehicle emissions and background levels. For these reasons particle number measurement is considered by the authors superior to PM mass for assessing the particle emissions performance of DPF equipped diesel vehicles.

The PMP measurement methods for both PM mass and numbers have been included in the recently adopted Euro 5/6 emission legislation. For passenger cars, the mass based Euro 5/6 PM limit is 3 mg/km, and the number based limit is  $5 \times 10^{11}$  particles/km.

## **2. Push To Weaken EU Air Quality Law Continues**

Rapporteur MEP Holger Kraemer has resumed a drive to relax key elements of the EU directive on ambient air quality. In draft amendments for the European parliament's second reading he has retabled several changes already rejected. Some amendments have been modified to tempt the council of ministers into compromise. Mr. Kraemer says he is "strongly committed" to reaching agreement with governments by the end of the year. The parliament's environment committee will discuss his proposals in early September.

Uncharacteristically, the parliament adopted an environmentally weaker position than that taken by ministers at the first reading, a move criticized by environmentalists and the European commission. Their main complaint was that MEPs wanted to extend by three years the period of time authorities would be able to delay the deadline for meeting particulate matter (PM10) concentration limits.

Mr. Kraemer now says he would be happy with a two-year deadline extension, but still wants the extra flexibility applied also to meeting new limits on fine particulate matter (PM2.5). Authorities would have to show they had taken "all appropriate measures" to cut pollution before being granted the extra time, he stresses.

The rapporteur also wants to weaken slightly a requirement for authorities to reduce the average exposure of populations to PM2.5 by changing the formula used to calculate national targets. But he wants to tighten the eventual limit value on fine particulates from 25 to 20 micrograms per cubic meter (ug/m3) by 2015.

Under Mr. Kraemer's plan the range of places where concentration limits do not apply would be broadened. These include industrial installations where there is no public access, and areas where the public is "not directly or indirectly exposed for a significant period". Because air quality is not measured in these places, enforcing the limits here would be "likely to give rise to endless lawsuits," he says.

The requirement for authorities to draw up short-term plans in response to pollution incidents would be softened and explicit references to the possibility of limiting motor traffic and industrial activity in these plans removed. The law's transposition deadline would be brought forward one year, but this would not affect compliance deadlines.

## **3. EU Commission Finds Austrian Trucking Limit Violates European Union Law**

On July 23<sup>rd</sup>, the European Commission told the western Austrian federal state of Tyrol to rescind a ban on vehicles carrying certain goods on some roads because the ban is incompatible with European Union law. Tyrol had sought to ban trucks carrying some goods, particularly waste and construction materials, from a section of the A12 highway near Austria's border with Germany. However, the Commission said in a statement that such a "sectoral ban" would conflict with EU rules on free movement of goods.

EU Transport Commissioner Jacques Barrot said that although the Commission welcomed initiatives to meet air pollution goals, the Tyrolean measure was "disproportionate" and would have only a "limited effect on air quality."

EU member states are required to tell the Commission if they decide to introduce transport laws that may conflict with EU common transport policy.

The Tyrolean selective ban was one of a package of measures--including passenger car speed limits and bans on old or polluting trucks--designed to improve air quality. The Commission said "several of the proposed measures will indeed have a positive effect on the environment" and are in line with EU legislation. However, the European Court of Justice in 2005 found a ban similar to Tyrol's proposed sectoral ban to be in breach of the EU Treaty.

In calling for Austria to drop the measure, the Commission said it was acting "in line with the Court's jurisprudence."

The Commission may open legal proceedings against member states if it judges they are in breach of EU law.

#### **4. Alpine Regions To Exceed EU Air Quality Limits**

EU targets for reducing the concentration of nitrogen oxides, particulates and ozone in air by 2010 are "unlikely to be attained" in Europe's alpine regions, according to the transport and mobility chapter of the first "Report on the state of the Alps". Drawn up under the 1991 Alpine convention, the report concludes that new measures to reduce emissions from road traffic, particularly freight, are "inevitable". The European commission recently challenged controls proposed by Austria on heavy goods vehicles using certain alpine routes (see above).

#### **5. Germany Adopts Strategy For 40% Emission Cut**

The German government has adopted a national strategy aimed at cutting greenhouse gas emissions by 40 per cent against 1990 levels by 2020 and improving energy efficiency by three per cent annually.

The strategy was first announced by Chancellor Angela Merkel last month. It was formally approved by her cabinet during a recent retreat.

While many industry sectors will remain exempt from energy taxes, the strategy says that by 2013, these sectors must prove that they are using energy efficiently to maintain the exemption. Meanwhile, Germany's airline and shipping industries are to be included in the EU emissions trading scheme.

In terms of transport, the strategy echoes the European commission's goal that average CO2 emissions of new cars from 2012 should reach 130 grams per kilometer compared with 164g now. An emission-weighted car tax plan will be introduced.

Other measures include a requirement that by 2020, the share of biofuels in the transport sector must equal 20%. Motorway tolls on heavy lorries are to be linked more closely to their emissions.

The strategy envisages renewable energy accounting for 25-30 per cent of electricity production by 2020 against 13% now. Support for combined heat and power (CHP) will be increased to E750m annually. Support for green renovation of old buildings will also be continued at the current level of E700m per annum until 2011. For new buildings, 15% of their heating will have to come from renewable sources.

## **6. North Sea Low-Sulfur Shipping Zone Enters Force**

An EU limit of 1.5 per cent sulfur content in marine fuels used by vessels plying the North Sea has entered into force. The restriction was agreed in 2005 in defiance of industry pleas to agree uniform worldwide restrictions through the International maritime organization (IMO). A similar limit for the Baltic Sea was introduced a year ago.



The measure was agreed in a bid to cut air pollution from the shipping sector, whose share of the overall pollution load has been rising as emissions from land-based sources have fallen. The Dutch transport ministry said recently that a study by research institute TNO showed the new limit would cut sulfur oxide emissions by 40 per cent and particulate emissions by 10 per cent.

Meanwhile EU environment commissioner Stavros Dimas has repeated warnings that the EU will take similar unilateral action to cut carbon dioxide from shipping in its waters if global action does not materialize quickly enough through the IMO. The comments came in an answer to a written question from Greek MEP Georgios Papastamkos, according to shipping news service Lloyd's List. Last month the IMO's environment committee began investigating CO2 abatement options.

## **7. Dutch Climate Emissions Fall Again In 2006**

Greenhouse gas emissions in the Netherlands fell for the second year running in 2006 to three per cent below 1990 levels, according to preliminary figures issued by the Dutch environmental assessment agency (MNP) and bureau for economic policy analysis (CPB). This brought the Netherlands to within three percentage points of its -6 per cent Kyoto target for 2008-12. Total emissions were 208m tons of carbon dioxide equivalent. Most of the decrease came from a reduction in CO2 emissions because of lower electricity production. Transport CO2 increased.

## **8. Verheugen Offers His View on Large Cars in CO2 Debate**

A proposed EU limit on carbon dioxide emissions from new cars of 130 grams per kilometer by 2012 must be differentiated among car manufacturers, the EU's industry commissioner Gunter Verheugen has said. "The limit value cannot be the same for each car [model]," Mr. Verheugen told the German newspaper Bild am Sonntag. He said his aim was to avoid car models being taken off the market as a result of the planned legislation.

The makers of larger cars will have to achieve the "greatest progress", the commissioner said. But the reduction potential in all classes will have to be fully exploited, "including for smaller cars".

Mr. Verheugen's words suggest that larger cars will be allowed to exceed the 130g/km target because smaller cars will be required to exceed it in such a way that, overall, EU new car fleet

emissions would reach it when averaged together. This would automatically mean that firms making bigger cars, such as BMW and Audi, would not be rigidly bound by the 130g/km target.

Various media reports have suggested the European commission had decided to apportion emissions targets based on vehicle weight. But Mr. Verheugen said that "reports on a preliminary decision are wrong". He said the commission had considered 46 different models for the legislation, and was now examining eight options in greater detail.

The European car industry recently called for the target to be differentiated according to vehicle weight, but environmental groups argue that the calculation should be based on a car's "footprint".

Mr. Verheugen added that manufacturers should not be able to "buy their way out of their environmental responsibilities". It is unclear whether this would rule out an industry-wide "banking-and-trading" system in which manufacturers that exceed a target for one model could sell the credit to others struggling to meet the carbon limit.

### **9. Union State's Diesel Automobile Engineering Program May Continue Past 2009**

Belarusian and Russian automakers and engine producers may continue implementing the Union State Program for Diesel Automobile Production Development past 2009, according to Mikhail Shalimo, head of the representative office of Central Company BelRusAvto in Belarus. He noted, the possibility had not been discussed thoroughly by concerned ministries and agencies of Belarus and Russia. However, both the sides are interested in continuing the joint work after tasks of the ongoing program are accomplished in 2009. The new Union program will be aimed at expanding the production of Euro-4 vehicles as well as designing diesel engines and trucks compliant with ecological standards Euro-5. The Union State budget is expected to fund research and development of this program.

Mikhail Shalimo said proposals to work out the next program for advancing diesel automobile production had already been voiced by MPs of Belarus and Russia as well as the Permanent Committee of the Union State. The topic had also been discussed at a meeting of Belarus President Alexander Lukashenko with Secretary of State of the Union State Pavel Borodin in Minsk in June 2007. The Belarusian government has been tasked with working on the project. However, the Union government will have to take the official decision to put together the concept of the new program.

At present Belarusian and Russian automakers and engine producers are working on a program aimed at starting up the batch production of Euro-3 diesel engines and getting ready for starting up the production of Euro-4 vehicles. As from January 1, 2008, the batch production of automobiles fitted with Euro-3 engines will start. By January 1, 2010 the batch production of Euro-4 vehicles should be prepared.

"Euro-4 is not the limit today," said the official. "We cannot stop, we should look into the future and continue developing diesel automobile production. Ecological standard Euro-5 should ensure the production of competitive trucks. The Union Program will be continued with this purpose in mind".

The Union State's first program for developing diesel automobile engineering was in effect in 1998-2002 and allowed uniting efforts of the two countries in order to stabilize the operation of

the automobile industry. Facilities were set up and the production of vehicles and engines compliant with Euro-1 and later Euro-2 norms was started. Advances were made to reach norms outlined by the Euro-3 standard. The manufacturers paid out all the loans taken out to accomplish projects to the Union State budget.

The Union State's second program for developing diesel automobile engineering was launched in 2008, with initial plans to end it in 2008. Later on the Union's Cabinet prolonged the program's implementation by a year. The move was attributed to the requirement to launch the production of Euro-4 engines and vehicles starting from January 1, 2010 according to the Special Technical Regulations "Requirements for exhausts of automobiles produced in the Russian Federation, for harmful (polluting) substances". Research and development for the introduction of Euro-4 standard is supposed to end in 2008. Hence, the companies will step up efforts to build up the capacity for manufacturing the new machines in 2009. Therefore, the decision was taken for the program's effective period to coincide with the Special Regulations'. The funding volume will not be changed, but the time for assimilating the funds will be shorter. It is important to ensure constant control over the progress in fulfilling the program up to the time the program is completed, stressed Mikhail Shalimo.

This year the Union budget allocates RUR82.2 million for research and development of Belarusian companies and RUR194.5 million for Russian companies.

In 2005-2009 the program's funding will come from the companies involved (40%), the Union State budget (3%) and as loans of commercial companies. The total volume of investments the program requires stands at RUR35 billion. Projects of Russian companies cost RUR24.1 billion, Belarusian ones — RUR10.9 billion.

Central Company BelRusAvto acts as the chief developer and executor of the program as well as the coordinating link. The company is headquartered in Moscow. The representative office of the company has been working in Belarus since 2004.

Major participants of the program on the Belarusian side are Minsk Automobile Plant, Minsk Engine Plant, Minsk Wheeled Tractors Plant, Russian side — OAO Avtodizel (Yaroslavl Engine Plant), Yaroslavl-based diesel and fuel equipment plants, Tutaev Engine Plant, KamAZ and other companies.

## 10. PKN Orlen's Lithuanian Unit To Produce Cleaner Petrol



Mazeikiu Nafta, the 89.8%-owned Lithuanian subsidiary of Polish oil major PKN Orlen, has built a new, LTL135 million FCC gasoline hydro-treatment unit, which will enable the company to reduce the sulfur content in its gasoline five-fold. The new unit will allow gasoline to be desulfurized up to the level that will be required and applicable by the EU from 2009, which states that the sulfur content of the petrol should not be more than 10 parts per million (ppm).

The standards currently applicable in the EU are a target of not more than 50 ppm sulfur in fuel. However, stricter requirements are already being enforced by some countries, the company said.

"The important thing is that modern technologies will allow reductions in pollution and grant the possibility of our products becoming even more competitive in Lithuanian and foreign markets," said Marek Mroczkowski, general director of Mazeikiu Nafta. "We are pursuing the aim of becoming one of the most modern and advanced refineries in the region. The new unit marks the beginning of modernization, as the amount of investment in Mazeikiu Nafta within the coming five years will amount to \$1.6 billion," Mr. Mroczkowski continued.

Mazeikiu Nafta produces all grades of gasoline, jet, diesel fuel and other petroleum products. Gasoline components from the new FCC gasoline hydro-treatment unit will be used for the production of gasoline 95 and 98.

### **11. Budapest Drivers Could Face Congestion Charge By 2010**

Road tolls are likely to be introduced in Budapest by 2010 or 2012 as part of a program adopted last year that aims to reduce air pollution in the city, reports radio.hu. According to the plan, two types of tolls will be imposed: one is a fee to enter downtown Pest from the Danube River crossings, from Margaret Bridge south to Petöfi Bridge; the second would charge for transit in the zone encircled by Hungária Boulevard (Hungária körút) and Grand Boulevard (Nagykörút).

Motorists entering the toll zone would pay Ft 1,000, and a Ft 500 toll would be charged for bridge crossings.

Surveys show that with the imposition of tolls, the ratio of car usage in downtown areas could drop by 40 percent and the annual income from toll collection could be Ft 7 billion (€28.5 million), which is exactly the same amount of money that public transport operator BKV loses each year.

Budapest city hall said the tolls will only be imposed once the M0 ring road and Metro 4 line are finished, and the "Heart of Budapest" program is realized, which would create more pedestrian zones in downtown Budapest.

### **12. French Prime Minister Unveils Plan to Tax Pan-European Trucking Firms**

France plans to assess a new tax on all trucks using French roads for pan-European merchandise transport, Prime Minister Francois Fillon said on July 3<sup>rd</sup>. The new environmental tax on road transporters was announced during Fillon's first wide-ranging general policy speech before Parliament, which revolved principally around legislative plans to implement President Nicolas Sarkozy's vision for the next five years.

Fillon reiterated the government's plan to quickly push a major tax reform bill--covering the inheritance tax, personal income tax, and wealth tax regimes, as well as changes to tax treatment of overtime hours--through Parliament. The "fiscal shock" is slated to enter parliamentary debate July 10, and should be implemented by early fall, government officials have said.

Fillon also reiterated Sarkozy's pledge to overhaul environmental taxation, starting with the proposed European trucking registration tax. The planned "transport registration sticker" (euro-vignette) would compensate France for the various "nuisances, risks, and costs to infrastructure" caused by trucks using French roads for pan-European merchandise transport,

Fillon said. The European Commission has given France its approval for the transit tax measure, which will shortly enter an experimental phase in the eastern Alsace region, Fillon said.

Beyond the transit tax, Fillon told MPs that "environmental taxation should become more prevalent in our law." Fillon said that future environmental tax reforms "should go further," notably suggesting that France may "consider the question of taxing products in the marketplace based on their carbon content."

### **13. Switzerland to Impose CO<sub>2</sub> Tax After Missing Emissions Reduction Target**

On June 28<sup>th</sup>, the Swiss government announced that it will impose a new tax on certain fossil fuels starting in 2008 after reporting that the country failed to achieve its target for reducing greenhouse gas emissions last year. The Swiss Federal Office for the Environment (FOEN) said the tax will be levied at a rate of 12 Swiss francs (\$9.80) per metric ton of emissions starting on January 1. The tax will be levied on all imports of heating oil and natural gas--but not gasoline--at the equivalent of 3 centimes (2.5 cents) per liter of heating oil and 2.5 centimes per cubic meter of natural gas.

FOEN said the decision was made by the government after learning that Swiss carbon emissions declined by only 4.6 percent in 2006 from 1990 levels. Under pressure from the Swiss Parliament, the government agreed in March to adopt the tax in 2008 if Switzerland failed to meet its target for reducing greenhouse gas emissions by 6 percent in 2006. Results for 2006 were made available in June.

The agency also said that companies that enter into binding agreements to reduce their energy consumption can claim back the tax paid on fuel they consume.

Imports of motor vehicle fuel will be exempted from the tax, at least initially. The Swiss government has endorsed an industry-backed voluntary scheme called the "climate cent" initiative, under which a 1.5-centime-per-liter charge is collected on gasoline and diesel fuel imported into Switzerland. However, the government has reserved the right to review the situation and impose an obligatory tax if the voluntary charge does not produce satisfactory results by the end of 2007.

Under the agreement reached last March, the 12 francs per ton carbon tax will jump to 24 francs per ton--or 6 centimes per liter of heating oil--at the start of 2009 if Swiss carbon emissions do not decline by 10 percent in 2007 compared with the 1990 level. The tax will be hiked once again to 36 francs per ton of emissions, or 9 centimes per liter of heating oil, at the start of 2010 if Swiss emissions do not decline by 13.5 percent in 2008 compared with 1990 emissions or if the decline is less than 14.5 percent in one of the following years.

The tax is being described as an "incentive charge," with all revenues collected eventually being redistributed back to Swiss residents through the country's national social security system.

Companies that wish to be exempted from the carbon tax must submit a plan to FOEN no later than September 1<sup>st</sup> outlining how they plan to reduce their carbon emissions. This plan is to be drawn up in cooperation with Switzerland's Energy Agency. Some 600 companies have already committed to voluntary plans to reduce their carbon emissions. These companies will have until September 1 to request that these plans be converted into binding agreements in order to be

exempted from the tax.

Under the Kyoto Protocol, Switzerland agreed to reduce its carbon emission by 8 percent, to 48.25 million tons, by the period 2008-2012. The Swiss government, however, had adopted a more stringent target requiring a cut of 10 percent from 1990 emissions by 2010.

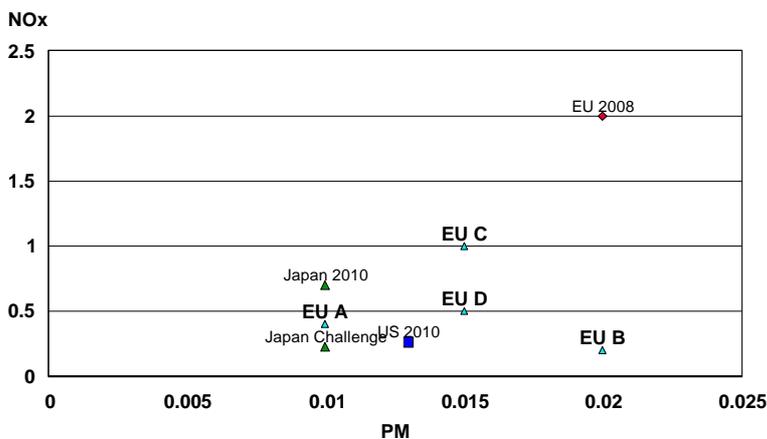
In a joint statement issued June 29, more than 40 nongovernmental organizations called on the Swiss government to extend the new carbon tax to gasoline and diesel fuel, arguing that the voluntary "climate cent" initiative was not effective in reducing greenhouse gas emissions. The statement argues that the reductions in carbon emissions claimed by supporters of the initiative were mainly being achieved through the purchase of carbon permits on the international market, and that consumption of gasoline and diesel fuel in Switzerland was actually increasing.

#### 14. New Euro-VI Heavy-Duty Diesel Proposal Open For Comment

The European Commission has unveiled four options for Euro-VI emissions limits on heavy-duty highway vehicles. The scenarios are summarized below:

- "Limit values in scenario A are considered to be equivalent to the future U.S. standards. Compliance with the emission limits of this scenario would require a higher rate of cooled exhaust gas recirculation (EGR) (in addition to the use of a more efficient selective catalytic reduction (SCR) system)." The higher rate of cooled EGR would lead to a higher fuel consumption according to the Commission and hence to higher CO2 emissions in the range of 2%.
- "Scenario D could also be considered, to a certain extent, as equivalent to the U.S. standards. Higher fuel consumption with higher CO2 emissions is not foreseen in this case."

### Scenarios Under Consideration For Euro VI (g/kWh)



of fuel consumption/CO2."

- "Scenario B is stricter than scenario A in terms of NOx for diesel engines but less stringent in terms of PM. This scenario requires a rate of cooled EGR that is considerably higher than that of scenario A. In order to achieve such a high ratio of EGR, scenario B requires an improved cooling system. As a result, higher fuel consumption and thus higher CO2 emissions of around 5% to 6% are anticipated."

- "Finally, scenario C is the least stringent in terms of NOx emissions; no negative impact is anticipated in terms

Leaving aside the differences in test procedures, the Figure illustrates the relationship between the four scenarios and the Euro V, Japanese and US requirements.

"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," EU industry commissioner Gunter Verheugen said.

The commission says it plans to table draft legislation by the end of the year, but it is not clear when the new Euro VI standards would enter force. Euro IV standards have applied since last year, and Euro V standards will apply from 2009.

In two of the four scenarios, meeting the tighter air pollutant limits would lead to higher carbon dioxide emissions. The commission wants stakeholders to say whether they are prepared to pay the extra carbon cost to bring down emissions of the other pollutants.

One possible set of limits is considered to be equivalent to future standards in the United States. Meeting these would require a higher rate of cooled exhaust gas recirculation (EGR) and more efficient selective catalytic reduction (SCR). The extra cost per vehicle could range from E3355 to E5566 depending on engine size. A similar scenario with a tougher NO<sub>x</sub> limit but more lenient PM limit would cost between E3753 and E5980. Both would increase CO<sub>2</sub> emissions by between two and six per cent.

The new standards have been under development for over two years. The commission also raises the possibility of delaying the Euro VI proposals for several months to enable it to table an even tighter round of standards - Euro VII - at the same time. Earlier this year competitiveness ministers called for the Euro VI standards to be proposed by December

## **15. Frankfurt Diesel Conference Focuses on Euro VI**

A number of OEM speakers at the Diesel Emissions Conference, including Rudolf Ellenson (Iveco) and Ritske van der Meer (DAF Trucks), championed a two-stage approach to Euro VI, allowing them to achieve the anticipated 0.3/0.4 g/kWh (ETC) NO<sub>x</sub> limit in two steps by 2014/15. However, this is not yet a unified position within ACEA, with at least MAN favoring a single step approach.

Proponents of a two-stage Euro VI directive argue that further (post-Euro V) emissions reduction can happen earlier. Phase one of the proposed scheme would see a 50% reduction of NO<sub>x</sub> to 1.0 g/kWh and the final PM target by 2011/12. The two-stage solution would also delay the final implementation of the legislation, allowing OEMs more time to develop their engines and potentially reduce fuel economy penalties.

European OEMs present at the conference anticipated that the Commission would set a limit of 0.3 or 0.4 g/kWh (ETC) for NO<sub>x</sub> and 0.01 g/kWh (ETC) for PM. This represents an 85% reduction in NO<sub>x</sub> when compared to Euro V, the most severe reduction to date! Limits set this low will require advances in engine technology and a significant amount of aftertreatment, resulting in the convergence of diesel emissions technologies: EGR combined with SCR and DPF. OEMs have a number of concerns with potential Euro VI platforms, chiefly the high EGR rate which will require increases in injection pressures, turbo-charging and cooling capacity.

It is anticipated that the Euro VI engine platform will use an SCR system operating at 80% efficiency. Therefore, to achieve 0.4 g/kWh NOx at the tailpipe, engine-out emissions will have to be 2.0 g/kWh NOx. To lower tailpipe NOx emissions to 0.3 g/kWh, engine-out emissions will have to be 1.5 g/kWh. These low engine-out emissions will be achieved with a high-rate EGR system, requiring injection pressures greater than 2200bar and high boost pressures provided by a two-stage or VG turbo-charger. An additional problem incurred by the use of high-rate EGR is the additional cooling capacity required and the need for a downstream DPF to clean up increased PM. Rudolf Ellensohn (Iveco), General Manager – Powertrain Development, said that “for a 9l 300kW engine with heavy EGR, it will be necessary to increase cooling capacity by 30%, using low temperature circuits and EGR specific intercoolers”. All this technology combined in a single package will carry a significant cost premium and fuel penalty, offsetting gains from incentive schemes - potentially repeating the post-2007 US CV market downturn in Europe.

## **16. Over Fifty Cities In Spain Exceed Air Pollution Limits**

Fifty Spanish cities exceed government guidelines for air pollution, a study shows. Madrid, Barcelona, Valencia and Seville are the worst offenders on the list compiled by the environmental ministry. Only Palma de Mallorca, San Sebastian, Badajoz and Cartagena are within legal limits, the Spanish daily El Pais reported.

The survey showed 89 percent of Spanish cities with more than 100,000 inhabitants exceed the legal pollution limits. More than 17 million people are affected. But the ministry says the number could be higher.

The reasons are complicated but one of the chief culprits is the car - each household owns one vehicle and of those about 55 percent are diesels.

Some 16,000 people die each year from diseases related to pollution, according to a European Commission study.

## **17. Spain Confirms Tax Hike for High Emission Cars**

Spain will raise the registration tax for the most polluting cars from January 2008 and cut or eliminate taxes for the cleanest vehicles, the Environment Minister has announced. From next year, cars which produce less than 120 grams of carbon dioxide (CO2) per km will be exempt from the registration tax, while those that emit more than 200 grams per km will pay 14.75 percent. The latter includes most large sports utility vehicles.

There are two intermediate bands of 4.75 percent and 9.75 percent tax for cars of 120-160 grams per km and 160-200 grams. Buyers of new cars currently pay between 7 and 12 percent registration tax, depending on engine size.

The minister did not mention any move to increase annual road tax for heavily polluting vehicles, something that the government has talked of in the past.

The tax change is part of a bigger package of measures to reduce Spain's energy consumption and curb its emissions of greenhouse gases.

The carmakers' association Anfac said it welcomed the measures because it would mean lower taxes for most cars sold in the country. Of the 1.63 million new cars sold last year, 8.5 percent were in the highest emission category and 27.8 percent in the intermediate 160-200 gram bracket.

#### **18. Milan to Impose "Pollution Charge" on Cars**

Milan will impose a "pollution charge" on vehicles entering its historic centre to try to halve exhaust emissions, the mayor's office said on its Web site. The 10-euro (US\$14) daily charge will be aimed at the 89,000 vehicles which enter the centre during weekday daytime hours.

"Today we have approved an important measure for the protection of the environment and citizens' health," Mayor Letizia Moratti said.

The charge was approved by city council leaders and will be carried out on a trial basis for a year. *Corriere della Sera* newspaper quoted Moratti as saying the measures could start later this year.

#### **19. Swedes Commit To Congestion Charge In Capital**

Stockholm has adopted a permanent congestion charge more than a year after the end of a six-month trial and despite opposition from a number of districts surrounding the capital. An analysis by the Swedish transport institute (Sika) found the use of public transport rose sharply during the trial. The charge will apply to taxis and disabled transport services and will be tax-deductible for some companies and commuters.

#### **20. Dutch Study Plots Cost Of Cleaner Ship Fuel**

A ban on using heavy fuel oil to power ships would lead to costs of up to E2bn in the Dutch oil refining sector, according to a study by the Dutch energy research centre (ECN). The study was presented at a meeting of the marine environment protection committee (MEPC) of the International maritime organization (IMO).

The idea of banning heavy fuel oil was put forward by tanker association Intertanko last autumn as a way of meeting a potential cap of 0.5 per cent on the sulfur content of marine fuels.

The Dutch transport and water ministry asked ECN to investigate the economic impact of the idea. It has concluded that switching the Dutch refinery sector's entire production of heavy fuel oil to lighter alternatives would cost E1.5-2bn. The conversion would have to be gradual to avoid market distortions and price peaks, it said.

The national environmental assessment agency (MNP) is separately investigating the environmental effect of a ban. Results are due in August.

On the agenda at the MEPC are air pollution, ship recycling and ballast water management. Carbon market analyst Point Carbon reported that Norway had proposed requiring ship owners to offset greenhouse gas emissions by buying Kyoto protocol flexible mechanism credits.

#### **21. Porsche Hybrid to Cut Cayenne Fuel Usage a Third**

Porsche AG aims to cut the average fuel consumption of its Cayenne sport utility vehicle by nearly a third when it rolls out a hybrid version at the end of 2009, the company has announced. Porsche wants the Cayenne hybrid to require just 8.9 liters of petrol per 100 kilometers, compared with the 12.9 liters its conventional Cayenne guzzles.

Europe's automotive industry is facing ever more stringent carbon dioxide (CO<sub>2</sub>) guidelines from regulators eager to curb greenhouse gas emissions.

The European Commission plans new rules by mid-2008 to reduce CO<sub>2</sub> emissions from new passenger cars to an average 130 grams of CO<sub>2</sub> per km by 2012 through improved engine technology. By comparison, Cayennes now emit as much as 320 to 378 grams per km depending on the model, according to data from German automotive market researcher DAT.

Porsche is working with Volkswagen AG and Audi AG to develop hybrid powertrains that capture energy from braking. A battery then drives an electric motor alongside a petrol engine. The so-called parallel-full hybrid lets the vehicle drive on electric power alone at speeds up to 120 km per hour, with the combustion engine first taking over at higher speeds.

Porsche said it would offer a hybrid version of its planned fourth model, the four-door Panamera coupe, but it does not plan to do so for either its Boxster/Cayman model line or its 911 sports cars.

## **22. VW And Toyota Vie For "Greenest Car" Title**

Toyota and Volkswagen models have emerged as the leading contenders for the title of "greenest car" after two new ranking systems were released. The UK government and What Car? magazine launched their "best on CO<sub>2</sub>" ranking, putting Volkswagen's diesel Blue Motion Polo in pole position with emissions of 99 grams per kilometer. But the Swiss government has published a draft ranking of 6,000 cars, using slightly different criteria, which names Toyota's Prius hybrid as the greenest car.

### **A. UK Government Launches CO<sub>2</sub> Car Rankings Site**

The Department of Transport has launched a Web site designed to let new car buyers choose the most environmentally friendly vehicle for their needs. The "Best on CO<sub>2</sub>" site uses a ranking system devised with What Car? magazine.

The site allows buyers to search models by category, transmission and fuel type and to be given a list of the lowest CO<sub>2</sub> emitting models. "By choosing the car with the most fuel efficient engine in its class, drivers could reduce their engine CO<sub>2</sub> emissions by 24 percent and potentially save a quarter on fuel costs," said Transport Minister Jim Fitzpatrick.

The rankings were developed using emissions data from the Vehicle Certification Agency, the body responsible for conducting official tests on CO<sub>2</sub> emissions.

The 14 car categories were developed by What Car? magazine, based partly on groupings used by the motor industry to classify cars and partly on reader research about perceptions of the

market. They are: Supermini, Small family, Family, Estate, MPV, Compact Executive, Executive, Coupe, Open-top, Hot hatch, Compact 4x4, Large 4x4, Luxury and Performance Car.

#### B. Swiss Name Toyota's Prius The World's Greenest Car

Switzerland, renowned for its clean Alpine air and pristine ski slopes, has named Toyota's Prius the world's greenest car. The Swiss government gave the Prius the highest green rating in a draft study evaluating the environmental impact of driving around 6,000 different cars, including carbon dioxide (CO<sub>2</sub>) emissions which contribute to global warming.

The Swiss government said it hopes that the list -- which is still in draft form and could be revised before it is finalized next year -- will persuade drivers to buy cars which have the lowest impact on the environment. The list could also be used to impose an emissions-related tax on cars.

"The goal is to modernize the fleet of cars and to make the use of natural resources as efficient as possible, so that using cars will exert less pressure on the environment," said Adrian Aeschlimann, a spokesman for the Federal Office for the Environment.

Toyota's Japanese rival Nissan saw its Patrol GR 3.0 get the lowest rating.

The Prius -- a hybrid car twinning battery power and a combustion engine -- was launched in 1997 by Toyota, the world's biggest car maker. It is the best-selling hybrid car on the road, although hybrids account for only a fraction of global car sales.

Switzerland's NZZ am Sonntag newspaper published the names of the top 20 and bottom 20 cars this week. Fiat's Punto 1.2 Bipower and its Panda 1.2 Bipower, the Daihatsu Cuore and Citroen's C3 1.4i GNV were all in the top 5 of the draft list, which will be sent to the industry for comments before being finalized.

Ford's Transit and Transit 4x4, the VW T5 and Peugeot's Boxer were in the bottom 5.

Small cars and other hybrid vehicles dominated the top 20 of the list.

#### **23. German Car Firms "Opt For CO<sub>2</sub> Aircon Substitute"**

German carmakers look likely to adopt carbon dioxide as the standard refrigerant in vehicle air conditioning systems, following the EU's move to phase out the chemical refrigerant HFC-134a from 2011. The Alliance for CO<sub>2</sub> solutions said that they had received confirmation of the decision from "industry insiders".

In press reports the German automotive industry association (VDA) was quoted as saying it has not yet taken a final decision to adopt CO<sub>2</sub> as the new standard. But it confirmed that its manufacturers have ceased all developments involving alternative chemical refrigerants, following disappointing test results.

In June the association of European carmakers said that it was likely that only one replacement refrigerant would be chosen as the new industry-wide standard. The VDA's decision, if confirmed, suggests that CO<sub>2</sub> is now the leading contender to replace HFC-134a.

A spokesman for the Alliance for CO2 solutions said that the news was a positive step. He added that German carmakers had acted before the industry as a whole in order to give themselves more time to comply with the 2011 phase-out.

#### **24. Physiotherapists Urge Action On Vehicle Emissions**

Physiotherapists are calling for immediate action to tackle high levels of toxicity and pollution caused by traffic on a number of UK roads. A government study of sites across the UK revealed that air quality is poor in many areas, with the highest level of toxic PM10 found on Marylebone Road in London.

The Chartered Society of Physiotherapy (CSP) is marking Green Transport Week by urging the government and local authorities to enforce PM10 pollution reduction across the UK using available technologies.

PM10 is a pollutant that is generally emitted by diesel engines and the World Health Organization (WHO) claims that there is no known safe limit for exposure to the toxin. Exposure to PM10 has been linked to asthma, premature deaths and other breathing difficulties.

The professional body claims that respiratory physiotherapists are concerned about the health risks associated with PM10 and are calling for Low Emission Zones similar to the one created in the capital by the Mayor of London.

CSP spokesperson, Professor Grahame Pope, said: "The technology exists to reduce PM10 emissions from diesel engines - but is the political will there to enforce its use? For the sake of our health and our children's health we cannot afford to go on ignoring this problem."

Government readings of 45 micrograms of PM10 per cubic meter of air (mcg/m<sup>3</sup>) were recently taken on Marylebone Road, with average readings in Camden, Glasgow, and London's A3 of 36 mcg/m<sup>3</sup>.

## **NORTH AMERICA**

#### **25. Air Board Cracks Down On Diesel**

California's diesel-powered bulldozers, scrapers and other heavy construction equipment must be retrofitted or replaced over the next 13 years state regulators have decided. Under the new rules adopted by the Air Resources Board, California is the first state to make construction companies fix existing diesel-powered machines. Heavy equipment can last 30 years or more, so without the new mandate, it would take decades for fleets to upgrade to cleaner equipment.

20% of California's diesel pollution comes from the construction industry. The air board's new rules will slash diesel soot from construction equipment by 92% over 2000 levels. Smog-forming nitrogen oxides will be cut by more than a third. And greenhouse gases, a byproduct of fuel burning, also will drop as a result of a ban on idling equipment.

"This is a very progressive rule with a lot of flexibility," said board Chairwoman Mary Nichols. "Beginning in 2010, we will be breathing far less of the smog and fine particulates that are so damaging to our health."

The building industry hotly contested the rule, saying it would cause job losses, increase highway construction costs and damage the state's economy. Michael Lewis, a lobbyist for the industry-led Coalition to Build a Cleaner California, said industry could not afford the retrofits. "And a regulation that is not achievable will not save one life," he said.

The diesel rule, the result of three years of debate, drew applause from environmental groups.

The rule, which air board staff says will cost the industry up to \$3.4 billion, is one of the most expensive adopted by the board. As part of an aggressive diesel cleanup, the board has also adopted restrictions on garbage trucks, buses and ships. Next on the agenda: heavy-duty trucks, which could cost even more to clean up than construction equipment.

The building industry operates 180,000 pieces of diesel machinery statewide. It costs up to \$40,000 to buy particulate filters for a single million-dollar scraper. Overall, contractors contended, the cost of the rules could reach \$13 billion and boost the price of homes, highways and commercial buildings.

The discrepancy in the estimates of the cost to industry caused the board to delay action in May to allow staff to evaluate new economic data. In the last two months, air board economists and individual board members held dozens of meetings with industry groups and examined the financial records of companies. Industry figures were based on an exaggerated rate of equipment turnover, among other factors, staffers told the board.

On a vote of 6 to 3, with Nichols leading the opposition, the board defeated an effort by industry groups to extend the compliance schedule. It maintained annual reduction targets for soot, rather than moving enforcement to a three-year schedule, which staff said could cut health benefits by as much as 12%.

In addition to an overall state standard, the board adopted a provision that will allow Los Angeles and nearby counties, the San Joaquin Valley and other particularly polluted regions to accelerate the diesel equipment cleanup schedule in their districts.

"It's a good day for clean air," said Barry Wallerstein, executive officer of the South Coast Air Quality Management District. Wallerstein said the region must achieve twice the amount of construction pollution cuts as the overall state goal in order to meet federal standards. The region, one of the dirtiest in the country, is under a strict mandate to improve its air by 2015. The AQMD will offer construction companies \$120 million in incentives to purchase particulate filters or buy new machines.

To soften the economic hardship on mom-and-pop businesses, the new rule gives small fleets until 2015 to begin compliance, while large fleets must begin in 2010.

## **26. New CARB Chief Vows To Pursue More Vehicle, Climate Change Rules**

The California air board will seek more "early action" measures under the landmark global warming law AB 32, tougher mobile source rules sought by southern California officials and

more controls under a disputed Central Valley air plan, the board's new chairwoman told lawmakers. While environmentalists and lawmakers appear satisfied with the air quality chief's vision, she provided few details about what specific new regulations the board will pursue.

Scrutiny of Mary Nichols, the newest California Air Resources Board chair, is expected to continue over the next several months as the board begins implementing landmark climate change regulations and approving controversial local air district plans.

On July 17<sup>th</sup>, Nichols appeared before the Senate Rules Committee for a unique "preliminary" appointment confirmation hearing. Nichols, appointed July 3 by Gov. Arnold Schwarzenegger, is expected to be confirmed next year. Nichols replaces former CARB Chairman Robert Sawyer, who was fired in June by Schwarzenegger.

At the July 17 hearing, Nichols said she has already asked CARB staff to consider adding more "early action" measures to the list of three already adopted by CARB under AB 32. Environmentalists and lawmakers have been critical of the board for not adopting more than the three measures. The three early action measures adopted in June include a low-carbon fuel standard, a restriction on the sale of "do-it-yourself" automotive refrigerants for air conditioning systems, and increased methane capture from landfills.

Nichols said at this week's committee hearing that while the three measures are a "start," she has asked staff to see if there are measures that may be moved up on the early action list quickly, before the end of the year. "I want to expand the list of measures committed to have in place and underway by 2010, because I agree the public does want to see action, and inevitably the question is, is this enough?"

An environmentalist said measures that could be moved up into early action priority include a long list already proposed by CARB staff for later implementation dates. These measures include specifications for commercial refrigeration, better manure management on dairies to prevent methane emissions, and "cool" automobile paints to reduce air conditioning use in cars, thus boosting fuel efficiency. "Those have already been thoroughly researched, so moving them to [immediate adoption] is just a timing issue, and with the administration's new-found motivation for quicker reductions, the will should lead to the way," the environmentalist said. Environmentalists also believe a rule requiring cement plants to improve energy efficiency is also a "great" early action measure to be elevated by Nichols.

Nichols also said at the hearing that she believes CARB should do more to control emissions from mobile sources, particularly pollution from diesel trucks seen as the biggest thorn in the side of San Joaquin Valley and Los Angeles-area regulators' efforts to meet federal air quality standards on time.

CARB and the South Coast air district have long wrestled over whether CARB should be more aggressive in its statewide mobile source strategy, with the district and board officials currently debating whether it should or can be strengthened. South Coast went as far as to create its own mobile source division earlier this year, which drafted more stringent statewide vehicle rules than CARB is pursuing, and included these in its own air quality plan. This was a controversial move because the district has no authority to adopt or enforce statewide emission rules for vehicles, meaning the rules it included in its plan are seen more as an overt criticism of how CARB is handling mobile source regulation.

Nichols said at the legislative hearing she is highly concerned about the past high level of antipathy and disagreement with Barry Wallerstein, the executive officer of the South Coast air district. Nichols vowed to improve relations between the agencies and to improve upon CARB's mobile source strategy. "I have been speaking to friends in the South Coast, including Barry Wallerstein about some specific measures I think we can take to try to get the relationship back on track, and to get moving on some of the assistance they need," Nichols told lawmakers. South Coast "does not have all the tools they need, and they need help from CARB to provide mobile source regulations that are more aggressive than done in the past, and we have to step up to the plate and find ways to help them out," Nichols said.

Nichols added that while CARB's decision to approve an 11-year delay in attaining federal air quality standards in the San Joaquin Valley was legally correct under the Clean Air Act, she does not believe it is acceptable. Schwarzenegger publicly blasted CARB for approving the delay and administration and CARB officials recently met with environmentalists to discuss whether adding more control measures to the district's plan is feasible.

Nichols added that she wants to send a message to the valley air district board that "business as usual" is not acceptable. "I had been asked whether [CARB] would consider not approving or submitting the San Joaquin Valley plan as a way of forcing the issue and keeping heat on [the valley district] to move faster, and I have not made a decision to ask the board to do that, but I'm willing to look at ways we can make sure people are keeping their eye on the ball."

## **27. US EPA Proposes Tighter Ambient Ozone Standards**

The US Environmental protection Agency (EPA) proposed to strengthen the National Ambient Air Quality Standards for ground-level ozone but left the door open for retaining the current levels. EPA's proposal would revise both ozone standards: the primary standard, designed to protect human health; and the secondary standard, designed to protect welfare (such as vegetation and crops). The existing primary and secondary standards, set in 1997, are identical: an 8-hour standard of 0.08 ppm.

EPA proposes to set the primary (health) standard to a level within the range of 0.070-0.075 ppm. For the secondary standard, EPA is proposing two options:

- One option is to establish a new form of standard designed specifically to protect sensitive plants from damage caused by repeated ozone exposure throughout the growing season. This cumulative standard would add daily ozone concentrations across a three-month period. EPA is proposing to set the level of the cumulative standard within the range of 7 to 21 ppm-hours.
- The other option would follow the current practice of making the secondary standard identical to the proposed primary 8-hour standard.

EPA also requested comment on retaining the current standard leaving open the possibility to do so.

## **28. EPA Science Assessment Links Exposure To NO<sub>2</sub> Dioxide With Illness, Death**

A draft scientific assessment released by the Environmental Protection Agency on August 31<sup>st</sup> links exposure to nitrogen dioxide with death and illness such as respiratory disease. The

strongest new epidemiological evidence shows an association between ambient air concentrations of nitrogen dioxide and increased visits to hospital emergency rooms and hospital admissions for respiratory illness, especially asthma and chronic obstructive pulmonary disease, according to the assessment, Integrated Science Assessment for Oxides of Nitrogen--Health Criteria.

The US has consistently lagged behind the EU and California in recognizing the adverse health impacts from NO<sub>2</sub> exposure. It has ignored the need for a "short term" exposure standard unlike not only the EU and California but also recommended by the WHO.

"Additionally, evidence is suggestive of potentially permanent decreased lung function capacity and increased mortality," the draft assessment said.

"Taken together, recent studies provide strong scientific evidence that NO<sub>2</sub> is associated with a range of respiratory effects and describe a likely causal relationship between short-term NO<sub>2</sub> exposure and adverse effects on the respiratory system."

EPA compiled the draft assessment as the first step in deciding whether to revise the air quality standard for nitrogen dioxide, which is 0.053 part per million, measured as an annual average. It is intended to provide the relevant scientific data to help EPA make its decision.

The document is the first external review draft assessment. The agency will take comments on the draft until Oct. 31 and issue later drafts before deciding whether to revise the standard.

Nitrogen dioxide is emitted from power plants, motor vehicles, and other sources of fossil fuel combustion.

The Clean Air Act requires EPA to re-evaluate national ambient air quality standards for six key air pollutants every five years. The pollutants are ozone, particulate matter, carbon monoxide, nitrogen dioxide, sulfur dioxide, and lead.

EPA review of the nitrogen dioxide standard is six years overdue. EPA last reviewed the standard in 1996, when it opted to retain the existing standard. That decision was based on a 1993 assessment called the air quality criteria document. The 1993 criteria document found that nitrogen dioxide exacerbates asthma and caused increased respiratory illness in children.

Since 1993, "the epidemiological evidence has grown substantially, including new field or panel studies on respiratory health outcomes, numerous time-series epidemiological studies of effects such as hospital admissions, and a substantial number of studies evaluating mortality risk with short-term NO<sub>2</sub> exposures," it said.

The nitrogen dioxide review is the first using EPA's revised process for reviewing air quality standards. The integrated assessment replaces the much more extensive criteria document and focuses on data that are relevant to policymakers, according to EPA. The changes were adopted in 2006 to heighten the role of agency management in deciding whether to revise a standard.

EPA's Clean Air Scientific Advisory Committee will review the draft assessment at a public meeting later in the year, according to EPA. The agency will issue a second draft in 2008 addressing comments by CASAC and the public on the first draft. After a third draft is complete, EPA will use it to decide whether to revise the standard.

## **29. Ninth Circuit Court Issues Fleet Rules Decision**

On August 20th, the Ninth Circuit Court of Appeals issued a decision in the so-called fleet rules case. In a decision that could set a precedent for local governments across the United States, trash haulers, school and city bus lines and other publicly funded fleets in Southern California can be required to buy low-polluting vehicles fueled by natural gas or other alternative fuels, the U.S. 9th Circuit Court of Appeals ruled.

The fleet rules were adopted by the South Coast Air Quality Management District (AQMD) to control the purchase of vehicles for private and public fleets. This week's decision remanded the case back to the lower court, but upheld the district court's ruling that the fleet rules as applied to state and local governments are not preempted by the federal Clean Air Act due to market participation considerations.

The Court's decision, to a large extent, maintains the status quo by ruling that the fleet rules can be applied to local and state governments based on the assertion that the AQMD is acting on behalf of the state as a market participant. The AQMD has only been enforcing the rules as they relate to purchases of fleet vehicles made by, or on or behalf of, state and local government entities since the Supreme Court issued a decision on the rules in 2004.

But private and federal fleets such as Federal Express and the U.S. Postal Service might not be covered under such rules, because the federal Clean Air Act might trump local regulation. The appeals court sent that portion of the case back to district court to decide separately.

An estimated 6,000 new vehicles, mostly powered by compressed natural gas, have been purchased by agencies in the region since the rules were put in place. Old school buses and other diesel vehicles are among the dirtiest on area roads, contributing to both diesel soot and smog. Purchasing new, alternative-technology vehicles might initially be more costly than buying diesel equipment, but it saves lives and costs over the long run, regulators said.

Petroleum and engine manufacturing groups noted the battle isn't over, and added that diesel technologies are becoming equally clean.

## **30. US Vehicle Carbon Emissions Drop**

Climate-warming carbon emissions from new cars and light trucks in the US fell by 3 per cent in 2005, the first decrease in nearly 20 years, a new report from Environmental Defense has found.<sup>1</sup> High fuel prices and tighter fuel efficiency standards for light trucks had helped lower carbon emissions, the report said. Growth in the amount of driving averaged 2.3 per cent a year from 1990 to 2004, but was less than 0.2 per cent in 2005.

Carbon dioxide emissions from US vehicles, which grew by 2 per cent a year from 1990 to 2004, grew by less than 0.4 per cent in 2005. This included all of the approximately 200 million cars and light trucks in use on US roads.

The report also measured the so-called carbon burden of the 12 US vehicle manufacturers, which was billed as a way to measure their effect on global warming. The carbon burden was

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<sup>1</sup> "Automaker's Corporate Carbon Burdens: Update for 1990-2005"

calculated by looking at how efficient vehicles are, how carbon-rich their fuel is and how many new vehicles companies sell.

The six largest manufacturers had the biggest carbon burdens. The carbon burdens of General Motors and Ford declined from 1990 to 2005, a consequence of shrinking market share, the report said. General Motors said it expected to have eight hybrid vehicles on the market by the end of the year.

### **31. Regional Climate Pact Sets Limit**

The leaders of six states and two Canadian provinces have agreed to cut emissions to 15% below 2005 levels. Stepping in where the Bush administration has refused to tread, California Gov. Arnold Schwarzenegger and five other Western governors, joined by two Canadian provincial leaders, pledged to enforce a tough regional cap on greenhouse gas emissions.

Under the Western Climate Initiative, the leaders agreed to slash emissions of carbon dioxide and other climate-warming pollutants to 15% below 2005 levels in their states and provinces in the next 13 years. Overall, the region would cut emissions by 350-million metric tons over that time period.

To achieve their goal, the partners, including Democratic and Republican governors, committed to designing a carbon-trading system within a year. That approach, now in use in Europe, allows industries to trade pollution credits among themselves. Seven Northeastern and mid-Atlantic states are also designing a so-called cap-and-trade system, but that initiative will be limited to power plants.

"Climate change is a global problem that requires a global solution," Schwarzenegger said in announcing the accord. "Our collective commitment will build a successful regional system to be linked with other efforts across the nation and eventually the world."

California officials took pointed aim at the Bush administration's refusal to enact a national program to cut greenhouse gas emissions. "The federal government needs to step up to the plate, but the states aren't waiting," said Linda Adams, California's secretary for Environmental Protection. "Ideally, we would have a cap at the federal level."

Although the Bush administration has rejected the Kyoto Protocol, a global climate pact ratified by more than 140 countries, White House spokeswoman Dana Perino said that the charges of federal inaction are "false" and that Bush is "supportive of actions by the states and respects the role governors play." The administration, she said, has supported billions of dollars in incentives for clean-burning technology and building retrofitting, a legislative proposal to cut the nation's traditional gas use by 20% over the next decade, as well as an effort to slow the growth of greenhouse emissions nationwide.

But in contrast to the administration's embrace of voluntary emissions targets, Schwarzenegger has traveled the West in recent months, cajoling other political leaders to join in a commitment to fixed cuts. The states that have signed up are Arizona, California, New Mexico, Oregon, Washington and Utah. Canadian provinces British Columbia and Manitoba have also joined the effort. Several states and provinces are official "observers," still considering whether to commit to the initiative's stringent goals. They include: Colorado; Kansas; Nevada; Wyoming; Ontario and Quebec, Canada; and Sonora, Mexico.

One goal of the regional pact is to prevent polluting industries from playing off states with stiff anti-pollution regulations against those without. In recent years, for instance, Nevada has advertised itself as a haven for businesses fleeing California.

"It is a big concern in California that companies might move to other states," Adams said. "This kind of regional program will help minimize that."

Environmental groups applauded the regional initiative. "It shows major momentum in the fight against global warming," said Theo Spencer of the Natural Resources Defense Council. "The public has grown impatient with the Bush administration's denying and ducking. There's a wave of state action moving from coast to coast."

Under the initiative, the partner states have signed up with a national climate registry to measure how much greenhouse gas they emit. They are free to design how to cut their own emissions to meet the cap. To slash fossil-fuel consumption, which produces climate-warming carbon dioxide, states are mandating more energy-efficient buildings, increased use of solar and wind energy, less sprawl and more hybrid cars in government fleets.

But given that vehicle tailpipe emissions account for between one-quarter and one-third of states' CO2 emissions, it could be hard to meet the regional initiative's ambitious cap without also requiring auto companies to produce less-polluting cars. California passed a landmark law in 2002, which mandated a 30% reduction in greenhouse gas emissions in automobiles by 2020.

Eleven other states have signed on to California's approach, but with the auto industry fiercely opposed, the Bush administration has delayed granting a necessary federal waiver to allow the law to take effect. Most observers expect the Administration to eventually deny the waiver request.

### **32. Bush Calls Meeting on Global Warming for September**

US President George W. Bush unveiled plans for global warming talks next month that will bring together the world's biggest polluters to seek agreement on reducing greenhouse gases. Under pressure for tougher action against climate change, Bush invited the European Union, the United Nations and 11 industrial and developing countries to the Sept. 27-28 meeting in Washington to work toward setting a long-term goal by 2008 to cut emissions. Bush was following through on his pledge in late May to convene a series of conferences with economic powers responsible for producing most of the greenhouse gases blamed for global warming.

The United States is the world's top emitter of greenhouse gases and the only G8 country outside Kyoto, the UN-sponsored plan for cutting greenhouse gases.

"In recent years, science has deepened our understanding of climate change and opened new possibilities for confronting it," Bush said in his invitation letter. He insisted the United States "is committed to collaborating with other major economies" on a new global framework for curbing greenhouse gas emissions.

But a senior US official said the administration stood by its opposition to mandatory economy-wide caps. Many climate experts say that without binding US targets, the chance for significant progress is limited.

Bush agreed with leaders at a Group of Eight summit in June to make "substantial" but unspecified reductions in greenhouse emissions and to negotiate a new global climate pact that would broaden the Kyoto Protocol beyond its 2012 expiration. But Bush has refused to sign up to numerical targets, insisting it would hurt US business as long as fast-growing countries like India and China remained exempt.

China and India are invited to the conference, together with Japan, Canada, Brazil, South Korea, Mexico, Russia, Australia, Indonesia and South Africa. The EU will include representatives from France, Germany, Italy and Britain. Secretary of State Condoleezza Rice will host the meeting, and US officials are confident all invitees will attend.

The talks, where the Bush administration will control the agenda, will take place three days after a UN summit on climate change in New York in which US policy on global warming may come under sharp criticism. The White House said the US meeting was meant to supplement, not upstage, ongoing international initiatives.

Bush said he would address the conference, the first in a proposed series of meetings where he wants delegates to discuss ways to reach agreement by the end of 2008 on a long-term global goal to reduce greenhouse gas emissions. Bush's position on climate change has evolved from questioning the science linking human activity to global warming in 2001 to agreeing to work to curb the problem. But Bush blocked German-led efforts at the G8 summit to secure agreement on 50 percent cuts from 1990 levels by 2050. He agreed, however, to fold his own plans into the UN framework.

Bush is likely to be out of office by the time any post-Kyoto deal is clinched.

### **33. Province to Implement California-Style Standards**

On August 10<sup>th</sup>, Prince Edward Island Environment, Energy, and Forestry Minister George Webster announced the adoption of tougher emissions standards for vehicles to reduce air pollution and greenhouse gases that contribute to climate change. The province's new standards will be similar to those first introduced in California and will reduce tailpipe emissions from new vehicles by about 25 percent from current levels, Webster said in a statement. The new standards are expected to reduce emissions by 53,000 metric tons per year by 2017, the equivalent of taking 10,000 cars off the road, he said. "That is going to protect public health because the air we breathe will be cleaner," he said. "And because vehicles will be more fuel efficient, the other benefit is that Island drivers will save an estimated C\$25 million [\$24 million] a year in reduced gasoline costs by 2017."

### **34. Ontario Launches Programs to Capture Methane, Reduce Auto Emissions**

Ontario Environment Minister Laurel Broten has introduced a series of programs intended to reduce the province's emissions of greenhouse gases, including a regulatory change to require the capture of methane from landfills and three initiatives intended to reduce emissions from vehicles.

On August 8<sup>th</sup>, Broten announced jointly with Transportation Minister Donna Cansfield and Energy Minister Dwight Duncan three initiatives to encourage commuters and businesses to reduce their greenhouse gas emissions. The government will undertake consultations with vehicle manufacturers and environmental groups to develop a "green" vehicle program that will rate cars, light trucks, and commercial vehicles based on environmental criteria, Broten said in a statement. The consultations will identify incentives to promote the purchase of more environmentally friendly vehicles, which will be recognized with an "Eco-License" plate that will be introduced in the summer of 2008, she said.

The province also will invest C\$15 million (\$14 million) over the next four years on a program to encourage businesses to convert to more environmentally friendly technologies, including hybrid power, she said. And the government will promote greater use of cleaner fuels in its own vehicle fleet by installing two additional ethanol fueling facilities, which also could be made available to other users, such as municipal vehicle fleets, she said.

On August 9<sup>th</sup>, Broten 9 released for public comment proposed amendments to regulations under the Environmental Protection Act that would make it mandatory for new, expanding, and existing landfills larger than 1.5 million cubic meters to install methane-capture systems.

The regulatory change is part of the provincial government's overall plan to reduce greenhouse gas emissions by 6 percent by 2014 compared to 1990 levels, 15 percent by 2020, and 80 percent by 2050, she said.

### **35. Leaders of Canada, Mexico, U.S. Pledge Cooperation on Fuel Economy, Climate**

On August 21<sup>st</sup>, President Bush and the leaders of Canada and Mexico issued a joint statement pledging to work together on a wide range of energy and environmental issues. In particular, the three North American leaders said they will ask their administrations "to explore ways to cooperate on national auto fuel efficiency standards." "We support an integrated approach to climate change, energy security and economic development, and support the development and deployment of clean energy technologies," the joint statement said.

Bush met with Canadian Prime Minister Stephen Harper and Mexican President Felipe Calderon for two days of talks at a North American leaders' summit in Montebello, Québec. Although they pledged cooperation on contentious issues such as climate change and fuel economy, there were no specifics.



### **36. Railroad Taking Steps To Reduce Emissions**

The Maine Eastern Railroad has told city and state officials it will take more steps to cut down exhaust emissions from diesel locomotives at its train station in Rockland. People living near the station have been complaining that diesel fumes are causing health problems.

The city council met with neighbors, railroad officials, the Maine DOT and the Department of Environmental Protection. City manager Tom Hall says there was progress at the meeting; the railroad said it will start using ultra low-sulfur diesel fuel in October. The DEP says switching fuels will reduce pollution and make it easier to take other steps.

"For instance, last night they were talking about switching to newer fuel injectors, which they would not have been able to do with the high sulfur fuel. So switching to better fuel injectors will improve combustion of the fuel, which will reduce all the different pollutants," said Lynne Cayling from the Maine DEP.

The city and the DEP are hoping to get both sides to agree on steps that can be taken.

### **37. Canada Concludes Used Crankcase Oils Not A Toxic Substance**

On August 4<sup>th</sup>, Environment Canada confirmed that it does not intend to designate used crankcase oils as a toxic substance under the Canadian Environmental Protection Act. New information on the leakage of oil from vehicle crankcases shows that it enters the environment in quantities or concentrations that pose an immediate or long-term risk to the environment or biological diversity, but provinces and territories have implemented risk management measures for used crankcase oils, the department said in a notice published in the August 4<sup>th</sup> issue of the Canada Gazette, Part I. The measures include prohibitions against land, landfill, and sewer disposal of used oils, permit and approval systems to control their burning, prohibitions or guidelines on their use for dust suppression, controls on oil reprocessing, and programs to collect and manage used oil, it said. "The Minister of the Environment and the Minister of Health propose that used crankcase oils not be added to Schedule I of the Canadian Environmental Protection Act at this time," it said.

### **38. Audi Announces Mid-2008 Launch of Tier-2, Bin-5 Compliant Diesels**

Audi has confirmed that it will be the "first manufacturer to meet future emissions limits" with what it calls the "cleanest diesel in the world" by mid-2008. Crucial to the rollout is the inclusion of urea-selective catalytic reduction (SCR) technology for ultra-low nitrogen oxides (NOx) limits, which will require development of a urea tank refilling infrastructure.

The new diesel engine will give drivers up to 35% better fuel economy versus a comparable gasoline engine, Audi said.

"Audi will be marketing these new models in the USA and in Europe from the second half of 2008," the company revealed.

"Just as the entire Audi range complied with the Euro 4 standard and the forthcoming Euro 5 emissions limits years in advance, the [German] brand is once again set to assume its role as the pioneer of groundbreaking technology," the company said. "We intend to consolidate the status of the TDI as a highly efficient form of propulsion on a sustained basis. And in future we will be launching 'e' model variants designed for optimized fuel consumption in the high-volume model series – either in TDI guise or as petrol models with state-of-the-art TFSI technology," said Rupert Stadler, Chairman of the AUDI AG Board of Management.

Audi brags that it has built more than 4.5 million diesel cars since 1989 utilizing TDI technology, and boasts that it has captured that last two LeMans 24-hour races with the diesel R10.

"Thanks to the optimized combustion process and the inclusion of an ultra-low emission system, these models comply with the [U.S. EPA] Bin-5 emissions requirements in the U.S. as well as meeting the toughest standards expected to come into force in Europe for the foreseeable future," it added.

"Audi is kicking off its consistent TDI strategy for 2008 with the three-liter V6 units in the Audi A4 and Audi Q7. Developing 176 kW (240 bhp) and a supreme peak torque of 500 Nm in the Audi A4 and 550 Nm in the Audi Q7, they boast the sublime dynamism combined with relatively low fuel consumption that is the hallmark of any Audi. Additional models will follow in rapid succession, with Audi seeking to extend the new technology to other vehicle classes and power categories by 2010."

The latest TDI engines include new piezoelectric common-rail fuel injection (at 2,000 bar), exhaust gas recirculation (EGR) and optimized turbocharging.

"One of the highlights are the combustion chamber sensors that enable even more precise regulation of the combustion processes in the engine – this is the first time that such sensors have been fitted on any engine in the world, marking yet another Audi innovation," the company said.

As for the SCR system, this scheme will cut NOx emissions by 90%, Audi says. "Tiny doses of this [AdBlue urea] solution are injected upstream from the DeNOx catalytic converter. The ultra-low emission system as a whole comprises the catalytic converter, the metering module, the AdBlue tank and heated lines, as well as an extensive system of sensors. The comprehensive emission control system is rounded off by the separate two-way catalytic converter and the highly efficient, electronically controlled diesel particulate filter."

### **39. GM Plans Diesel Passenger Cars in US by 2010 - Paper**

General Motors Corp. plans to offer diesel-engine cars under the Cadillac and Saturn brands in the United States by 2010, Automotive News has reported, citing a source familiar with the plan.

In a video blog on the company's website, GM Vice Chairman Bob Lutz confirmed the top US automaker would use clean diesel engines in passenger cars, sport utility vehicles and other light-duty trucks. He stressed, however, that emissions hardware and control systems needed to meet the standards would add another US\$2,000 to \$2,800 to the US\$1,000-\$2,000 premium that already exists for diesels over gasoline-engine cars.

GM would be joining diesel front-runners such as DaimlerChrysler AG and Volkswagen AG, as well as Japan's Nissan Motor Co. and Honda Motor Co. in promising diesel cars compliant with the US Tier 2 bin 5 emissions standards.

Toyota Motor Corp. has yet to join the growing list, saying clean diesels would end up being more expensive than gasoline-electric hybrids, a segment it dominates.

Company sources say GM will show a diesel engine at the Frankfurt auto show in September on an e-flex Opel Vectra, Automotive News said on its website. In GM's e-flex powertrain, a traditional engine recharges a battery pack that provides power for an electric motor.

GM will show the same variant at the Detroit auto show in January on a Saturn, most likely the Aura sedan, the industry journal said. The diesel engine will power the Opel Vectra in Europe in 2008, and the next-generation Aura in the United States if all goes as planned, it said.

### **40. Ford Sees Plug-In Hybrids in 5 to 10 Years**

Ford Motor Co expects to sell plug-in hybrids in the next five to 10 years, according to the automaker's Chief Executive Alan Mulally. "Within five to ten years we will start to see this technology in our hands," Mulally said at an event to mark a partnership between Ford and Southern California Edison to explore the feasibility of the rechargeable electric vehicles.

When asked if that meant plug-in hybrids would be available on showroom floors, Mulally said yes. Mulally declined to give a more precise production target. "I can't go further than that," he said. "We will know a lot more in the next few years."

The remarks were the first time the No. 2 US automaker has offered a timeline for producing plug-in hybrid vehicles, which many environmental advocates see as the best available technology to reduce gas consumption and greenhouse gas emissions.

#### **41. Smoggiest City Paying Price For Others' Pollution**

America's smoggiest city has no smoke-belching factories, no rush-hour traffic, no suburbs and no freeways. Arvin -- a quiet farm community of more than 16,000 in the southeast corner of California's San Joaquin Valley -- is embedded in bucolic splendor. But Arvin has averaged 73 bad smog days each year since 2004. No other U.S. city even comes close.

Arvin is a smog dumping ground at the foot of the Sierra Nevada and Tehachapi mountains. Pollution from the 25,000-square-mile valley basin and beyond gets bottled up there. Plumes of pollutants ride prevailing breezes south over hundreds of miles to Arvin. The bad air comes from Bakersfield, Fresno, Stockton and even the San Francisco Bay Area.

The situation inflames city leaders, who say they've long been left out of the cleanup discussion. They're talking about legal action. "I was shocked when I found out about this," said City Manager Enrique Medina Ochoa. "This is not our problem."

Arvin is among the main reasons the San Joaquin Valley has violated the federal smog standard more than any other place in the nation during the last seven years.

The Arvin problem figures prominently in a cleanup plan adopted April 30 by the San Joaquin Valley Air Pollution Control District, said Executive Director Seyed Sadredin. But it might take 17 years to trim enough pollution from the rest of the valley to clear the air in Arvin. Activists and environmentalists, who have fought the new plan for months, are pushing for a faster cleanup, perhaps as early as 2015.

In Arvin, folks are adding their voices to the protest. City Councilwoman Raji Brar became an air district board member this year. Though no statistics are available on asthma rates in Arvin, Brar said she knows many residents who have lung problems. In her short time on the air board, Brar said, she doesn't sense any urgency about people who are suffering.

#### **42. San Joaquin Valley Voters Want Stronger State Action**

The Public Policy Institute of California (PPIC) has just released a major poll showing that Californians by large margins want immediate action on global warming and more done on air pollution, cited as the largest environmental problem the state faces. This is in accord with other

public opinion polls and the trend of where California residents and voters have been headed, especially in the last few years as to global warming.

But the PPIC also took a detailed look at the opinions in the San Joaquin Valley because of the important air quality issues in this subset of the Central Valley, and the results are clear. Even more so than the state as a whole, the San Joaquin Valley has a greater perception of air quality as a big problem, see it as a serious health threat, are less satisfied with their regional air quality district board and by a wide margin also support tougher air pollution standards on agriculture and farm activities--even if it made it more costly for these businesses to operate. The same is true for this areas support for tougher standards on commercial and industrial sources.

The PPIC "over sampled" the region and took the opinions of 1,001 adults so the margin of error is only plus or minus 3%. The PPIC has also divided the data into "North San Joaquin Valley" which includes Merced, San Joaquin, and Stanislaus counties, and "South San Joaquin Valley" which includes Kern, Kings, Fresno, Madera, and Tulare counties. These eight counties experience some of the worst air pollution in the country. On October 23, 2001, United States Environmental Protection Agency reclassified the San Joaquin Valley ozone nonattainment area from serious to severe. The region is susceptible to air pollution because of its physical geography, but also because of commercial and personal vehicle traffic, and agricultural and industrial activities, according to the PPIC,

Here are the numbers from the PPIC survey:

- While 25% of Californians say that air pollution is a "big problem" in their regions, in the San Joaquin Valley (SJV) that number is 56%, surpassing the Los Angeles and Inland Empire areas where the figure was 49% in each. Another 37% in the SJV say it is "somewhat of a problem," bringing the total that identify this as a problem to 84% of the region, as compared with 72% of the state as a whole. In the South SJV, the combined figure is 88% and it is 79% in the North sub region.
- 30% in the SJV say they are "very dissatisfied" with the air quality in their region (compared with 14% statewide) and another 25% are "somewhat dissatisfied," combining for 55% who are not satisfied. This surpasses Los Angeles (53%) and the Inland Empire (49%) as to dissatisfaction. The South SJV has by far the most "very dissatisfied" view with 38% of its residents in this category as opposed to 18% in the North.
- 35% of SJV adults say that air pollution is a "very serious" health threat to them and their immediate family compared with 25% in the state. The number rises to 42% in the South SJV and is the statewide average, 25% in the North SJV. All in all, 72% of the SJV views this as either a very serious or somewhat serious health threat, significantly higher than the statewide average of 59%.
- 52% of SJV residents report that they or a family member suffer from asthma or other respiratory problems (55% in the South and 48% in the North) versus 40% for the state as a whole.
- Where by a 50% to 42% margin, Californians think that air pollution is a more serious health threat in lower-income areas than other areas in their region, SJV residents feel the contrary by a margin of 57% to 36% and there are no

significant sub region differences in the SJV. This makes sense since in other areas of the state, especially coastal counties, it is possible to escape air pollution by living on the coast or closer to it than the inland areas, given prevailing wind conditions.

- Most Californians and SJV residents want the state government to have the primary responsibility to set air quality standards in their region. Around 70% statewide do not know enough to say if they approve or disapprove of what their regional air district is doing and the remaining 30% are essentially split. The same is true for the Northern SJV, but in the South another story is emerging. By 21% to 12%, they disapprove of the regional air district's actions.

In a region where agriculture and farming is by far the biggest industry, there is nonetheless strong support for tougher standards on agriculture. 50% of all SJV adults say they want this, even if it increases the cost for agriculture to operate, another 7% says yes, but only if it is not more costly, and 35% are not in favor. The statewide numbers are a point or two different, but well within the margin of error of this poll.

#### **43. ARB Staff Publishes ZEV Concept Paper in Preparation for Public Workshop**

In preparation for a public workshop, the staff of the California Air Resources Board (ARB) published a concept paper that further develops proposed changes to the California Zero Emission Vehicle (ZEV) regulations. In a public board meeting in May, the Air Resources Board considered a status report on the ZEV program. Members of an Expert Review Panel commissioned by ARB to examine ZEV technologies presented a summary of their report, and ARB staff made preliminary recommendations regarding the potential for modifying the ZEV program.

As an outcome of the May meeting, the Board instructed staff to examine possible changes to the regulation based on information provided by the Panel and from comments provided by the general public and affected stakeholders.

The new concept paper is a starting point for further discussions regarding possible amendments. ARB staff identified a number of goals for potential changes to the regulations:

- Maintain the pure ZEV requirement in order to achieve long term public health goals.
- Maintain requirements that accelerate ZEV technology development and deployment.
- Provide support for near-term ZEV demonstration projects.
- Take full advantage of technology options that are available today, to achieve air quality improvement and provide a bridge to ZEV commercialization.
- Provide manufacturers flexibility with respect to ZEV fuels, technologies, and compliance pathways.

The paper outlines 10 potential areas for modification. The ones that will likely generate the most discussion are the proposed reductions in the volume requirements and lengthening of the implementation times for fuel cell vehicles; putting full-function battery electric vehicles on a more equal footing with fuel cell vehicles; and devising additional incentives to foster the development of plug-in hybrid electric vehicles (PHEVs)—both blended and all-electric range (AER) models.

Following the meeting, ARB staff will develop its Initial Statement of Reasons for changes to regulations, which it will deliver to California's Office of Administrative Law on 9 October. The Board will hold a hearing on the specific changes 6-7 December 2007.

#### **44. Several States Considering California's Low-Carbon Fuels Standard**

An Illinois advisory group recommended to the governor last week that the state develop a Low-Carbon Fuels Standard (LCFS) patterned after the California LCFS plan, and sources following the issue say an increasing number of states are considering the California plan as a way to reduce vehicle fuel emissions without fuel taxes or state-specific emission laws.

Illinois, Michigan, and Colorado are actively examining an LCFS as part of broad state greenhouse gas reduction plans, although many of the discussions of the proposal are still in the early stages. Though they are starting with California's proposal, early discussions indicate that each effort may be tailored to each state's specific needs.

The Illinois advisory group's proposal -- which calls for a nearly identical program to California -- was approved by the panel last week and will be recommended to Gov. Rod Blagojevich (D) in a report this fall, which will also advocate a series of other emission-reducing measures.

Reportedly a source on the Illinois panel said few details of the policy have been outlined thus far, but notes that the members of the group are very interested in the California approach, and the Illinois version will likely "mirror the California proposal."

California Gov. Arnold Schwarzenegger (R) outlined the LCFS in a January executive order that directed state air regulators to develop the specific regulations. The policy was widely hailed by environmentalists, lawmakers and even some in the oil and auto industries as an approach that could help the state shift to lower-carbon fuels without mandating specific technologies or fuels.

The LCFS will require fuel providers to ensure that the mix of fuel they sell into the California market meets, on average, a declining standard for GHG emissions, beginning with a 10 percent reduction by 2020. The performance-based approach "does not dictate the mix of fuels," so that "fuel providers will have flexibility to choose what types of fuels they sell as long as their sales-weighted average meets the standard," says a Schwarzenegger administration white paper. The California proposal requires fuels be assessed on a life-cycle basis that includes all emissions from fuel consumption and production.

Illinois' LCFS proposal will have to be designed slightly differently than the California version because Illinois already uses E-10 (10 percent ethanol) in approximately 90 percent of all gasoline. Because ethanol lowers the carbon footprint of the fuel the baseline for carbon content must be set lower than in California. The existing ethanol blends may require the state to explore options such as mandating E-15 blends statewide -- an approach which could draw criticism from automakers who say most vehicles are not meant to handle more than a 10 percent ethanol blend. Another option is to greatly increase the use of E-85 in the state, which has a lot of room for growth, considering the state's large annual corn crop.

Other compliance options include mandating that all diesel fuel sold in the state contain a percentage of biodiesel, or powering ethanol refineries with electricity from wind or other renewables, which would reduce the life-cycle emissions. In the long-term the state can also

look to cellulosic ethanol, or coal-to-liquids with carbon sequestration, but those technologies are both a number of years away.

#### **45. US Environment Chief Draws Fire on California Waiver Delay**

The Bush administration's environment chief drew fire from Democratic senators for delaying a decision on whether to let California regulate global warming emissions from cars and light trucks. Stephen Johnson, head of the US Environmental Protection Agency, has said the government will decide this question by year's end, two years after California's first request to set state air quality standards stricter than national rules.

Sen. Barbara Boxer, a California Democrat who heads the Environment and Public Works Committee, told Johnson at a hearing she found the delay incomprehensible. "I fail to understand why it should take the agency until December, a total of two years, to decide this waiver request. In 30 years, EPA has granted over 50 waiver requests and has never denied one. ... Deciding this issue should not take so long," Boxer said.

Sen. Frank Lautenberg, a New Jersey Democrat, accused Johnson of "foot-dragging," and added, "The environment cannot wait any longer."

California, the most populous US state, has passed a law requiring that cars and light trucks cut climate-warming greenhouse gas emissions, primarily carbon dioxide, by 18 percent by 2020.

In December 2005, California asked EPA for permission -- known as a waiver -- to implement these state air quality requirements that are stricter than the national standard. If the waiver is granted, 12 other states that have passed similar requirements would be free to put those into practice, too.

In April, the US Supreme Court ruled that the EPA has the power to regulate greenhouse gas emissions that spur global warming, ordering the agency to reconsider its refusal to regulate carbon dioxide and other emissions from new cars and trucks that contribute to climate change.

Since then, the environmental agency has called for public comment on the California matter, and is conducting a "rigorous analysis" of the more than 60,000 comments it received, Johnson said. Boxer noted that some 54,000 of these comments were brief letters urging EPA to grant the waiver. Johnson countered that there were also hundreds of pages of technical data that had been submitted and that must be analyzed.

She also said at the hearing she was troubled by documents that indicate staff at the US Transportation Department "lobbied members of Congress and governors" to oppose the waiver. A Transportation Department spokesman confirmed these contacts had been made and said they were not unique. To Boxer, these moves were "unprecedented, unprincipled use of taxpayer dollars to tilt the scales of another agency's decision-making process, even before public comments were considered."

Besides California, the 12 other states that have approved the higher greenhouse gas emission standards are: Connecticut, Florida, Maine, Maryland, Massachusetts, New Jersey, New York, Oregon, Pennsylvania, Rhode Island, Vermont and Washington.

The Senate panel then passed a bill that would force the Environmental Protection Agency to rule by Sept. 30 on whether it would grant a waiver to California to regulate vehicle emissions.

The committee voted along party lines, approving the bill, S. 1785, by a 10-9 vote.

The full Senate, the House of Representatives and President George W. Bush still need to approve the bill.

Bush has directed the EPA to craft federal rules for greenhouse gas emissions from vehicles by the end of 2008, and Johnson said in June that that he is aiming to have draft rules for regulating the emissions by the end of the year. The EPA would rather have federal rules than a patchwork of state regulations.

Johnson said in June that regulating greenhouse gases from vehicles and recognizing carbon dioxide as a pollutant could have an impact on other emitters too, and said his agency is also studying the impact of vehicle greenhouse gas regulations on stationary sources such as power generators, refiners and chemical plants.

David Bookbinder, director of climate litigation at the environmental group the Sierra Club, said if the EPA decides that greenhouse gas emissions from cars endanger humans or the environment, then it will also have to publish the same standards for other emitters such as coal or gas generators and refiners.

Although the EPA has the authority to craft regulations requiring new sources to meet certain performance levels under the Clean Air Act, states would then be able to apply those performance standards retroactively for existing facilities.

The Sierra Club has a second case pending against the EPA in the District of Columbia's Court of Appeals that addresses greenhouse gases from all fossil fuel power plants in the country. The EPA, Bookbinder said, wants to delay the court's decision "because they do not want to be in the position to begin a rule-making process on this too."

#### **46. Senate Energy Bill Approves Stricter Fuel Economy Standards**

On June 21st, the Senate passed the energy bill (H.R. 6) by a Yea-Nea vote of 65-27, including a compromise to CAFE legislation that raises fuel-economy requirements for new light-duty vehicles fleetwide, demanding that they get 35 miles per gallon by 2020.

"This is a victory for the American public," said Senator Dianne Feinstein (D-CA), "it closes the S.U.V. loophole," alluding to the current standards which are less stringent for sport utility vehicles and pickup trucks than for cars.

The standards, which have not yet been approved by the House, had been challenged by the auto industry, which is now required to meet a standard of 27.5 miles per gallon for cars and 24 mpg for light-trucks.

The concession that made the agreement possible was the removal of a requirement that automakers meet an additional 4 percent annual increase in fuel economy for the decade after 2020. Automakers had been especially opposed to that provision as well as the decision to combine the car and light-duty vehicles/SUV fleets into one standard.

Conditions of the new “Ten-in-Ten” Act (10 mpg increase in fuel economy in 10 years) include:

- Increases fleetwide average fuel economy for all cars, SUVs, and trucks up to 10,000 lbs in weight by 10 miles per gallon from model years 2011 to 2020—from 25 to 35 miles per gallon by model year 2020.
- The rules will use attribute-based classes (such as size or weight) determined by the Department of Transportation’s National Highway and Transportation Safety Administration (NHTSA). Each class of vehicles—as determined by NHTSA—will be required to meet the new fuel economy standard for that particular class to achieve the fleetwide average of 35 miles per gallon by 2020. Each automaker will no longer be required to average the fuel economy for its combined corporate fleet of cars and light trucks.
- From 2011 to 2019, NHTSA must set fuel economy standards that are the maximum feasible, and ratchet these standards up to meet the 2020 target of 35 miles per gallon, unless NHTSA determines that the achievement of the 35 miles per gallon standard would not be cost-effective for the nation. The bill defines “cost-effective” to mean that the value to the United States of reduced fuel use from a proposed fuel economy standard is greater than or equal to the cost to the United States of such standard. From 2021 to 2030, NHTSA must set fuel economy standards that are the maximum feasible, and ratchet these standards up at a reasonable rate.
- Establishes a credit system and trading program for automakers run by NHTSA. Should an automaker exceed the standards it can sell its credits to another automaker, or bank the credits for up to 5 years. If an automaker cannot meet the standards in a given year, it can purchase credits, use banked credits, or borrow from projected surpluses from future years.
- Establishes an “off-ramp”, or mechanism for alternative standards, for automakers (upon their application), if NHTSA determines that the prescribed standard is more stringent than the maximum feasible average fuel economy level that manufacturer can achieve.
- Directs NHTSA to develop a structure to evaluate and establish fuel efficiency standards for commercial trucks that increase at the maximum feasible rate. Requires improvement in the fuel economy of medium and heavy duty trucks over a 20 year period. It also removes work trucks weighing up to 10,000 pounds from the fuel efficiency standards for cars and light trucks.
- Automakers that sell less than 0.4 percent of the cars sold in the United States would have their fuel economy standard set by NHTSA at the maximum feasible level outside of the regular car standard. (Currently 0.4 percent of the cars sold in the US each year equals to approximately 60,000 cars).
- Creates a consumer labeling program that also includes greenhouse gas emissions.
- Requires the federal government to purchase the most fuel-efficient cars practicable.

- Uses money raised by fuel economy penalties to fund research into fuel-saving technologies and to expand the availability of alternative fuels. Calls for an advanced battery initiative and standards for biodiesel.
- Requires NHTSA to issue a final rule by 2018 to create safety standards that address the differences between the largest and smallest vehicles.

The final version also removes the earlier provision that mandated that 50 percent of cars be flex-fuel in 2012, increasing to 80 percent in 2015. Instead, the compromise language calls for ensuring that 50 percent of vehicles sold in the US are alternative fuel vehicles by 2015—including but not limited to flex-fuel vehicles, hybrids, electric vehicles, fuel cells and others.

#### **47. California Assembly to Reconsider Vote on Clean Vehicle Incentive Program**

California state legislators are reconsidering a bill (AB 493) that establishes a sliding feebate program (surcharges and incentives) based on the greenhouse gas emissions of new light- and medium-duty vehicles. The program would be administered by the California Air Resources board (ARB), would take effect in July 2010 and would apply to motor vehicles introduced for the 2011 model year.

The Clean Vehicle Incentive Program is designed to be self-financing: the surcharges for high-emitting vehicles would fund the rebates for the most-efficient vehicles. The bill was sponsored by the Union of Concerned Scientists, which says that it is seeking to establish a program that reduces vehicle emissions while protecting consumer choice.

The bill, authored by Assemblyman Ira Ruskin (D-Redwood City), requires ARB to develop regulations to implement the program. ARB will have to calculate the rebate or surcharge based on the vehicle's emissions of greenhouse gases, compared to the emissions of all vehicles of the same model year that are subject to the Program.

The program will have a zero-band that reflects 20-25% of a fleet of a given model that will neither receive a rebate nor a surcharge. The zero-band is to be adjusted to ensure that buyers have a variety of vehicles among various types, including light trucks, that are not assessed a surcharge. ARB will consider sales-weighted data in determining the placement of the zero-band.

The maximum amount of the rebates and surcharges is to be not less than \$2,250 or more than \$2,500. The minimum amount is \$100. Any vehicle with an estimated surcharge or rebate of less than \$100 is to be placed in the zero-band.

ARB will make annual adjustments to the applied rebates and surcharges to ensure that the surcharges are sufficient to cover the cost of implementing the program, including administrative costs incurred by any state agency.

The bill directs ARB to determine how to account for alternative fueled vehicles in the surcharge and rebate calculations, and authorizes ARB to develop procedures for surcharge refunds if an approved alternative fuel conversion device is installed on the vehicle within six months of purchase.

The bill also requires ARB to consider upstream greenhouse gas emissions that occur during the production of the fuels.

Certain categories of vehicles (such as emergency vehicles and vanpooling vans) and diesel-powered vehicles are exempted from the legislation, as are very-low-income buyers and very small businesses.

The California Motor Car Dealers Association and the Alliance of Automobile Manufacturers are opposing the bill.

#### **48. Advanced Development Battery Contracts Awarded by GM**

General Motors has awarded two separate contracts for advanced development of lithium-ion batteries and packs for the electric drive E-Flex System used in the Chevrolet Volt. One contract will go to lithium-ion battery supplier Compact Power, Inc. (CPI), based in Troy, Mich. CPI is a subsidiary of Korean battery manufacturer LG Chem. A second contract has been awarded to Frankfurt, Germany-based Continental Automotive Systems, a division of Continental A.G., an automotive supplier that will develop lithium-ion battery packs using cells from A123Systems.

GM selected the two companies out of the 13 technical proposals it considered to provide advanced lithium batteries for both range-extender electric and fuel cell variants of the E-Flex architecture.

The E-Flex System was initially exhibited as the plug-in battery electric propulsion system for the Chevrolet Volt concept vehicle at the North American International Auto Show in January. A plug-in fuel cell variant of the E-Flex system was shown at the Shanghai Auto Show in April. The "E" stands for electric drive; the "Flex" represents the architecture's adaptability to be configured in several vehicle packages operating on various sources of electricity.

GM said that the suppliers chosen demonstrated solutions that best met the specific energy, power, mass and durability requirements for the battery in the E-Flex range-extender variant. The battery for the fuel-cell variant requires half the energy and power, but must be integrated and connected to the vehicle in a similar way.

A123Systems recently introduced its new 32-series family of automotive-class, large-format Li-ion cells. The company designed the 32157 PHEV cells to deliver the lowest cost per watt hour (\$/Wh). The 32157 offers a volumetric density of 260 Wh/L, can deliver very high power at a lower state of charge with a 10+ year projected service life, according to the company.

CPI makes large-format cells using a proprietary lithium manganese spinel (LiMn<sub>2</sub>O<sub>4</sub>) cathode with additives to improve calendar life under high temperature conditions. In work with the Department of Energy's FreedomCAR initiative last year, CPI delivered a cell design that exceeded the FreedomCAR goal of 300,000 cycles. The company also has developed a patent-pending abuse tolerant separator (a membrane between the electrodes) that will further improve the performance of this cell design.

"The signing of these battery development contracts is an important next step on the path to bring the Volt closer to reality," said Rick Wagoner, GM Chairman and CEO. "Given the huge potential that the Volt and its E-Flex system offers to lower oil consumption, lower oil imports, and reduce carbon emissions, this is a top priority program for GM."

#### **49. U.S. Hybrid Figures Set Record as Toyota Surpasses 1 Million Globally**

U.S. sales of light-duty hybrid electric vehicles set a new record in May at more than 45,000 units sold, up 91 percent from May 2006. Those numbers do not include sales of General Motors' hybrid vehicles, as the company does not yet break those figures out separately.

Overall, U.S. light duty vehicle sales rose 5 percent in May 2007 compared to the prior year, according to Autodata. Sales of passenger cars increased 6.1 percent, while sales of light-duty trucks increased 3.9 percent. The combined hybrid sales from Toyota, Honda, Ford and Nissan represented 2.9 percent of new vehicle sales in May—the highest percentage to date.

Ford's hybrids- the Mariner and Escape- had their second best month yet, with sales increasing 12 percent to 3,214 units, representing 13.8 percent of all Mariner and Escape models sold.

Nissan also turned in its best results to date for the Altima hybrid, with 821 units representing 3.4 percent of all Altima models sold. The Altima hybrid is currently available only in eight states, however.

Honda's sales of the Civic Hybrid increased 56 percent to 4,520 units in May, representing 11.3 percent of all Civic models sold. The Accord Hybrid's sales dropped 16 percent to 439 units, representing 1.4 percent of all Accord models sold in May. Honda will not offer a hybrid version of its upcoming new Accord.

Toyota accounted for the bulk of the results with the Prius selling a record high 24,009 units and the Camry Hybrid selling a record 6,853 units. With 36,101 total units sold, the company also reported a 110 percent increase in overall hybrid sales from May 2006.

Other results for May 2007 included 3,312 Highlander Hybrids (down 12 percent from May 2006); 1,746 Lexus Rx 400h vehicles (down 13 percent from May 2006); and 181 GS 450h units (down 38 percent from May 2006).

Toyota has also reported cumulative sales of its hybrid vehicles have surpassed the 1 million mark, with almost 1,047,000 units sold worldwide as of May 31, 2007. Of these, 32.9 percent were sold in Japan and 67.1 percent were sold overseas, primarily in the US. The Prius accounts for 72.4 percent of total global hybrid sales.

Toyota's hybrid vehicles are for sale in Japan and in more than 40 countries and regions around the world. The company began overseas production of hybrid vehicles in Changchun, China in 2005 and in Kentucky in the United States in 2006. Toyota's goal is to achieve annual sales of 1 million hybrids in the early part of the 2010s.

#### **50. Bloomberg Proposes Hybrid Taxi Fleet for NYC**

New York City Mayor Michael Bloomberg has announced a plan to upgrade the city's entire yellow taxi fleet to hybrid vehicles over the next five years. The initiative is part of Bloomberg's larger sustainability plan (PLANYC 2030) for reducing greenhouse gas emissions in New York by 30 percent in the next two decades.

It has been estimated that hybrid vehicles can provide almost double the fuel efficiency of the nearly 1,200 Ford Crown Victoria models which currently make up approximately 90 percent of the city's fleet. The city has already experimented with using hybrids as yellow cabs in the past. In the last two years. It has added about 400 such vehicles to its fleet, including models like the Toyota Prius, Toyota Highlander Hybrid and Ford Escape.

Under the new plan, the number of hybrids in the fleet will grow to 1,000 by 2008, and will increase by 20 percent each year until 2012. New hybrids will have fuel efficiencies over 25 miles per gallon, far better than that of the current Crown Victorias. According to the Natural Resources Defense Council, Crown Victorias get only 10 to 15 miles per gallon in stop-and-go city traffic and drivers can pay up to \$100 per day refueling their tanks. "It costs less to operate these [hybrids] and it puts a lot less into the air, so our kids will breathe better," Mayor Bloomberg said.

Replacing the taxi fleet with hybrids comes as the city is also backing efforts to upgrade its buses. With support from environmental groups, the city has gradually been switching from dirty, older diesel buses to cleaner natural-gas and diesel-electric hybrid vehicles. More than 10 percent of New York City Transit's 4,500-bus fleet now consists of natural-gas or diesel-electric hybrids, which produce lower amounts of particulates and nitrogen and sulfur oxides.

In related news, San Francisco Mayor Gavin Newsom recently urged the City's Taxi Commission to approve a resolution that gradually reduces, offsets, and eliminates greenhouse gas emissions (GHG) from taxis by 2020. Newsom pledged to convert 100 percent of San Francisco's 1400 taxis to hybrid or alternative fuel vehicles by 2011 in his 2006 State of the City Address. The resolution would include the necessary mandate and specifically require the San Francisco taxi industry to reduce its total greenhouse gas emissions by 50 percent from current levels and 20 percent from 1990 levels by 2011. Estimates have shown that converting the City's taxi fleet to hybrid or Compressed Natural Gas (CNG) vehicles is expected to reduce taxi emissions between 30-60 percent.

#### **51. New Jersey Utility to Replace 1,300 Fleet Vehicles with Hybrids**

Public Service Electric and Gas Company (PSE&G), New Jersey's oldest and largest regulated electric and gas delivery utility serving almost three-quarters of the state's population, recently announced plans to reduce its annual carbon emissions by more than 81,000 tons. The company will replace 1,300 vehicles with hybrid cars and light trucks as well as hybrid aerial lift (bucket truck) prototypes-- the first of their kind in the nation-- over the next decade.

In addition to its vehicle replacement program, PSE&G will also power the first of its new vehicles with alternative fuels to immediately begin reducing greenhouse gas emissions. In 2003, the utility company began fueling the diesel-powered vehicles in its fleet with B20 biodiesel.

Ralph LaRossa, president and chief operating officer of PSE&G, said the program highlights a continuing effort by the company to help the state of New Jersey achieve a goal of reducing greenhouse gas (GHG) emissions to 1990 levels by 2020, a 20 percent reduction equal to approximately 46 million tons of carbon dioxide (CO<sub>2</sub>).

#### **52. US Plug-In Cars Would Cut Greenhouse Gases - Report**

Electric hybrid cars that consumers would recharge overnight could dramatically cut US greenhouse emissions, according to a new report. Plug-in electric hybrid vehicles in the United States could cut greenhouse gas emissions by more than 450 million tons per year, according to the report by environmental group the Natural Resources Defense Council and industry research group Electric Power Research Institute.

That amount is the equivalent of removing 82.5 million, or about a third, of US cars from the road, the report said.

Emissions-cutting technologies such as capture and sequestration of carbon dioxide would have to take root at power plants in order for the full global warming benefits of the cars to be realized, the report said.

"NRDC believes that a combination of more efficient vehicles, improved battery technology, and a lower emitting electric power plant fleet can produce substantial reduction in global warming from both the electric power and the transportation sectors," David Hawkins, director of NRDC's climate center, said in a statement.

Interest in plug-ins has surged amid near-record oil prices and worries about emissions of gases scientists link to global warming. The cars are not yet in production, but Ford Motor Co. Chief Executive Alan Mulally said earlier this month he expects the company to sell the vehicles in five to 10 years.

Plug-ins would run on batteries that can be recharged by connecting to home electric sockets and engines that burn liquid fuels like gasoline and ethanol.

Batteries for the cars have not yet been perfected.

If the US auto fleet converts to 60 percent plug-ins by 2050, it would reduce petroleum consumption by 3 million to 4 million barrels per day, but boost power consumption by 7 to 8 percent, the report said.

### **53. The Big Three Join U.S. Climate Action Partnership**

The Chrysler Group and Ford Motor have joined the United States Climate Action Partnership (USCAP), endorsing and participating in its call for economy-wide mandatory reductions of greenhouse gas emissions. USCAP, a partnership representing key sectors of the economy and non-government organizations, earlier this year issued a set of six principles and recommendations toward slowing, stopping and reversing the growth of greenhouse gas (GHG) emissions over the shortest period of time "reasonably achievable".

USCAP's recommendations are based on the following principles:

- Account for the global dimensions of climate change;
- Recognize the importance of technology;
- Be environmentally effective;
- Create economic opportunity and advantage;

- Be fair to sectors disproportionately impacted; and
- Recognize and encourage early action.

The group has recommended that Congress establish short- and mid-term emission reduction targets; a national program to accelerate technology research, development and deployment; and approaches to encourage action by other countries, including the developing world.

In May 2007, General Motors became the first automaker to join the group. In testimony before Congress in March, Rick Wagoner, GM chairman and CEO, said that the company is willing to engage in discussions on carbon constraints on the US economy—including caps on mobile source emissions—as part of a broader climate change strategy. GM says that its position is consistent with USCAP's commitment toward an economy-wide policy and legislative framework that would include a mandatory, flexible cap-and-trade program.

#### **54. US Business Group Says Action Needed on Climate Change**

A major US industry body says that human activity is changing the Earth's climate and urged Washington to take action to reduce greenhouse gas emissions nationwide. But the Business Roundtable, representing 160 of the largest US companies with US\$4.5 trillion in combined revenue, stopped short of advocating a specific policy to accomplish that, saying its members did not yet agree on methods.

"The thinking of US CEOs on climate change is evolving significantly," said Charles Holliday, chairman and chief executive of US chemicals group DuPont and a Roundtable member. "A growing number of CEOs view it as a major issue for their companies."

In recent years, corporate America has dropped arguments that there is no proof human activity causes warmer patterns across the world, putting some business executives at odds with the Bush administration which rejected the Kyoto Protocol, the main UN plan until 2012 for curbing greenhouse gases.

Many scientists say rising emissions of greenhouse gases, particularly carbon dioxide produced by burning fossil fuels, are linked to rising world temperatures. Many fear the warming trend could lead to more droughts, floods, heat waves and more powerful storms.

"Some of our members like the idea of a cap-and-trade," said John Castellani, president of the Washington-based organization, referring to programs in which companies could buy and sell the right to emit carbon dioxide. "Some members like a tax approach; we don't know which works best. So at this point we're calling for flexibility," Castellani said in a telephone interview.

The Roundtable's members include some of the biggest names in US business, such as General Electric Co., Exxon Mobil Corp. and General Motors Corp.

The Roundtable called on members to report on their annual greenhouse gas emissions. Castellani noted that 102 Roundtable members had agreed to cut their greenhouse gas emissions by 18 percent from their 2002 levels by the year 2020.

The Roundtable policy is less specific than that of another recently created group, the US Climate Action Partnership. That organization, formed in January and now representing more than 20 corporate members with US\$1.9 trillion in collective revenue, has called for the US to control carbon dioxide emissions through a cap-and-trade program. In such programs, companies receive credits allowing them to emit certain greenhouse gasses. If they cut emissions below that allowance, they can sell the credits to other companies.

A bipartisan group of US senators has unveiled an industry-backed bill that would use such a system to cut carbon dioxide emissions by 60 percent below current levels by 2050. Some environmental groups criticized the bill because it set a cap of US\$12 per ton on emissions credits, limiting the incentive for companies to reduce their emissions.

### **55. Momentum Builds for Congestion Pricing Plan in Manhattan**

New York City Mayor Michael Bloomberg's congestion pricing proposal has gained modest support from Governor Eliot Spitzer and Mary E. Peters, Secretary, U.S. Department of Transportation, who raised the prospect of federal grants to assist the city's implementation of the plan.

Governor Spitzer said of the proposal, "There will always be some congestion and the good news is there is economic growth and there's vitality in the city...the goal is to mitigate the effects of congestion." Spitzer has been swayed by Bloomberg's arguments that the plan would help the Metropolitan Transportation Authority, whose precarious finances have come at a politically convenient time for the mayor.

Since April of this year Bloomberg has been waging an uphill battle to persuade Albany of the merits of his congestion pricing proposal. He has repeatedly stressed that the fees from charging drivers in Manhattan's most heavily trafficked areas would be a boon for public transit and could potentially help delay, or minimize the impact of, a fare increase.

The plan, however, still has to overcome Albany's skepticism and the opposition of parking garage owners and other businesses worried that they will lose revenue if fewer cars enter Manhattan's busiest areas.

## **ASIA-PACIFIC**

### **56. Taiwan Sets Stricter Motorcycle Emission Standards**

Taiwan has promulgated stricter motorcycle emission standards covering carbon monoxide, hydrocarbons, and nitrogen oxides. The standard for CO emissions was reduced from 7.0 grams per kilometer to 2.0 g/km, while standards for HC and NOx, both previously 2 g/km, were reduced to 0.8 g/km and 0.15 g/km respectively. According to the Taiwan Environmental Protection Administration (TEPA), the standards are now stricter than in Europe. On July 17<sup>th</sup>, six new models were certified as meeting the new standards. Government statistics show that at the end of 2006 there were 13.6 million motorcycles on the island.

### **57. Researchers Say Diesel Soot In Tokyo Air Has Dropped By Half**

The level of toxic diesel soot in the atmosphere in Tokyo is about half the amount recorded between 2003 and 2005, according to researchers. The finding was made by a group of researchers at Tokyo University's Research Center for Advanced Science and Technology, headed by Professor Yutaka Kondo.

The group believes the central and Tokyo metropolitan governments' emission restrictions on diesel vehicles helped reduce air pollution in the capital. Diesel soot, which consists of carbon particulates generated through imperfect fuel combustion, poses a serious health risk to respiratory organs. It is known to contain toxic compounds, such as carcinogenic benzopyrene. It also has a greenhouse effect as it absorbs sunlight.

The center's researchers measured the level of diesel soot in the atmosphere in Komaba, Meguro Ward, Tokyo, where the center is located, between May 2003 and August 2005. The research showed that the monthly average of diesel soot was between 1.71 micrograms and 2.99 micrograms per cubic meter. The average amount of diesel soot during the entire monitoring period was 2.3 micrograms per cubic meter.

When the team reexamined the level of diesel soot between January and March this year, however, they discovered that the monthly average was far lower than before, standing between 0.86 microgram and 1.33 micrograms per cubic meter. The average level of diesel soot measured during the three-month period was 1.1 micrograms per cubic meter, less than half the level in the previous survey.

Starting in October 2003, the Tokyo metropolitan government banned the use of diesel vehicles excluding passenger cars that emit particulate matter beyond its standard.

In October 2005, the central government introduced a new standard, aiming to cut particulate emissions from new diesel truck and bus models by about 85 percent.

"The amount of soot in major Asian cities, such as those in China, Thailand and India, is believed to be several times higher than in Tokyo," Kondo said. "I believe Japan's efforts to set tough restrictions on vehicles will serve as a good example for other countries trying to tackle air pollution."

## **58. China Hails Cleaner Air During Car Restrictions**

Air pollution increased in Beijing a day after an Olympic pollution prevention test took over a million cars off the roads, environmental officials said, indicating the measure works. To see if the city's poor quality air could be improved at least temporarily during next August's Games, Beijing ordered 1.3 million cars off the roads by alternately banning odd and even number plates from Friday to Monday.

"The test has clearly demonstrated we are capable of providing good air quality for the Beijing Olympic Games," Beijing Environmental Protection Bureau (BEPB) deputy chief Du Shaozhong told reporters.

Official air quality reports over the four days of car restrictions came in at Grade 2 on 1-5 scale. This worsened to Grade 3 by midday on Tuesday. Du said the car restrictions had produced good results in improving the air quality, reducing carbon monoxide and other air-borne pollutants by between 15 to 20 percent.



"The accumulation of emissions clearly slowed over the four-day test. With these weather conditions, we would not have met air quality targets over four consecutive days without the restrictions," Du said.

International Olympic Committee (IOC) President Jacques Rogge said at the one year countdown to the 2008 Beijing Games earlier this month that some endurance sports like cycling might have to be postponed if air quality was not improved. "If the air quality is as good as Grade 2, it would be suitable for activities including the (Olympic) sporting events," said

Du. Beijing regards Grade 1 and 2 air pollution ratings as acceptable "blue sky days".

However, diverse opinions were expressed by private car owners and public transport users.

According to a survey by Beijing Youth Daily, 61.9 percent of car owners opposed the practice in a long run while 78.2 percent of public transport users lauded it. The survey covered 3,000 residents.

Car owners argued that smoother traffic comes at the expense of individuals' convenience. "Does being a car owner mean you have limited rights? That would be cruel and inhuman," Wang Hongsheng, head of the Volkswagen Polo club in Beijing, said. Fifty-seven percent of car owners shared his opinion.

Among non-drivers, 21.9 percent did not think the even-odd plate exercise was a reasonable, scientific way to gauge air quality. "It is an arbitrary way of stripping car owners of their rights. They pay for the convenience," a respondent said. Apart from the purchase price, the cost of owning a car in Beijing ranges from 10,000 Yuan to 30,000 Yuan (\$1,300 to \$3,900) a year, he said.

The survey also showed 36 percent of car owners were in favor of "public transport if managed well". "People are fed up with the poor condition of buses, and the metro where people are packed like sardines," another said.

On options to improve traffic conditions, 49.9 percent said efficiency and lowering public transport fares should top the government's agenda instead of restricting car-ownership.

Twenty-six percent of respondents said more roads and bridges should be built to reduce congestion, 14.5 percent were in favor of more flexible parking fees in relation to localities, and 9.5 percent said the use of bicycles and walking should be promoted.

Independent reports said a stubborn gray haze shrouded Beijing throughout the test period. The State Environmental Protection Agency said Beijing's air pollution index was between 93 and 95 on the test days, with an index below 100 indicating good or excellent conditions. The index hit 116 Tuesday following the test and was 115 the day before the trial began. However earlier in the month the pollution index had dipped as low as 42 and generally hovered in the 70's or 80's during the first two weeks of the month.

## **59. Shanghai's Air Quality Poorer This Year**

Shanghai had 12 consecutive days with excellent or good air quality during August, but this year's average air quality so far is still poorer than the same period last year, the Shanghai Environmental Protection Bureau said. The city's temporary clean air is the result of recent rains that have wiped out pollution particles.

If the city expects better air quality, it needs to take a firmer hand to reduce air pollutants from vehicles' toxic black fumes and industrial chimneys, the bureau said.

Shanghai measures air quality from Grade 1, or excellent, to Grade 5, the worst level, depending on the pollution-causing particles in the air.

Over the past 12 days, the city has had eight days of Grade 1 and four days of Grade 2. So far this year, the city has had 201 days with air quality of either Grade 1 or 2, seven days less than the same period last year.

Normally, the city's air quality from June to September is the best of the year thanks to the wind direction and tropical cyclones. The worst season is from November to February, the bureau said.

Shanghai has announced it will cut emissions from industrial boilers by up to 90 percent over the next three years.

## **60. China Drafts Laws To Curb Pollution**

China has begun deliberating a draft law aimed at boosting energy saving and emissions reductions, its latest effort to curb widespread resource waste and degradation. The issue has taken on greater urgency as Beijing tries to clean up its notoriously filthy air before hosting the 2008 Olympics next August.

The draft law on a "circular economy" -- China's watchword for sustainability -- stipulates that governments at all levels should control energy use and emissions, strengthen management of resource-intensive companies and divert capital into environmentally-friendly industries. "China has been facing serious environmental and resources problems during the economic development since the 1980s, which were mainly caused by the low resources efficiency", the official Xinhua news agency quoted lawmaker Feng Zhijun as saying. China's average energy consumption per unit product for industries such as steel, electric power and cement was 20 percent higher than that of "the advanced international level", he said.

In its rapid development into the world's fourth-largest economy, China has become the world's top emitter of acid-rain causing sulfur dioxide. Many analysts expect it to overtake the United States this year as the biggest greenhouse gas emitter.

The government under President Hu Jintao and Premier Wen Jiabao has strengthened environmental legislation but laws and regulations often go unenforced at the local level, where officials typically prioritize economic growth over environmental protection.

An official from the State Environmental Protection Administration (SEPA) said China was also trying to strengthen and broaden local governments' ability to restrict approvals for new projects that would pollute, and to standardize the national approvals, Xinhua said.

China has promised to cut emissions of major pollutants by 10 percent between 2006 and 2010, but last year failed to meet the annual goal.

## **61. Smog Smothers Japan, Experts Point to China**

Smog is menacing Japanese cities for the first time in 30 years and cropping up in rural areas for the first time ever, alarming the government and prompting experts to point the finger at neighboring China. Warnings for high levels of hazardous smog have been issued in a record 28 prefectures so far this year, from sparsely populated isles in southern Japan to Niigata, western Japan, where 350 people have suffered stinging eyes and throats.

While the government is cautious about placing blame, experts say much of the rise in pollution is coming from China. The type of smog -- called "photochemical smog" because it is created when sunlight reacts with exhaust from cars and factories -- is made up of photochemical oxidant particles such as ozone. These particles can cause breathing difficulties and headaches.

"In terms of average levels of photochemical oxidants measured annually across Japan, there has been quite a rise since the 1990s," said Toshimasa Ohara, head of the National Institute of Environmental Studies' regional atmospheric modeling section. "We believe a substantial part of that rise has come from increasing emissions in China. We're looking into what percentage this factor has accounted for." But academics say Japan may find it hard to put pressure on China to cut emissions, with studies yet to show a precise figure on how much of Japan's smog is caused by cross-border pollution. "If we are going to take action against other countries, we can't be vague," said Atsuko Mori, senior researcher at the Institute for Environmental Research and Public Health in Nagasaki, southern Japan. "There needs to be a thorough, scientific study into the causes."

Mori and other experts say research is complicated because domestic factors are also to blame for the recent rise in smog across Japan, which has taken pride in its efforts to cut emissions since its days of rapid economic growth in the 1970s. For example, while emissions from cars have been restricted, those from paint and gasoline vapors, which also contribute to smog, have been harder to control. Smog can also be exacerbated by strong sunlight.

The Environment Ministry asked a group of academics and local health officials last month to carry out a study on pollution trends, but detailed research into the causes could take years. "Research to base environmental policies on requires a lot of time and money," said Hajime Akimoto, program director at the Japan Agency for Marine-Earth Science and Technology, noting that the United States spent a decade on research before it took steps against cross-border pollution. "Research like that in Japan could take another five years."

As a first step, government officials say Japan is working together with China to measure its pollution, although the country still lacks high-tech equipment to analyze some pollutants such as ozone.

Ohara at the National Institute of Environmental Studies said the region could in future look to the example of the Convention on Long-Range Transboundary Air Pollution, an agreement to cut pollution under the UN Economic Commission for Europe signed by various countries. "If it becomes clear that the effects of cross-border pollution are big, then it will be imperative to create international regulatory rules within East Asia, similar to Europe," he said.

## **62. Delhi High Court May Ban Diesel Cars**

Diesel cars have got into the cross hairs of the Delhi high court. It feels that they defeat the intent of the 2001 Supreme Court order to shift public transport to use compressed natural gas.

Delhi has more cars than the three other main metros put together, and the proportion of diesel cars is also rapidly increasing. In 2001, the Supreme Court banned use of diesel in public transportation and ordered that buses, taxis and auto rickshaws shift to use of compressed natural gas or CNG, to keep a lid on air pollution in the city.

The Delhi High Court is concerned that diesel cars might be defeating the intent of this order. There are 46,000 diesel cars plying in the city and they might be causing as much pollution as 5,000 buses running on diesel. The court has asked the Delhi government to report to it by September 10, the feasibility of banning diesel cars or getting them to use natural gas.

The Indian automotive industry, which has thousands of crores of rupees riding on diesel cars, is not too happy with the move being sought. India's largest car maker Maruti is investing Rs 2,500 crore in a plant to make diesel engines. It has rolled out its diesel Swift recently but says the move should not be to discourage new diesel cars with better technology

Jagdish Khattar, MD, Maruti Udyog said, "We have to see why diesel is so popular. It's because of the price difference. We need to correct that."

The biggest player in diesel car market, Tata Motors is in the midst of an Rs 12,000 crore capacity expansion and product development plan. 70% of Hyundai Verna's sales are diesel and about 70% of Ford Fiesta's. Ford has recently launched a diesel variant of Fusion and General Motors has also launched a diesel version of Optra.

As the size of the passenger car market has doubled in recent years to over 1 million, of which diesel vehicles have come to account for about 40%, compared with just 20% three years ago.

The government has told the Delhi high court that a ban on diesel cars or "private light motor vehicles" would need amendment to the motor vehicles act.

## **63. Bosch Opens New Diesel-Components Production In India**

German-based automotive components multinational Bosch announced it had begun production of common-rail injectors for diesel engines in India and expected to be making 3.5 million annually by 2010. Bosch supplies the injectors to engine manufacturers and says they help reduce dangerous emissions.

The move crowns a 100-million-euro (135-million-dollar) expansion of the Bosch factory in Nashik and was part of a previously announced plan to invest a total 18 billion rupees (440 million dollars) in India between 2005 and 2008.

The German company predicted that the use of diesel engines in passenger cars in India would rise from 30 per cent to 40 per cent of annual production by 2010.

The new production line is to produce 100,000 injectors in 2007. The Nashik site has been making components since 2006 and developing indigenous skill and expertise.

In 2006, worldwide sale of Bosch common rail systems was 6.8 million units, the company said.

#### **64. CNG Switch Said To Have Reduced Mumbai City Pollution**

Mumbai has breathed a lot easier since the last time a section of its traffic changed over to a greener, cleaner fuel. All 55,000 of Mumbai's taxis have switched over to CNG since 2000. That has meant they emit 55 tons less of carbon monoxide every year. Besides, the significant drop in carbon monoxide levels, particulate matter in taxi emissions has come down by 99 per cent from pre-CNG levels (a decrease of 29 tons).

"We can say air quality has improved in proportion to the improvement in fuel quality as most vehicles are compliant with Euro-II and Euro-III standards," Rakesh Kumar of the National Environment Engineering Research Institute (NEERI), Mumbai, said. The improvement would be similar in auto-rickshaw emissions as well, he said. An overwhelming number of Mumbai's auto-rickshaws now run on CNG.

Comparisons of sulfur dioxide levels reinforce the theory. There used to be 46 micrograms per cubic meter of sulfur dioxide in Kalbadevi in 1990. The figure came down to 13 in 2000 when the switch from to CNG happened. The 2005 figure was 9.

But BEST buses have been comparatively slower in the switch-over; less than 20 per cent of the fleet runs on CNG. The improvement in air quality could also be short-term. Kumar said an uncontrolled growth of vehicular population could deteriorate air quality again: "Average speeds may come down to 8 kmph from the present 20 kmph-25 kmph in the city, meaning more burning of fuel and more emissions."

#### **65. India Finance Minister Supports Sharing Oil Firms' Losses**

Petrol and diesel prices are unlikely to be hiked in the near future, with Finance Minister P Chidambaram agreeing in-principle to share a third of the revenue loss that state-run oil firms incur on the sale of fuel. "Chidambaram in a meeting with Petroleum Minister Murli Deora agreed in-principle to issue oil bonds to cover one-third of the under-realization on sale of petrol, diesel, LPG and kerosene in 2007-08," official sources told the press.

Government-owned oil firms --- Indian Oil Corporation (IOC), Bharat Petroleum Corporation Ltd (BPCL) and Hindustan Petroleum Corporation Ltd (HPCL)--- had sought an immediate hike in petrol, diesel, LPG and kerosene prices as they are losing over Rs 185 crore<sup>2</sup> per day on sale of the four products. During 2007-08, PSU oil firms' losses on sale of petrol, diesel, LPG and kerosene has been estimated at Rs 52,162 crore, one-third of which would now be met through oil bonds.

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<sup>2</sup> An Indian crore is equal to 100 [lakh](#) or 10 [million](#) (10<sup>7</sup>).

An equal amount would be contributed by upstream firms like ONGC and GAIL by way of discounts on crude oil and LPG they sell to the refiners.

"The remaining portion of the under-recovery would be absorbed by IOC, BPCL and HPCL," the sources said.

The Indian basket of crude oil has risen over 30 per cent since February when petrol and diesel prices were cut by Rs 2 and Rs one per liter respectively. Oil firms are losing Rs 5.88 per liter on petrol, Rs 4.80 a liter on diesel, Rs 189.14 per LPG cylinder and Rs 14.63 on sale of every liter of kerosene, according to reports. During the April-June quarter, IOC, BPCL and HPCL together lost Rs 1,553 crore on selling petrol, Rs 4,633 crore on diesel, Rs 4,028 crore on kerosene and Rs 2,698 crore on domestic LPG.

IOC, which controls roughly half of the fuel market, is losing Rs 6.64 crore per day on sale of petrol, Rs 40.12 crore on diesel, Rs 30.55 crore on kerosene and Rs 15.90 crore on sale of domestic LPG.

#### **66. Reliance Petroleum To Tap Green Fuel For Greenbacks**

Reliance Petroleum Ltd (RPL) is planning to tap the global shift in demand for upgraded fuels that meet tighter fuel emission norms under Euro III and Euro IV. The refining arm of Reliance Industries, RPL is targeting to capitalize on the early mover advantage in this particular segment of the global refining industry.

Reliance Petroleum is setting up a 5.80 lakh<sup>3</sup> bpd export-oriented refinery at a cost of Rs 27,000 crore at Jamnagar for the same. This project is likely to be commissioned towards the end of next year.

"Our new refinery at Jamnagar is totally export-oriented and will be able to produce under not only Euro IV but even Euro V norms. I feel this is an opportunity for RPL to enhance margins on the premium products from the global petroleum business," PMS Prasad, president, petroleum business, RIL, told Express News Service.

The sulfur content in Euro IV compliant fuels has been restricted to 50 ppm. Specifications in discerning markets like the US and Europe are even more severe. "The US has moved to 30 ppm sulfur in Gasoline, with the state of California having already implemented below 25 ppm specification. The EU member states have agreed to reach a target of below 10 ppm by 2009," said Prasad. He also added that in the US regulations have already mandated that 80% of the existing diesel used for transportation will be replaced by ultra low sulfur diesel (ULSD) by 2010.

According to a Mumbai-based analyst, "It appears very clearly that RPL, which proposes to export its gasoline to the US market, is definitely geared to fetch a premium price from supplying the required grade of fuel and the superior alkylate blendstock. The RPL refinery will stand to gain in the future gasoline market."

#### **67. Motorbikes Fail Emissions Tests in Hanoi**

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<sup>3</sup> One lakh is equal to a [hundred thousand](#) (10<sup>5</sup>).

Nearly 60 percent of motorbikes in Hanoi don't meet emissions standards. The figure was determined following inspections of 1,675 motorbikes in the capital city as part of a study conducted by the Hanoi Department of Natural Resources and Environment and the Department of Housing with support from the World Bank.

The inspections also showed that only the Honda Click motorbike meets the Euro 2 standard for exhaust emissions.



At the other extreme, motorbikes in use for longer than 15 years were found to have emissions many times higher than those permitted by law.

Trinh Ngoc Giao, deputy director of the Vietnam Registration Department (VRD) said his department was developing a plan to control motorbike and vehicle emissions in major cities. The department would soon begin a program of inspecting all motorbikes in Ho Chi Minh City and would issue new emissions regulations by 2010, Giao said.

Meanwhile, installing a catalytic converter on vehicles was a proven technology that could help reduce 50-80 percent of toxic emissions, according to research by the University of Technology and VRD which successfully installed converters on Honda Dream motorbikes and other models.

A VRD survey found that 96 percent of drivers would agree to install the converters on their motorbikes if they received support for the cost.

The Hanoi Department of Natural Resources, Environment and Housing has estimated that, each year, 80,000 tons of dust, 9,000 tons of sulfur dioxide and 46,000 tons of carbon dioxide are pumped into the city's air by cars, motorbikes and industry.

The city currently has an estimated 150,000 cars and 1.5 million motorbikes.

Dang Duong Binh, head of the department's environmental management office, said motorbikes release most of the poisonous gases found in the city. "Motor vehicles are the biggest cause of pollution in the city, and not industry or domestic use of coal," Binh said.

Hanoi will consume more than 262,000 tons of petrol per year by 2010 and about 403,000 tons per year by 2015, according to the city's Environmental Master Plan for 2001-10.

According to the Labor Health and Environmental Hygiene Institute, 626 people die and another 1,500 contract respiratory diseases in Viet Nam every year as a result of dust and pollution. In 2005, exhaust fumes cost the economy and healthcare system in Hanoi more than US\$20 million.

The institute also predicted that the concentration of poisonous gases in the air would reach seven to nine times the permitted levels by 2010.

The Swiss Agency for Development and Co-operation is funding a three-year, \$2.73 million project to study and tackle the problem of air pollution in Hanoi. The project will have four components, including policy reform, increasing awareness, developing a database to support air quality management, and piloting mitigation of air pollution from construction sites, industry,

and traffic. The program will be carried out by the Viet Nam Environmental Protection Agency and the Swiss Foundation for Technical Co-operation (Swisscontact), among others.

The program will include a driver education component. Under the "eco-driver program," drivers will be taught to start, operate and stop their vehicles in the most environmentally-friendly way.

Swisscontact said they would also teach drivers the importance of maintaining their engines to limit exhaust emissions.

Experts met last month to develop an air quality management action plan for Hanoi. The first draft of their recommendations was expected next month.

## **68. Myanmar Says Could Not Afford Diesel Subsidies**

Myanmar's military government said it was forced to make sudden increases in domestic fuel prices this month because it could not afford the growing cost of subsidies. The shock doubling of diesel prices and a fivefold hike in the cost of compressed natural gas sparked a rare series of protests against the junta, which has been in charge of the former Burma for the last 45 years.

"The new price does not cover what we are paying for our imports," Soe Myint, director of the Energy Ministry's energy planning department, told reporters on the sidelines of a conference in Singapore. "The government just wants to relieve some of its burden on to the customer," he said.

Soe Myint said the increases, which brought the former capital's bus networks to a standstill, were not as severe as the last adjustment, when the price of state-subsidized, tightly rationed fuel was increased nine times. "The price hike proportionally is not as high as what we did two years ago," Soe Myint said.

Myanmar has some of Asia's largest reserves of natural gas and is already an oil producer, although decades of non-investment in its refineries means it has to import most of its energy.

"Our dream is Myanmar would eventually become a major energy supplier in this region," Soe Myint said. "We hope to become a sort of bridge between Southeast Asia and South Asia," he said.

Myanmar's military rulers have awarded a raft of oil and natural gas exploration contracts, following major discoveries by South Korea's Daewoo International. Impoverished locals have yet to see the benefits of the energy deals. Most have been left in the dark as blackouts stretch through much of the day.

To fully understand the pressures behind the increase in fuel prices, it is important to consider some deeper structural characteristics of the Burmese economy and oil and gas sector.

To begin, one bold fact: Burma is essentially a diesel-powered economy. This is seen in the buses, trains and trucks that rumble around the country. This is also seen in the dilapidated power plants that sometimes generate electricity. Most of all, This is seen in the ubiquitous portable generators that exist in nearly every home, factory and shop that can afford one.

For a long time now, diesel prices have been kept artificially low through subsidies. And as demand for diesel has continued to grow in tandem with an expanding economy, the amount spent on these subsidies has similarly expanded, posing an ever increasing strain on the regime's finances.

In an attempt to increase the supply of diesel, the regime attempted to encourage greater crude oil output from the domestic oil industry in recent years. This has not met with great success, as onshore wells are declining in productivity (the "peak oil" phenomenon) and there are few, if any, offshore wells.

In any case, sources suggest, even if higher volumes of crude could be obtained domestically, another bottleneck would have developed around the available refining capacity in Burma. Burma's ageing refineries simply cannot refine crude volumes sufficient to meet demand. These refineries, in addition, are incapable of refining crude from other sources with different sulfur content, thus ruling out imports of crude to augment domestic supplies.

The only solution then, is to import diesel. And as this is usually done at spot market prices, it is an extremely costly solution.

#### **69. Asian Nations to Cooperate on Curbing Health Risks**

Governments from across Asia pledged at an August 9<sup>th</sup> summit in Bangkok, Thailand, to reduce the estimated 6.6 million deaths in the region annually attributable to environmental health risks such as air pollution and hazardous waste. Senior officials endorsed the "Bangkok Declaration on Environment and Health," which calls for governments to improve cooperation among environment and health-related ministries by developing a "mechanism for sharing knowledge and experience" and refining local and regional regulatory frameworks. The declaration also called for officials to address several "priority" problems over the next three years, including air quality, solid and hazardous waste management, climate change, and toxic substances, and established regional working groups for each. China, Japan, South Korea, Singapore, and Vietnam were among the countries in attendance at the summit, which will reconvene in 2010 to take stock of their progress.

#### **70. Australian State Plans Vapor Recovery Rules**

The New South Wales state government intends to introduce regulations in 2008 that would require service stations in Sydney and two nearby cities (Wollongong and Newcastle) to install vapor recovery systems at the pump. A discussion paper released on August 13<sup>th</sup> proposes a phased-in strategy that starting in 2008, would require new and refurbished service stations to be fitted with pumps that recover vapors during refueling. By 2016, the requirement would apply to all service stations in these cities selling more than 3 million liters of gasoline a year. The paper says some other Australian cities are likely to introduce a similar requirement. It says requiring vehicles to be fitted with onboard refueling vapor recovery units is "not a feasible alternative" to pump-based systems as it would take too long and would be too costly. Comment on the paper must be submitted by September 14<sup>th</sup>.

#### **71. Cebu Bus, Taxi Operators Won't Seek Fare Increase**

While two jeepney groups in Cebu are seeking a 50-centavo fare increase after the price of diesel increased to P35.76 per liter, operators of buses and taxis have given assurances that they would not seek an increase in fares.

Nick Villahermosa, president of Cebu South Bus Terminal Operators, said they could still stand the recent increase of diesel. The taxi operators were not affected by the increase of diesel since most of the more than 4,000 taxi units plying Cebu City run on liquefied petroleum gas (LPG). Only 15 percent of over 4,000 taxis in Cebu or over 600 units still use diesel.

Villahermosa said the price of diesel breached the P35 per liter level last year, but bus operators still did not seek a fare increase because they understood the plight of the commuters. But he said bus operators would only seek a fare adjustment when the diesel fuel increase would reach P37 per liter.

The taxi operators would also seek a fare increase only if the price of LPG fuel would reach P35 per liter. A liter of LPG fuel costs P26.

Two PUJ drivers group, Ang Nagkahiusang Draybers Alang sa Reporma (Andar) and the Nagkahiusang Draybers sa Sugbo (Nadsu) said that they asked the Land Transportation Franchising and Regulatory Board (LTFRB) to implement an immediate fare adjustment of 50 centavos. Presidential Assistant Ariel Lim, head of the Public Transport Affairs of the Office of the President, told Cebu Daily News that he recommended to President Gloria Macapagal-Arroyo last May to allow the 50-centavo increase once the price of diesel reached P34 and P35 per liter.

## **72. Thailand's CPF To Produce, Sell Bio-Diesel From Recycled Cooking Oil**

Charoen Pokphand Foods (CPF), a subsidiary of Thailand's market leading conglomerate Charoen Pokphand Group, plans to produce bio-diesel fuel from recycled vegetable oil for use in Thailand and for export, said a senior CPF executive. CPF senior vice president Choosak Lertamornpitti said his company is producing high quality bio-diesel, which has been certified by the Ministry of Energy. It can be used with both passenger vehicles and farm trucks.

After a two-year test in making bio-diesel from used vegetable oil, CPF is now able to produce between 500,000-600,000 liters of bio-diesel monthly. The bio-diesel is now being used with cars belonging to the company, Mr. Choosak said, adding that the company could save about Bt60 million a month by not using conventional diesel.

In another setting, Energy Minister Piyasvasti Amaranand said Thailand had achieved a great success in developing alternative energy and energy conservation, as the country received 10 out of 24 prizes during last week's ASEAN Energy Ministers meeting in Singapore. One of the 10 prizes went to CPF.

Mr. Piyasvasti said earlier that energy ministry policy encourages local production of bio-diesel from used vegetable oil, after it was found that only one-third of the country's 74 million liters of vegetable cooking oil was recycled. If the nation's entire annual volume of cooking oil was processed and recycled as bio-diesel fuel, he said, Thailand could save about Bt1.57 billion yearly on imports of diesel oil.

Initially, the ministry targeted encouraging local production of such bio-diesel in 400 communities nationwide by year end, with each community making between 100-150 liters of bio-diesel daily.

### **73. China Car Sales Up 22.3% In First Six Months**

Passenger vehicle sales in China, the world's second-biggest auto market, grew by more than one-fifth in the first half of this year as carmakers cut prices and launched new products to woo buyers, according to an industry body. January-to-June sales of domestic-made passenger vehicles - sedans, sport utility vehicles, multi-purpose vehicles and mini vans - reached 3.08 million units, up 22.3 percent from a year ago, according to data from the China Association of Automobile Manufacturers.

Passenger vehicles sales in June alone were 511,900 units, up 28.6 percent from the same period last year.

Analysts attribute the buoyant growth largely to car producers' price incentives and new product offerings, such as the Skoda Octavia, Toyota's new Corolla, Nissan's Livina and the Geely Vision.

Car prices in China fell by 3.3 percent from January to June, according to Cheshi.com.cn, a Beijing-based website that tracks car prices nationwide. Recently, for example, US carmaker Ford Motor Co's venture with Chang'an Motor Corp slashed prices of the Focus compact, its best seller, by 6,000 to 12,000 Yuan.

Ford Motor China said the venture's first-half sales surged by 57 percent to 93,587 cars, including 55,676 units of the Focus. The company, which also makes the Ford Mondeo, Volvo S40 and Mazda3 in southwestern city of Chongqing, will launch an all-new Mondeo later this year.

"Car prices will further decline in the second half as a result of mounting pressure on old products from new comparable models to lure customers," said Hua Xue, CEO of Cheshi.com.cn.

A total of 32 all-new passenger car models will be launched in China this year, according to market intelligence from German carmaker Volkswagen's venture with First Automotive Works Corp (FAW).

### **74. Shenzhen Will Supply Stricter Supervision To Vehicle Fuel Marketing And Use**

To generalize 'Shenzhen national III standard' vehicle fuel and to reduce vehicle emission pollution for better air quality improvement, Shenzhen will strongly attack illegal vehicle fuel marketing and strengthen the overall supervision.

The city will stop illegal vehicle fuel sales which exceed 'Shenzhen national III standards'. Vehicle fuel inspection and supervision working mechanism will be established, using rapid inspection equipment to carry out mobile inspection in relevant gas stations and oil depots for maintaining vehicle fuel market order in deed. Shenzhen will improve supervision of oil product quality, especially in the area joining Shenzhen and Dongguan and the area joining Shenzhen and Huizhou.

Shenzhen will also enhance supervision of oil quality used by buses and passenger transportation vehicles, road transportation vehicles, enterprises' vehicles and working machines.

During the process of vehicle fuel marketing, illegal behavior relating to price in all gas stations and oil depots will be punished, such as false propaganda and price swindling etc.

During the supply of products, all vehicle fuel marketing enterprises must mark oil quality standard clearly.

The city will strengthen spot check and road inspection of vehicle exhaust emission, and force substandard vehicles to exhaust pollution maintenance centers to accept reinspection. Vehicles which cannot meet the standard during the reinspection will be punished. The behaviors related to crime will be delivered to judicial departments and will be charged with criminal responsibility.

#### **75. Report: Air Pollution Kills Nearly 1100 People Prematurely in New Zealand**

The highest cost of air pollution is premature death caused by long-term exposure to air pollutants, according to the Health and Air Pollution in New Zealand (HAPiNZ) study. The main source of air pollution nationally is fireplaces used for home heating, with transport being the primary source in Auckland.

"We are repeatedly seeing the damage air pollution does to human health, society and the economy," said Environment Minister David Benson-Pope. He called on local councils through the country to start implementing the national environmental standards for air quality - introduced in 2004 - which will be mandatory from 2013.

The \$1.1 billion cost ranged from premature deaths to extra days spent ill in bed, days missed from work, and activities restricted by illness.

#### **76. 760,000 Chinese A Year Die From Pollution; China Disagrees**

760,000 Chinese die prematurely each year from polluted air and water, according to estimates by the World Bank. Reuters reported that diarrhea and cancer from dirty drinking water cause 66,000 premature deaths a year, while outdoor air pollution kills 396,000 people per year. Indoor air pollution, mostly from coal-burning stoves and cooking oil, kills another 300,000. The Bank did not calculate death totals directly due to protests from the Chinese government which said that the figures could trigger social unrest. Instead the bank listed the economic costs of deaths from pollution, assuming each life is valued at 1 million Yuan (\$131,000).

Pollution is one of China's most pressing environmental issues. A 2005 government study showed that about 300 million Chinese drink unsafe water tainted by chemicals and other contaminants and that 90% of China's cities have polluted ground water. Meanwhile, a 2005 study by the World Health Organization (WHO), reported that seven of the world's ten most polluted cities are in China and almost two thirds of the country's largest cities fail to meet the organization's air quality standards. The World Bank estimates that pollution is costing the country 8-12% of its GDP in direct losses.

While these issues could threaten to destabilize the country and derail economic growth, China is at least taking steps to address some of these challenges. In September 2006, the government proposed a plan to curb sulfur dioxide emissions through a trading scheme that would require power plants to pay for the right to emit the pollutant. China is the world's largest sulfur dioxide polluter, emissions of which have climbed by some 27 percent to 25.5 million tons since 2001. Sulfur dioxide emissions are blamed for worsening acid rain which affects one-third of the country according to Sheng Huaren, deputy chairman of the Standing Committee of parliament.

China also announced it would spend \$175 billion protecting its environment over the next five years. The money will be used to reduce pollution, improve water quality, and cut soil erosion. The government has banned logging, spent \$190 million on environmental protection along the new Golmud and Lhasa railway, initiated a reforestation project that would plant an area of forest the size of California, and invested billions in renewable energy technologies including wind, solar, and biofuels, setting a target of 12 percent of its power generation capacity coming from renewables by 2020 -- up from a 3 percent in 2003. The government's interest in reducing China's use of petroleum products extends beyond environmental and health concerns; it sees both the strategic value of mitigating its reliance on foreign oil (currently about 10 percent of oil use) and the economic advantages of being on the technological leading edge of energy production.

Local governments are also seeking to reduce pollution. Last month Shanxi Province, which had 13 of the 30 most polluted cities in China in 2006, said it will pay city government officials 2 million Yuan (\$262,000) each if they are able to pull their cities out of the ranking of China's five most polluted cities, according to state media. Cities that see their air quality improve 10 spots in the national ranking system would reward city heads 2 million Yuan (\$262,000).

Nevertheless, earlier this year China's environmental protection agency said the country failed to meet any of its 2006 pollution control goals and blamed the shortfall on economic growth. Further, last month an NGO that advises the Dutch government said that China surpassed the United States as the world's largest producer of greenhouse gases. However, unlike the U.S., China has announced plans to rein its burgeoning emissions of greenhouse gases.

The World Bank estimates of hundreds of thousands of premature Chinese deaths each year are baseless, a vice minister of China's State Environmental Protection Administration said. Zhou Jian, vice minister of the administration, said linking environment and health was a "very complex scientific issue" and that it was impossible to estimate how much of a person's life pollution shaves off. "I don't dare conclude that any country can clearly and accurately say that because of environmental problems, or because of pollution problems, that people's lives are cut by a certain amount, that they are made sick or even die," he said. "I don't think that data exists ... I think the World Bank report lacks a precise, scientific foundation, regardless of how many people it says die in China because of pollution."

## **77. China Silences Green GDP Study, Report Says**

China has stopped the public release of an official study putting a cost to the nation's environmental damage, a government researcher told a Chinese newspaper, blaming official reluctance to confront pollution. The Beijing News reported that the release of a "green GDP" report computing the cost of pollution and ecological degradation in 2005 had been "indefinitely postponed".

Wang Jinnan, a senior expert at the Chinese Academy for Environmental Planning who was technical head of the project, said publicizing the cost of bad air, water and soil had drawn fierce opposition from local officials eager to maintain growth. "Taking out the costs of environmental damage would lead to a huge fall in the quality of economic growth in some areas," Wang told the paper. "At present many areas still place GDP above all else, and when such thinking dominates, the size of resistance to a green GDP can well be imagined."

Wang said some provincial governments had lobbied the State Environmental Protection Administration (SEPA) and the National Bureau of Statistics not to release the data.

The report was originally scheduled for release in March, the China Youth Daily reported.

A previous report for 2004 had calculated that environmental degradation that year cost 511.8 billion Yuan (US\$67.7 billion) or 3.05 percent of gross domestic product -- a figure one SEPA official said at the time was "shocking". That earlier report was issued in September last year with official fanfare and wide domestic media attention. The report for 2005 shows "losses from pollution and reduction in the GDP indicator even higher than the 2004 report", the paper said, citing a weekend seminar on the study.

The report would also have computed economic losses from pollution for each province -- a sensitive step in a system where maintaining economic growth can be crucial to officials' promotion prospects.

The unusual revelation of official infighting is the latest sign that China's struggle to balance economic growth with environmental concerns has become a volatile political issue.

Wang said that in the bureaucratic feud over environmental data, SEPA and the statistics agency had "major differences" over what the report should say and how it should be distributed.

The China Environment News, SEPA's official newspaper, argued earlier this month that the "green GDP" idea was essential to breaking officials' fixation on growth. "We must use green GDP, this powerful restraining device, to further intervene and correct," the paper said. But the head of China's statistics bureau, Xie Fuzhan, said on July 12 that the government had stopped using the term "green GDP" -- previously promoted to cover measures of growth that took into account environmental costs.

Xie said the term was not internationally accepted, but China would continue issuing statistics on energy efficiency, land use and emissions.

Some Chinese economists have also said that methods and data available for calculating economic losses from environmental exploitation were still too crude for open use.

Without the support of the statistics agency it would be impossible to continue research seeking to calculate the costs of environmental harm, Wang said.

## **78. Wen Urges Greater China Effort to Fight Pollution**

Chinese Premier Wen Jiabao has called on the nation to redouble its efforts to tackle pollution and global warming, according to a statement posted on the government's Web site. Speaking during a government meeting on energy saving and climate change, Wen said that the country needed to fully grasp the urgency of the task at hand.

"We should show more determination and take stronger measures to address this issue in an urgent manner," he said in a statement.

Rapidly growing China is poised to overtake the United States as the world's top emitter of greenhouse gases, and Beijing faces rising international calls to accept mandatory caps on carbon dioxide emissions from factories and vehicles.

The statement offered no new policy initiatives but appeared to serve as a reminder that China is serious about trying to reduce its consumption of oil, gas and coal and to rein in the emissions causing global warming.

Wen has spoken previously about the huge challenges China faces as it struggles to meet energy efficiency goals in the face of unbridled economic growth.

China's ability to meet its energy saving targets was crucial to ensuring Beijing's credibility and fulfilling the country's responsibilities on the world stage, the statement said. The government needed to conduct further studies on policies related to climate change, it added.

#### **79. China Environment Chief Says Pollution Fuelling Unrest**

Chinese anger with worsening pollution is fuelling increasing protests, the nation's top environmental official said, criticizing local governments who he said protected factories turning rivers into "sticky glue". Chief of the State Environmental Protection Administration (SEPA), Zhou Shengxian, said discontent with pollution "has resulted in a rising number of 'mass incidents'" -- an official euphemism for riots, protests and collective petitions -- the official Xinhua news agency reported. Speaking to officials, Zhou did not give overall numbers for such acts but said SEPA had received 1,814 citizen petitions in the first five months of this year demanding an improved environment, an 8 percent rise on the same period of 2006, Xinhua reported.

The government has been struggling to curb pollution from the factories, mines and industrial plants that have driven frantic growth. China has promised to cut emissions of major pollutants by 10 percent between 2006 and 2010, but last year the country failed to meet the annual target.

Zhou lambasted local officials, eager to generate revenue and jobs, who have fended off pollution controls on local businesses. "In a considerable number of regions, the Party centre's and State Council's demands in environmental protection have not been implemented," he said. "Some businesses don't rest deep in the night when they have no scruples about dumping pollution in rivers."

A recent inspection of the Yellow, Yangtze and other major rivers and lakes found that about half the 75 waste water treatment plants checked either under-performed or did not work at all, and 44 percent of 529 businesses checked violated environmental laws, Zhou said. In some places dumping was so bad that rivers have "turned into sticky glue", he added.

Despite official promises to clean up filthy air and water, China has recently been struck by a series of pollution spills that have drawn sharp criticism from domestic media.

State media reported recently that tap water had been restored to 200,000 residents of Shuyang County in the heavily industrialized province of Jiangsu after a spill of industrial chemicals stopped supplies for about 40 hours.

Another SEPA official said earlier that last year, 26 percent of the length of the country's seven main river systems had pollution of grade 5 or worse, making it unfit for human contact.

"Environmental protection offices and enforcement staff must stand up when the time demands," he said. "Dare to struggle against polluting behavior."

### **80. US's Paulson Highlights China Environment Efforts**

US Treasury Secretary Henry Paulson saw for himself efforts to reverse environmental degradation around China's largest inland lake, taking the spotlight off currency tensions for a day. "Climate change is a very important issue in this country, it's very important globally and it's very important in the US" Paulson told reporters during a visit to the Qinghai Lake, which is shrinking due to rising temperatures. "By coming here I call attention to what China is doing environmentally and reinforce what they're doing."

Paulson, a longtime environmentalist who chaired The Nature Conservancy, said he was impressed with a program funded by the central government to reclaim advancing desert areas near the lake by planting vegetation on sand dunes and former farmland.

He said Qinghai Lake and glaciers on the Tibetan plateau were important for the global climate because shrinkage of the lake and melting of the glaciers could permanently shift the jetstream, bringing severe weather to other continents. Likewise, carbon emissions elsewhere could hasten the lake's demise.

He said engagement on environmental issues was important to US President George W. Bush, who wants to draw China into a coalition of the world's top carbon-emitting countries to formulate a plan for reducing greenhouse gas emissions.

The tougher part of Paulson's China trip will follow in Beijing, where he will meet Vice Premier Wu Yi and Central Bank Governor Zhou Xiaochuan and President Hu Jintao.

He said he would again press for faster appreciation of the Yuan and other reforms, such as rebalancing China's economy away from exports and toward more domestic consumption and increasing foreign access to China's financial services sector.

Paulson's visit comes as US lawmakers, frustrated with slow progress in reducing US trade deficits with China, are advancing legislation aimed at pressuring Beijing to allow open markets to set the Yuan's value. The US Senate Finance Committee has passed a bill that would allow companies to seek anti-dumping duties against products from countries that have "fundamentally misaligned" currencies and eventually intervention by the Federal Reserve.

The China Daily said the currency bill smacks of strong protectionism and risks undermining bilateral efforts to reduce the trade imbalance between China and the United States. The measure would do little to cut the US trade deficit, the English-language daily said in an editorial. The United States should concentrate instead on persuading its citizens to consume less and save more. "Unfortunately, the new US bill tends to mislead its people into believing that protectionism can be an answer to its economic woes," the paper said.

Paulson said he was concerned about the currency legislation, saying it was the wrong approach, and he preferred achieving currency and economic reform through bilateral and multilateral dialogue.

But he understood the motivation behind it and frustrations among Americans about trade imbalances.

"I don't want China to become an increasingly big political issue in the US," he said.

### **81. Olympics To Use 50 Li-Ion Battery Powered Buses**

About 50 buses powered by Li-ion battery will be put into service for the Beijing Olympics next year, running a total distance of 10.4 kilometers for athletes and officials, according to a Beijing official. The buses will be used in three loop lines in the Olympic village, the northern area of arena and the press village, according to Zheng Jichun, deputy director of Beijing Municipal Science and Technology Commission.

On request of the organizing committee of the Beijing Olympics which was committed to a green Olympics, vehicles using electric power are needed during the games.

All the 50 buses are solely powered by a kind of Li-ion battery which is different from various of existing hybrid electric vehicles, according to Sun Fengchun, an electric car expert with Beijing Institute of Technology.

The institute launched the designing and research work of the electric bus in 2000 and so far a manufactory of Beijing Public Transports has assembled seven model buses which have passed tests.

The designer has determined the key parts of the bus and the manufacturer has been ready for mass production, according to Sun.

The organizing committee has also permitted the running routes and bus models, following electric vehicle's debut in 1972 Munich Olympics when BMW provided two electric buses as the leading cars in athlete parade.

The 50 electric buses in Beijing Olympics would be the largest number of its kind in the games, Sun said.

The Beijing Organizing Committee has allocated an area of 5,000 square meters of recharge station for the buses and a parking area in southwest Beijing, Sun added.

The Li-ion power battery is used in vehicles with a higher energy density, comparatively smaller cubage and longer span for repetitive use. Moreover, its high efficiency and zero emission have made itself a major subject of battery research and development at home and abroad.

However, frequent accidents caused by Li-ion battery occurred in recent years, especially the blast of Li-ion battery in a laptop computer last year aroused public attention on the battery's safety. Qi Lu, professor with Peking University, said the material of the Li-ion battery used in the Olympic buses is different and fully reliable for its safety.

Since 2001, two electric buses have been used in 121 route of Beijing bus for test operation and China's homemade electric buses were also operating in World University Games in 2001 to take athletes, coaches and audiences.

## **82. China 'Will Not Accept' Greenhouse Emissions Limits; Cites Insufficient Data**

On July 6<sup>th</sup>, a senior adviser to the Chinese government said that China would not accept binding greenhouse gas emissions limits under the Kyoto Protocol or subsequent climate change agreements, despite a new report which states that China has now passed the United States to become the world's biggest carbon dioxide emitter. Speaking to reporters after a meeting in Geneva between United Nations Secretary General Ban Ki-moon, officials from the U.N. Development Program (UNDP) and representatives from Chinese and international industry, Professor Zou Ji, senior policy adviser and negotiator for China on climate change issues, said China still lacked detailed information on national emissions which would allow it to determine an appropriate base for making reduction commitments.

Zou also questioned the utility of accepting binding reduction commitments, noting that many industrialized countries were missing their reduction targets under Kyoto and that China, as a developing country, would be hard-pressed to do better.

According to an estimate issued June 20 by the Netherlands Environmental Assessment Agency, an independent research institute, China's carbon dioxide emissions outpaced those of the United States by 8 percent in 2006, after trailing the United States by 2.5 percent in 2005. Zou said he was not completely convinced that the Dutch agency's estimates were accurate, but that the ranking was unimportant anyway since it was accepted that China would eventually pass the United States as the world's biggest emitter of greenhouse gases because of its huge population and rapid economic growth.

Regarding binding commitments, Zou said China still lacked the ability to provide an accurate estimate of national greenhouse gas emissions but that a survey has been launched to create a national emissions inventory. "Many people ask when China will be ready to make binding commitments," Zou noted. "That depends on our own capacity and the demonstration of the industrialized world [to meet their existing commitments]."

On capacity, Zou said Chinese authorities face the challenge of collecting information "from thousands and thousands of sources over a huge territory." He pointed out that the last comprehensive figures on emissions contained in a 2004 national communication dated from 1994. "We're now making an effort, together with UNDP, to measure the emissions levels in 2005," Zou added. "The final result will hopefully be revealed in 2009, maybe even later."

"So, if this is the case, what is the reliable basis for us to make quantitative and legally binding emissions targets?" he asked. "As an adviser, I suggest that my government does not set quantitative emissions targets at the moment because there is no reliable scientific and statistical basis. But certainly, gradually we'll become stronger in this regard, and maybe some years after, when we become more and more developed ... we can consider [binding emissions targets]."

Zou noted that China has taken a number of recent steps to reduce greenhouse gas emissions. He said that earlier this year the Chinese government banned the construction of new small-scale power plants (defined as those less with than 100 megawatts of capacity) because of their poor energy efficiency and launching a program to build a number of "green electricity" power plants that will result in China becoming the world's leading generator of such energy.

Zou also said the Chinese government was considering a carbon tax on gasoline to encourage more fuel-efficient cars. The idea is being studied by the Chinese Ministry of Finance, he said.

Khalid Malik, resident representative for UNDP in China, added that there had been a "lot of movement in the Chinese system the last few months" on the issue, citing the recent launch of a national climate change strategy on June 4 and the establishment of a high-level body in the State Council, chaired by Premier Wen Jiabao, on climate change.

In addition, the Chinese government has established "very stringent, hugely ambitious targets on energy efficiency which, among other things, calls for increasing the percentage of new and renewable energies from 2 percent of total consumption to 10 percent by 2010 and 17 percent by 2020.

The targets have been included in the performance evaluation of ministers and governors in the provinces, "so the pressure is enormous" on them, he said.

### **83. Vietnam Officially To Use Only Low Sulfur Diesel For Vehicles**



Vietnam's Trade Ministry has ordered oil product importers to sell only 0.05 percent sulfur diesel to road vehicles from July 1, but will still allow industrial use of 0.25 percent fuel, according to local media. The move to cleaner diesel by Asia's second largest motor fuel importer, which has trailed many Asian countries in moving towards European fuel standards, will mean extra demand for low sulfur grades in the region.

All 11 state importers will have to list the sulfur contents of diesel at pump stations and only sell the 0.25 percent grade to ships, trains and other industrial users, the Thuong Mai newspaper quoted Trade Minister Truong Dinh Tuyen as saying. He said retail prices of the 0.05 percent sulfur diesel would be VND200 higher than the 0.25 percent sulfur grade now being retailed by dominant oil product importer Petrolimex at VND8,700 (\$0.54) per liter.

The switch could marginally raise Vietnam's import costs by 3 percent until new refineries in India and China are started within three years, analysts say.

Vietnam only introduced 0.25 percent sulfur this year, instead of a proposed 0.05 percent for transport and 0.25 percent for industry from January, after state fuel importers objected to the earlier plan due to logistical difficulties in handling two different grades.

The drive to cut sulfur, a pollutant blamed for acid rain and lung problems, is part of government efforts to reduce worsening pollution, especially in cities. It leaves few countries in the region still using the 0.5 percent grade that serves as a benchmark diesel price in Asia.

Vietnamese state fuel importers are already on the hunt for cargoes of 0.05 percent sulfur content. Petrolimex, whose market share stands at around 55 percent, bought by tender 50,000 metric tons of the lower sulfur gas oil for end June to July.

Smaller rival Petec is seeking by tender 30,000 metric tons of 0.05 percent gas oil for next month, after buying its first cargo of this grade for early July ahead of the switch to cleaner fuel.

Rising demand from Vietnam, which imported more than 8 million tons of diesel last year, has coincided with a surge in buying from India's Hindustan Petroleum Corp., keen to shore up supplies during the monsoon when local demand is at a lull.

Regional demand is outstripping supplies in Asia as some cargoes are being shipped out to Chile and Europe due to stronger prices in those markets.

Reflecting the demand strength, price premiums for 0.05 percent grades rose to nearly \$2 a barrel from \$1 a barrel over the past month.

Vietnam could source the pricier cargoes from regular suppliers in Singapore, China and South Korea, while its economy, which grew 8.2 percent last year, as well as cuts in subsidies, will help absorb the extra costs, analysts say. The country relies almost entirely on oil product imports as it lacks major refineries despite being Southeast Asia's third-largest crude oil producer.

Moves to cut state subsidies on fuel products are underway. Vietnam's retail gasoline prices will increase by up to 7 percent this year, as the country recently allowed importers to set domestic rates. It plans to free diesel prices in early 2008.

#### **84. Air Pollution Fast Becoming An Issue In Booming Vietnam**

A decade ago, bicycles and three-wheeled pedal taxis rode quietly down the tree-lined streets of Vietnam's capital. Today, 1.8 million motorcycles and scooters buzz through Hanoi in a confused and unrelieved cacophony. As its economy surges forward, motorcycles have become the symbol of economic freedom in Vietnam. But they are also the main source, together with the growing number of cars, of worrying levels of air pollution, officials and experts say.

Hoping to avoid the "grow first, clean up later" pattern that most Asian countries have followed, Vietnam decided several years ago to tighten its lax vehicle emissions laws. But after numerous missed deadlines and sparring between government ministries, environmental groups now say air pollution in Vietnam could get worse before it gets better.

The air in Hanoi and Ho Chi Minh City contains dangerous levels of benzene and sulfur dioxide, experts say. Levels of one of the most dangerous pollutants, PM10, are moderate compared with other developing Asian cities but could worsen if Vietnam chooses to build coal-fired power plants to satiate demand for electricity, which is growing at double-digit annual rates.

Pham Duy Hien, an expert on pollution who is also an adviser to the Swiss-Vietnamese Clean Air Program, a government-linked environmental project, says Hanoi and Ho Chi Minh City have PM10 levels of about 80 micrograms per cubic meter, double the current level in Bangkok and well above the guideline of 20 set by the World Health Organization.

Beijing and New Delhi have dirtier air, with levels of 142 and 115, respectively.

At the heart of Vietnam's air pollution problem is dirty fuel, according to Hoang Hai Van, managing editor of the Thanh Nien newspaper, which recently published a series of groundbreaking articles on the topic. Van says the Vietnamese companies authorized to import fuel are resisting buying higher-quality fuel because it is more expensive.

"The point is that they don't want to import fuel of better quality because they don't want to see a fall in profits," Van said. The government is divided on the issue, Van and others say: the Ministry of Trade sees the fuel import business as a cash cow, while the Vehicle Registration and Inspection Agency says poor-quality fuel is negating any benefits of higher emissions standards.

In February, carmakers based in the country, represented by the Vietnam Automobile Manufacturers Association, sent a letter to the prime minister's office, complaining that newer engines would be damaged by the low-quality fuel.

"The issue of fuel quality will have to be addressed sooner or later but we can't do it all at once," said Dang Duong Binh, director of the environment section of the Hanoi Department of Natural Resources, Environment and Housing.

As of July 1, all gasoline stations in Vietnam were supposed to carry fuel compatible with Euro II standards, which were in place in the European Union until 2000 and limit levels of benzene, sulfur and microscopic dust, among other pollutants. The European Union now imposes significantly stricter regulations, known as Euro IV. Van says poor-quality fuel is still being sold. "In reality, diesel for vehicle use is not up to standards," he said.

Even the vehicle registration department does not seem to trust the quality of fuel sold at gasoline stations. To assure that new vehicles made in Vietnam meet the Euro II specifications, the inspection agency provides car and motorcycle manufacturers with a reserve of specially obtained clean fuel, according to Pham Quang Thanh of the Vehicle Registration and Inspection Agency.

The irony for Vietnam is that for several years, it has pumped higher-quality "sweet" crude oil offshore that could produce clean-burning fuel if refined properly, according to Hoang Viet Cuong, a technical consultant to the Swiss-Vietnamese Clean Air Program and a former employee of Petrolimex, the Vietnamese national oil company. But with no refineries of its own, Vietnam must send the crude abroad. "We have very high-quality sweet crude but then we import low-quality refined oil," Cuong said. Vietnam is building a refinery, but it will not come online until 2010.

Another problem is lax enforcement. Vehicle inspectors have a reputation for accepting bribes, vehicle owners and drivers say. The going rate for a passing grade is around 200,000 dong, or about \$12, they say. At an inspection station in the Phap Van neighborhood of Hanoi, Do Van Hoa, the head of the facility, says about 30 percent of vehicles do not even pass the existing emissions tests, which are well below Euro II standards and do not apply to motorcycles. But Hoa denies accepting bribes.

"It is not the case that we pass the vehicles if someone offers us money," Hoa said. "We have cameras," he added, pointing to the four corners of an inspection station reeking of car emissions.

Euro II regulations only apply to new vehicles, said Thanh, of the Vehicle Registration and Inspection Agency, and there is no plan to subject existing cars and motorcycles to more rigorous inspections. "You'll have to be patient and wait until they die out," Thanh said, referring to existing vehicles.

But there are also signs of rising awareness about air quality, environmentalists say, and they are encouraged that in a country where information is still tightly controlled, authorities allowed critical articles such as Van's series to be published. "People were recently outraged after 17 local brands of soy sauce were found to contain a carcinogenic chemical," Van wrote in an editorial. "They should, however, realize that fuels with high pollutant levels are worse than soy sauce since, no matter who uses the fuels, everyone breathes the same air."

## **85. Settlement of Tokyo Lawsuit Assigns Responsibility for Roadway Pollution**

On July 2<sup>nd</sup>, parties to a Tokyo air pollution lawsuit agreed to settle in accordance with the recommendations of a local court, which effectively means that the state, Tokyo municipality, a government road company, and automakers share responsibility for air pollution near urban thoroughfares and for related respiratory illnesses.

Junji Nishi, who represented the plaintiffs, visited the Tokyo High Court on the morning of July 2<sup>nd</sup> and handed to Justice Toshiaki Harada documents stating that the plaintiffs would accept the court-brokered damages proposal. Nishi later visited Prime Minister Shinzo Abe, asking for Abe's support to combat air pollution problems, a spokesman for the prime minister said.

According to the spokesman, Abe responded, "Eleven years have elapsed since the lawsuit began, and during those years, the plaintiffs were troubled with asthma and your families also experienced a lot of difficulties. I have long thought the lawsuit should be settled promptly."

The High Court's recommendation called for establishment of a medical cost assist program; implementation of air pollution prevention measures; and the payment by seven Japanese automakers ¥1.2 billion (\$9.7 million) in damages to the plaintiffs (slightly more than 2 million yen each, according to the plaintiff).

The automakers earlier agreed to pay up to ¥500 million, and the plaintiffs complained the sum was too little. The automakers are: Toyota Motor Corp.; Nissan Motor Co., Mitsubishi Motors Corp., Mazda Motor Corp., Nissan Diesel Co., Isuzu Motor Co., and Hino Motor Co. All manufacture diesel-powered commercial vehicles.

The automakers had resisted accepting the court-recommended settlement until the last minute, an auto industry source told the press on July 2, explaining that the companies were concerned about setting a precedent for similar lawsuits.

The medical cost assist program called for the state and Tokyo to contribute ¥6 billion.

All parties apart from the automakers' reached an agreement in June.

The settlement offer includes provisions for the following:

- construction of additional roadways, including the inner Tokyo beltway, the outer Tokyo ring expressway, and the greater Tokyo ring expressway spanning Tokyo and surrounding prefectures;
- modernization of inner Tokyo artery crossings and the widening of major Tokyo roads to reduce traffic congestion;
- reduction of tolls on the Tokyo Bay crossing expressway, the greater Tokyo ring expressway, and other expressways; and
- payment of ¥6 billion to the plaintiffs from the governmental medical expenses assist system and free lending of respiratory support devices to respiratory ailment patients.

Tokyo, which earlier pledged to pay ¥20 billion in medical care costs over five years, has now pledged an additional ¥5 billion on environmental cleanup measures, including the planting of trees along major roads and the widening of sidewalks.

#### **86. Nissan Develops Catalyst to Halve Precious Metal Use**

Nissan Motor Co. has announced that it has developed a catalyst for gasoline cars that halves the use of precious metal components to clean tail-pipe emissions, promising big cost savings amid high commodity prices. Japan's third-biggest automaker employed nano-technology to prevent clustering of the fine metal particles present in catalysts under high temperature conditions, enabling the use of less material to clean exhaust emissions.

Automotive catalysts use a mix of platinum, rhodium and palladium to trigger a chemical reaction with polluting nitrogen oxide, carbon monoxide and hydrocarbons to create non-toxic compounds.

The technology, which will be shared with French partner Renault SA, will be introduced in a new vehicle slated for launch in the second half of the business year ending in March 2009, and expanded into other models, Nissan said in a statement.

Automakers have been hurt by rising commodity prices, booking bigger-than-expected raw material expenses for the latest quarter. Average platinum prices during April-June rose 9 percent from a year-earlier, rhodium jumped 24 percent and palladium climbed 6 percent, according to Platinum Today.

#### **87. South Korea May Bring Forward 5 Pct Biodiesel Rule**

South Korea may bring forward its plan to raise biodiesel content in domestic diesel to 5 percent from the current 0.5 percent as early as 2008, a source with the state-run Korea National Oil Corp (KNOC) announced. South Korea decreed last year that all domestic diesel must have at

least 0.5 percent biodiesel content in an effort to use cleaner fuel and ease its reliance on imported oil. "The regulation to raise the ratio by 2010 may be implemented as early as next year if refiners do not make major objections," reportedly said the source close to domestic biodiesel projects.

The government was initially set last year to impose a mandatory 5 percent blend, in line with the level targeted by the European Union by 2010, but the country's powerful refining lobby opposed the move, forcing it to push back the target.

KNOC works closely with Seoul's Ministry of Commerce, Industry and Energy on setting national fuel policies.

Nearly 100 percent of raw materials for biodiesel are imported mainly from South America and Southeast Asia. Earlier this year, the government allocated 2.6 billion won (US\$2.83 million) for plantation of rapeseed production as part of its effort to cut dependency on foreign raw materials.

## **88. India Plans Global Warming Roadmap by Year-End**

India has taken the first step towards developing a national plan to tackle the effects of global warming and assess its own greenhouse gas emissions, amid mounting international pressure. Prime Minister Manmohan Singh's Council on Climate Change held its first meeting in a bid to come up with a clear plan ahead of a key United Nations climate change meeting in Bali in December, but did not set any overall emissions targets.

Singh said given India's dependence on monsoon rains, Himalayan glacier-fed rivers and its long coastline, climate change would have a serious impact. He said the country was already focusing on energy sources capable of reducing emissions, such as hydro, nuclear and solar power, but more had to be done. "We must at the same time explore ways of new and greener ways of development," Singh, who chaired the meeting, told council members.

He called for a review of past efforts and plans for the future to be ready by November.

A strategy to deal with the melting of Himalayan glaciers, which feed many of Asia's major rivers and upon which India's food security depends, should be developed, he said.

Singh added that an afforestation program called "Green India" would be launched in August to replant 6 million ha (15 million acres) of degraded forests. He also said environmentally friendly strategies should be incorporated in all future development.

India, whose economy has grown by 8-9 percent a year in recent years, is one of the world's top polluters, contributing around 4 percent of global greenhouse gas emissions as its consumption of fossil fuels gathers pace.

But as a developing nation, India is not required to cut emissions -- said to be rising by between 2 and 3 percent a year -- under the Kyoto Protocol, despite mounting pressure from environmental groups and industrialized nations.

"India is now responding to the urgency of the situation," said Sunita Narain, council member and director of the New Delhi-based think-tank, the Centre for Science and Environment. "We

have never been very good at stating our position and it is the right time to articulate all the things that India is doing and plans to do to mitigate and adapt to global warming."

The new national plan will not include any overall emissions target -- the country says it must use more energy to lift its population from poverty and that its per-capita emissions are a fraction of those in rich states that have burnt fossil fuels unhindered since the Industrial Revolution. Instead the 21-member council, which includes ministers, environmentalists, industrialists and journalists, is likely to consider ways to increase energy efficiency without undermining growth and bolster the contribution of renewable energy sources.

It will also ponder ways to combat the effects of global warming, which threatens the livelihoods of hundreds of millions of people on the Indian subcontinent -- potentially one of the most seriously affected regions in the world. "Different ministries like environment and industry and agriculture have all been working separately on climate change so it has been difficult to communicate and coordinate one single policy on the issue," said a senior environment official. "This council will help us to reach a consensus which suits all sectors and is in the best interests of India."

Receding Himalayan glaciers could jeopardize water supplies for hundreds of millions of people and rising sea levels menace Indian cities like Mumbai and Kolkata, as well as neighboring Bangladesh, scientists warn. Floods and droughts could become more common, diseases more rampant and crop yields lower as temperatures rise, they say.

December's UN-hosted meeting will be the first step towards formulating a successor to the Kyoto plan, which lapses in 2012.

China unveiled its own national plan for coping with global warming earlier this year and has promised to hold down per-capita emissions of greenhouse gases, but has also resisted calls for a mandatory cap on carbon dioxide emissions.

Here are five important facts on India and climate change.

- India is the world's fourth biggest greenhouse gas emitter and produces about 4 percent of global carbon dioxide emissions. The 1,884 million tons of carbon dioxide equivalent it emitted in 2000 rank after the US (6,928), China (4,938) and Russia (1,952).
- \* Emissions are said to be growing by 2 to 3 percent annually. Its 2000 emissions were 41 percent higher than its 1990 emissions, according to the World Resources Institute. The main contributor is the energy sector, which the government wants to grow significantly by 2012, to link up the half a billion people living without electricity.
- Per capita emissions are small. At around a ton per person per year in 1998, they were a quarter of the global average of 4 tons per year, and way below the US's 20 tons.
- India ratified the world's only global agreement on emissions reductions, the Kyoto Protocol, in August 2002. As a developing country it is not required to set the specific reductions targets required for developed countries.
- Rising temperatures could provoke more frequent floods and droughts, spur disease and increase water scarcity in India because of the disappearance of Himalayan glaciers. By 2030, glaciers could shrink from 500,000 sq km to 100,000 sq km if current rates of warming continue, the Intergovernmental Panel on Climate Change (IPCC) said in April.

## **89. Air Pollution Control Market In China Forecast To Grow Rapidly**

Bharat Book Bureau, a leading market information distributor has issued a report 'Air Pollution Control in China forecasts to 2010 & 2015'. Chinese demand for air pollution control products will rise nearly 18% annually through 2010 to 67.2 billion, driven by robust increases in investment to treat the ever growing problem of air pollution. China will lead the world in both air pollution control demand as well as air pollution emissions through 2010. Domestic manufacturers of air pollution control products will continue to increase capacities and remain key players in the market through 2010.

Particulate removal equipment and systems are forecast to remain the largest and fastest growing product. Demand for particulate removal equipment and systems will rise more than 20% yearly through 2010, with a significant growth in market share expected. The electrostatic precipitator segment will retain the largest market share, but baghouses will see the fastest growth.

Gaseous removal equipment and systems will grow 13.4% per year through 2010, driven primarily by demand from stationary sources, which will continue to account for the major market share through 2010. Demand from mobile sources will increase nearly 11% annually through 2010, primarily driven by Chinas rapidly rising stock of motor vehicles.

Among Chinas regions, the Northeast is projected to be the fastest growing air pollution control regional market, reflecting strong growth in the regions air pollution control expenditures. The Central-East, around the Yangtze River Delta, is the largest regional market, accounting for nearly 40 percent of total air pollution control demand, based on the regions developed manufacturing industries and large number of coal burning power plants. The second largest regional market -- the Central-South, around the Pearl River Delta -- consumed more than one-fifth of total demand in 2005. The Southwest and Northwest will remain the two most underdeveloped regions.

Air pollution control demand in utilities projects will post the largest gains of any market. Demand will be stimulated chiefly by increased electricity generation from coal burning power plants through 2010, which also account for the major share of the utilities market.

The manufacturing sector will remain the largest market for air pollution control products, with annual growth of 16.5% through 2010. This market will benefit from the strict emissions standards in manufacturing (such as the cement and steel industries). Demand will be further propelled by the Chinese central government's involvement, as the government emphasizes environment protection as an important part of its "Green GDP" campaign in the Eleventh Fifth-Year plan.

## **SOUTH AMERICA**

### **90. Brazilian Environmental Agency Splits Into Two Units**

On August 7<sup>th</sup>, Brazil's Senate passed a provisional measure (MPV 336) that splits IBAMA, Brazil's environmental enforcement agency, into two autonomous units, thus putting it permanently into effect. Although the measure went into effect provisionally when Vice President José de Alencar Gomes da Silva sent it to Congress in April, it needed to be passed by both houses of Congress to take effect permanently. The Chamber of Deputies (lower

house) passed the measure in June. It maintains IBAMA as an enforcement and licensing agency and establishes the Chico Mendes Institute, which will handle biodiversity conservation. Both units are under the aegis of the Environment Ministry. ASIBAMA, the IBAMA employee association, called a strike in May, saying the government's division of IBAMA would weaken its enforcement and licensing activities and give political leaders greater control over it. But ASIBAMA officials signed an agreement July 26 to end the strike.

### **91. Colombia Pilot Program Begun to Improve Air Quality**

On July 25<sup>th</sup>, the municipal government, the Ministry of the Environment, and the capital area's Regional Autonomous Corporation signed an agreement to begin a pilot program for measuring and improving air quality. The project is to monitor for four months the pollution to which 600 children age 5 and younger are exposed in the neighborhoods of Kennedy and Puente Aranda, two of the city's most polluted neighborhoods, as well as the sources of the pollution and the children's health. The results are to help develop the Air Quality Information System (SISAIRE), analyze the kinds of particles in the air, develop an inventory of emissions types, study the relationship between pollution and health, and develop regulations to combat pollution better, particularly improving the quality of vehicle fuels. The gasoline and diesel sold in Colombia have some of the highest sulfur contents in the world. The government will invest about \$6 million in the program during 2007, an Environment Ministry statement said.

### **92. Argentina Upgrades Import Tax-Free Quota For Diesel Amid Shortage**

The Argentine government has increased the quota for non-taxed diesel imports, as the nation's refineries, operating at maximum capacity, struggle to meet demand amid government pump price controls. According to a resolution published in the Official Bulletin, the government has increased this year's import tax-free diesel quota from 800,000 cubic meters to 988,000 cubic meters.

The import tax break is supposed to be an incentive for private oil companies, although industry officials say domestic pump prices are so low that they lose money reselling imported diesel bought at world prices. But with refinery capacity nationwide reaching 99.3% in July, according to government statistics, imports are the last resort.

Pump prices have been more or less under government control since 2005, when President Nestor Kirchner called on Argentines to boycott the local unit of Royal Dutch Shell after the company raised prices in response to the rise in world oil prices. ExxonMobil's local unit, Esso, followed suit, but both companies dropped prices after government-aligned protesters marched on Shell stations, leading to a drop in sales.

Relations between the government and the nation's main fuel retailers, which also include Brazil's state-run Petrobras, and Spanish company Repsol YPF, have remained tense since Kirchner's boycott. Meanwhile, complaints from farmers of diesel shortages during key planting and harvest periods have become common.

In response, the government late last year dusted off a 1974 "Supply Law" that allows for fines, and the imprisonment of company executives, if fuel retailers fail to meet demand. To that end, government price controllers have inspected service stations and company headquarters, fining Shell and, more recently, seeking jail time for Shell executives. Shell says it is exceeding government supply requirements and that the government is discriminating against it.

Against this backdrop, local media have reported that Esso wants to sell its Argentine assets, a claim company officials will not confirm or deny.

### **93. Chile's New Environment Ministry To Consolidate Policymaking, Regulation**

Plans to consolidate Chile's environmental policymaking and enforcement powers into two newly created agencies will be presented to Parliament in 2008, Environment Minister Ana Lya Uriarte told reporters on June 28<sup>th</sup>. The plans, which still are being drafted and will be subject to public consultations, will call for the creation of an Environment Ministry to develop national environment policy and an Office for Environment Regulation to oversee enforcement. The existing National Environment Commission (CONAMA) will retain responsibility for implementing environmental policy.

Uriarte said the change would consolidate control over environment policy, which is now split between different government agencies. "A ministry is necessary to achieve better and more efficient coordination and control and to advance towards an integrated system of environmental control in place of the numerous sector-specific norms we have today," Uriarte said.

Under Chile's current model, described in the Basic Environment Law (No. 19,300, 1994), responsibilities for different parts of the environment are split between different agencies. For example, regional health services are responsible for monitoring atmospheric emissions, while water and waste regulators oversee effluent discharges.

The change is being driven in part by a series of environmental issues that have sparked public concern, most notably the ecological impact of a pulp plant built in Valdivia in 2005.

Before a bill is presented to Parliament, the government plans a four-month consultation period that will end in November.

Uriarte said the changes should usher in more sophisticated methods and technologies for monitoring and managing environmental impacts, and should enhance administrative powers to respond to environmental emergencies, to encourage better environmental behavior, and to enforce relevant regulations.

"The new Office for Environment Regulation must tackle both aspects: a very clear regime of norms and sanctions and the incentives to comply," she said.

## **MIDDLE EAST**

### **94. Severe Pollution Suspected At Tel Aviv Rail Station**

Tens of thousands of soldiers and civilians are exposed daily to severe air pollution at the Hashalom train station adjacent to the Azrieli Towers in Tel Aviv, the Ministry of the Environment fears. The ministry's concerns are due to the train station's closed structure over the Ayalon Highway, which is used by hundreds of thousands of vehicles daily and which emit multiple pollutants into the air. In addition, locomotives also emit air pollution, which is trapped within the building.

The Ministry of the Environment says it has received numerous complaints from soldiers and civilians worried about air pollution at the train station. The main pollutants are nitrogen oxide, carbon dioxide, and organic and inorganic particles.

The area of the Hashalom train station is also exposed to a long list of pollutants unconnected with transport. For example, across the street from the Azrieli Towers is an Israel Military Industries Ltd. (IMI) facility whose land has been severely contaminated by spills of hazardous materials over the years. There is concern that these spills have caused emissions, which have accumulated in closed structures. Air pollution has also been detected at the nearby IDF headquarters, which is surrounded by pollutants on every side.

The Ministry of the Environment has twice asked Israel Railways general manager Ofer Linchevski to conduct air quality tests at the Hashalom train station, but no answer has yet been received. The first request was in January and the second in a month ago. The manager of the ministry's Tel Aviv District said that in the absence of a permit from Israel Railways' management, the Ministry cannot conduct air pollution tests at the train station.

Israel Railways' permission is necessary because the test involves positioning detectors on the train platforms and connecting them to the electricity supply. The ministry told Israel Railways in its letters that the detectors would not disturb railway passengers or trains. Israel Railways management said in response that it was reviewing the request and would probably give a positive response.

## **95. Dan Bus Company Blows Smoke About Pollution Controls**

The sight of a Dan bus leaving behind a cloud of pollution will remain familiar to residents of the Dan region, despite the company's promises to the contrary. According to recently released company data, its fleet of 960 city buses will soon become significantly more environmentally friendly, reducing one of the main causes of air pollution in the region.

"We are in the process of decommissioning the Euro 0 and Euro 1 models, and bringing in the most advanced, least polluting Euro 4 models," Dan official Meir Bracha says. "Our intention is to decommission all the Euro 0 and Euro 1 models within two years, and every year we will be adding 100 Euro 4 model buses."

Meanwhile, however, 200 polluting Euro 2 buses will continue to operate next year, with catalytic converters reducing pollution via a chemical reaction. The converters will be installed at a cost of almost NIS 1 million.

Some 600 people die every year as a result of exposure to pollutants in the Dan region, one of Israel's most polluted areas. This month, according to Environmental Protection Ministry data, pollution exceeded permissible levels at the Central Bus Station nine times over. The average nitrogen dioxide levels in that area were found to be the highest in the Dan region.

Pollution levels remained high in the area even after Reading station made the move to natural gas.

According to environmental planning company Eshel's plan to counter pollution, public transportation causes 80 percent of the various types of particle pollution that penetrate the

respiratory system. Buses emit an average of 116 times more nitrogen oxide than private vehicles and 40 times more particle pollution.

The Environmental Protection Ministry issued an order six years ago to specific individuals in the Dan company, obligating Dan to continue to reduce pollution. However, up until last year, it did not meet its obligations. Two years ago, the ministry sued Dan in the Tel Aviv Magistrate's Court to force it to meet its pollution-reduction goals. Dan was fined NIS 200,000.

Bracha says the company will meet the goal it has been set of reducing particle pollution by 50 percent compared to 2004 (amounting to 14 tons of particle pollutants) within three years.

Shuli Nezer, head of air quality control at the Environmental Protection Ministry said the ministry supported installing converters, which "indeed significantly reduce pollution."

#### **96. Japanese, Korean Firms To Build Diesel Refinery In Egypt**

Japanese and South Korean firms have won a 1.8 billion-dollar contract to build a diesel oil refinery in Egypt to respond to rising car demand in the emerging economy, the Japanese company has announced. Japanese trading house Mitsui and Co. said it and South Korean construction firm GS Engineering & Construction Corp. will build the plant on the outskirts of Cairo. They will build the plant on behalf of the Egyptian Refining Company, which is 85 percent owned by Egyptian investment fund Citadel Capital and the remaining by a state-run oil company.

"With the prevalence of private cars due to (Egypt's) economic growth, there is a serious problem of a lack of diesel fuel," Mitsui said in a statement.

The Middle East's most populous country has clocked stable economic growth growing at around six percent a year.

The plant "will use the residue oil produced from an existing refinery and refine it into diesel fuel for domestic consumers," the statement said. The plant is expected to begin operation in mid-2011 and will produce 1.5 million tons of diesel per year, although it has capacity to produce up to 2.5 million, Mitsui said.

Mitsui, which has interests worldwide, said it was the largest order it has received in the Middle East.

#### **97. Iran Says Diesel Rationing Not On Agenda**

Diesel rationing is not on the government's agenda, announced government spokesman, Gholamhossein Elham. Speaking to reporters at his weekly press briefing, he however stated that experts are involved in studying plans to issue smart cards for diesel consumers, IRNA reported.

For the time being it is just a plan aimed at managing diesel consumption in Iran and preventing smuggling, Elham elaborated. He said that gasoline smart cards had checked smuggling and irregular consumption.

Iran, the world's second largest oil producer, started rationing petrol nationwide in late June, allocating 100 liters per month to each private car at 0.108 dollars per liter for normal and 0.151 dollars for premium. The quota for government-owned cars has been put at 300 liters per month and for taxis at 800.

## AFRICA

### 98. Zimbabwe: 'Air Pollution Major Social Challenge'

The impact of air pollution is one of the major environmental and social issues facing the country and the region, the Secretary for Environment and Tourism, Mrs. Margaret Sangarwe, has recently announced. Air pollution has contributed significantly to global warming that had triggered climate change, she said at a stakeholders' workshop to discuss air pollution in Harare. "Air pollution continues to have a negative impact on our health, ecosystems, biodiversity, crops, infrastructural materials and our cultural heritage.

The one-day workshop was organized by the Air Pollution Information Network for Africa.

The economic, political, environmental and social consequences of climate change, she said, were more pronounced with each new season. Besides the humanitarian consequences of climate change, its economic consequences were disastrous on the continent where agriculture accounts for 70 percent of employment and was the engine of most African economies.

Mrs. Sangarwe said the demand for economic and social development to meet the needs of Zimbabwe's growing population had brought with them new environmental challenges. "Industrialization and urbanization have increased the demand for energy," she said. Energy was essential to fuel industry and economic development, and was important for basic services such as domestic heating and lighting.

Fossil fuels such as coal, petroleum, and fuel wood emitted pollutants into the atmosphere, particularly greenhouse gases, notably carbon dioxide that contributed to global warming. In addition emissions from vehicles, bunker fuels within aircraft and ships were also contributing to air pollution and global warming worldwide.

Mrs. Sangarwe hailed APINA, which in partnership with the United Nations Environment Program and others organized the "Better Air Quality in the Sub-Saharan Cities 2006 conference." Ministers of environment from 30 countries met to deliberate on issues of air pollution in the region.

At this meeting the ministers discussed policy and strategic issues, institutional arrangements, capacity and implementation, public awareness, information and education as well as co-operation and partnerships required to tackle air pollution in the region.

They also resolved to lower sulfur levels in the fuel and to manage the quality of vehicles being imported into the region to control vehicular emissions.

Mrs. Sangarwe said since the meeting in July last year, Zimbabwe, Mozambique and Malawi had also initiated discussions on the reduction of sulfur levels in both petrol and diesel, in

addition to restricting the age limit of imported second-hand vehicles. The three countries had also introduced catalytic converters and harmonization standards with the support of the UNEP.

Mrs. Sangarwe said the Government was investing in developing clean biofuels, such as jatropha.

Government, she said, would remain resolute that the challenges emanating from air pollution could be overcome if preventive measures and collaborative strategies were put in place. "We are energized by your interest and participation in this multi-stakeholder platform to find collective solutions to the challenges brought about by air pollution and to influence national and regional policy formulation," she said.

Mrs. Sangarwe added that the Government was committed to ensuring environmentally sustainable social and economic development.

## **GENERAL**

### **99. And The Winner Is...Diesel?**

Ford India announced Wednesday that it is launching a diesel version of the Ford Fiesta, the latest in a string of similar announcements in the industry. "(This car) will dramatically change customers' perceptions about the traditional diesel vehicle. The car is designed to deliver responsive acceleration, outstanding fuel economy, and reduced emissions consistent with future norms," Scott McCormack, vice president of Ford India, said in a statement.

While environmentalists, consumers and politicians continued to discuss ethanol, hydrogen and electricity, the auto industry, it seems, had already decided and has been making plans for its short-term answer to the energy problem.

In the past month, several major car companies have announced that they are either beefing up their diesel-engine lines or partnering on technology to develop better diesel engines for both commercial trucks and cars. Some are even thinking diesel-electric hybrids.

Honda announced an Accord that will get 62.8 miles per gallon for the U.S. market by 2010. Peugeot announced earlier this month that it has a hybrid diesel-electric car in the works that should get about 70 mpg, according to reports.

Toyota has said that it will soon make an announcement concerning its much-anticipated collaboration on diesel technology with Isuzu.

DaimlerChrysler is partnering with Fiat to improve its diesel engines for light-duty commercial trucks, and then possibly move on to low-emission diesel vehicles for cars.

Audi has said it hopes its win with a diesel-powered race car at Le Mans, will help change the perception of diesel among consumers, especially in the U.S. where old diesel engines fell out of favor as emissions standards rose.

With an infrastructure already in place due to commercial trucks never leaving the diesel fold, diesel seems to many to be an obvious solution to help fulfill automakers' immediate needs.

Today's diesel engines and diesel fuel itself have come a long way. Advances in turbocharging and fuel injection have boosted performance. New kinds of particle traps and low sulfur diesel fuel have reduced the emissions and soot-producing byproducts.

Whether car companies will be able to overcome the association with diesel as the sooty diesel engine trucks and cars of the 1970s and 1980s is another matter.

#### **100. New Battery Pack for Plug-in Retrofit from LTC Corporation**

Lithium Technology Corporation (LTC), a company that provides Li-ion systems for a range of sectors, including automotive and military, has retrofit a Toyota Prius to a plug-in hybrid using a battery pack based on LTC's new product line of large-format lithium iron phosphate (LiFePO<sub>4</sub>) cells. The largest cells of their kind, the 7 kWh battery pack comprising 63 of LTC's 3.2V, 35Ah iron phosphate cells, could support fuel economy of up to 125 miles per gallon.

The large-format technology allows the use of a significantly lower number of cells. This enables greater precision in monitoring of the cells by the battery management system (BMS) to keep cells in balance for best performance and preventing damage to the battery due to over-voltage, under-voltage, over-temperature and short-circuit, according to the company.

#### **101. Study Blames Climate Change for Rise in Hurricanes**

The number of Atlantic hurricanes in an average season has doubled in the last century due in part to warmer seas and changing wind patterns caused by global warming, according to a new study. Hurricane researchers have debated for years whether climate change caused by greenhouse gases from cars, factories and other human activity is resulting in more, and more intense, tropical storms and hurricanes. The new study, published online in Philosophical Transactions of the Royal Society of London, said the increased numbers of tropical storms and hurricanes in the last 100 years is closely related to a 1.3-degree Fahrenheit rise in sea surface temperatures.

The influential UN Intergovernmental Panel on Climate Change, in a report this year warning that humans contribute to global warming, said it was "more likely than not" that people also contribute to a trend of increasingly intense hurricanes.

In the new study, conducted by Greg Holland of the National Center for Atmospheric Research and Peter Webster of Georgia Institute of Technology, researchers found three periods since 1900 when the average number of Atlantic tropical storms and hurricanes increased sharply, and then leveled off and remained steady.

From 1900 to 1930, Atlantic hurricane seasons saw six storms on average, with four hurricanes and two tropical storms. From 1930 to 1940, the annual average rose to ten, including five hurricanes. From 1995 to 2005, the average rose to 15, with eight hurricanes and seven tropical storms, the researchers said.

Changes in sea surface temperatures occurred before the periods of increased cyclones, with a rise of 0.7 degrees Fahrenheit before the 1930 period and a similar increase before the 1995 period, they said. "These numbers are a strong indication that climate change is a major factor in the increasing number of Atlantic hurricanes," Holland said in a statement.

Skeptics say hurricane data from the early decades of the 20th century are not reliable because cyclones likely formed and died in mid-ocean, where no one knew they existed. More reliable data became available in 1944 when researchers had airplane observations, and from 1970 when satellites came into use. But Holland and Webster said the improved data from the last half of the century cannot be solely responsible for the increase. "We are led to the confident conclusion that the recent upsurge in the tropical cyclone frequency is due in part to greenhouse warming, and this is most likely the dominant effect," the authors wrote.

In 2004, four powerful hurricanes, Charley, Frances, Ivan and Jeanne, hit Florida. All four placed in the top ten costliest storms in US history. The record-shattering 2005 season produced 28 storms, 15 of which became hurricanes including Katrina, which caused \$80 billion damage and killed 1,500 people. The 2006 season was relatively mild, with ten storms.

## **102. Toyota Unveils Plug-In Hybrid, to Test on Roads**

Toyota Motor Corp. has unveiled a "plug-in" hybrid car based on its popular Prius model, saying it would test the fuel-saving vehicle on public roads -- a first for the industry. But the world's biggest automaker said the car, called the Toyota Plug-in HV, was not fit for commercialization since it uses low-energy nickel-metal hydride batteries instead of lithium-ion batteries believed to be a better fit for rechargeable plug-in cars.

Unlike earlier gasoline-electric hybrids, which run on a parallel system twinning battery power and a combustion engine, plug-in cars are designed to enable short trips powered entirely by the electric motor, using a battery that can be charged through an electric socket at home.

Many environmental advocates see them as the best available technology to reduce gasoline consumption and global-warming greenhouse gas emissions, but engineers say battery technology is still insufficient to store enough energy for long-distance travel.

"It's difficult to say when plug-in hybrids could be commercialized, since it would depend largely on advances in battery technology," said Executive Vice President Masatami Takimoto, in charge of Toyota's powertrain technology, told a news conference. The Toyota Plug-in HV, which is due to be tested also in the United States and Europe, has a cruising range of just 13 km (8 miles) on one charge, even with its tuneful of batteries.

Detroit's General Motors Corp. and Ford Motor Co. are also working on plug-in hybrids, with cooperation from battery makers such as Germany's Continental AG. GM in January showed a concept version of the plug-in Chevrolet Volt that would be powered by a lithium-ion battery. It has set 2010 as a target for production. Ford this month partnered with No. 2 US electric utility Southern California Edison for real-world testing of a fleet of up to 20 rechargeable vehicles to be based on the Escape Hybrid SUV. Ford has said plug-ins could enter showrooms in five to 10 years.

Toyota, which launched the world's first mass-volume gasoline-electric hybrid car, the Prius, in 1997, said it would test eight prototypes of the plug-in hybrid to gather data on real-life driving over the next three years after gaining government approval.

Many automakers including Toyota, Nissan Motor Co. and Mitsubishi Motors Corp., are working with Japanese battery makers to develop next-generation lithium-ion batteries with improved capacity to store energy.

### **103. New Study Says Ozone Cuts Plant Growth, Spurs Global Warming**

The affects of greenhouse gas ozone, which has been increasing near Earth's surface since 1850, could seriously cut into crop yields and spur global warming this century, scientists reported in a new study. Ozone in the troposphere -- the lowest level of the atmosphere -- damages plants and affects their ability to absorb carbon dioxide, another global warming gas whose release into the atmosphere accelerates climate change, the researchers wrote in the journal Nature.

While carbon dioxide is blamed for global warming, it also has a beneficial effect on plant growth, and ozone counteracts this effect, said Stephen Sitch, a climate researcher at Britain's Met Office, which deals with meteorology. "As CO<sub>2</sub> (carbon dioxide) increases in the atmosphere, that stimulates plant growth," Sitch said by telephone. He noted that many scientific simulations that predict the impact of global warming have included this effect but "they haven't included the other effect, the negative effect of ozone damaging productivity."

Plants and soil currently slow down global warming by storing about a quarter of human carbon dioxide emissions, but that could change if near-surface ozone increases, the researchers said. Projections of this rise in ozone "could lead to significant reductions in regional plant production and crop yields," they said in a statement.

Carbon dioxide's fertilizing effect can be powerful, Sitch and his colleagues reported, pushing global plant productivity by 88.4 billion tons (tons) a year. This figure does not take into account the depressing effect of ozone; with that factored in, the fertilizing power of carbon dioxide is 58.4 billion tons, the scientists wrote.

Without accounting for increased ozone, earlier simulations have underestimated the amount of carbon dioxide that will remain in the atmosphere, Sitch said. Ozone's damaging effect on plants means they will suck up less carbon dioxide from the atmosphere, leaving more of this chemical to contribute to greenhouse warming, he said.

"Carbon dioxide is the largest greenhouse warming gas but ... (ozone) is reducing plant productivity by an appreciable amount," Sitch said. Ozone has doubled since the mid-19th century due to chemical emissions from vehicles, industrial processes and the burning of forests, the British climate researchers wrote. Carbon dioxide has also risen over that period.

Tropospheric ozone is different from stratospheric ozone, which contributes to a protective layer high above Earth's surface that guards against harmful solar radiation.

### **104. Toyota Planning Dedicated Hybrid for Lexus - Paper**

Toyota Motor Corp. is planning to launch in 2009 the first dedicated hybrid model for its Lexus luxury line, Automotive News reported on its website. Citing Lexus UK Director Steve Settle, the industry journal said the model was expected to be priced between the 30,000 euro (US\$40,310) IS sedan and the 51,000 euro (US\$68,520) RX400h hybrid sport utility vehicle, making it the cheapest hybrid under the Lexus brand, it said.

The gasoline-electric powertrain is available on three Lexus products, and the hybrid derivatives account for more than 70 percent of the brand's sales in the UK, Lexus' biggest market in Europe, it said.

Settle said the new Lexus hybrid would be sold in Japan and Europe, but was not certain about a launch in North America, according to Automotive News.

Earlier this week, the Nikkei business daily reported that Toyota was planning another dedicated hybrid car by 2009 following the international success of the Prius. The world's biggest automaker has said it wants to double the number of hybrid models it offers from the current seven to help it reach a goal of selling 1 million units of the fuel-efficient vehicles annually soon after 2010.

### **105. Air Pollution Linked To Early Death**

Even comparatively low levels of air pollution boost the chances of an early death, suggests research published ahead of print in *Thorax*. The researchers base their findings on long term monitoring of air quality in different electoral wards around Britain during different time periods, and national data on causes of death.

More than 5000 adults aged 30 and above were included in the study.

To assess more closely the impact of pollution on health, they divided the data into four chunks, spanning a total of 16 years each, starting in 1966-70 and ending in 1994-8.

Black smoke and sulfur dioxide were strongly linked to the chances of an early death, the findings showed.

But despite a fall in air pollutants over the study period, as measured by the air quality readings, the risk of an early death remained, even at the comparatively low levels of air pollutants during the most recent time frame.

This was especially true for deaths from respiratory illness. The risk of an early death from respiratory disease rose by almost 4% for every 10 ug/m<sup>3</sup> increase in black smoke, and by 13% for every 10 parts per billion increase in sulfur dioxide during 1982-98.

In 1994-8, the comparable figures were more than 19% and almost 22%, respectively.

The figures held true even after adjusting for factors known to increase the chances of an early death, including social deprivation.

Their findings confirm the enduring legacy of air pollution on health, say the authors. And they "point to continuing public health risks even at the relatively low levels of black smoke and sulfur dioxide that now occur."

### **106. Japan Introduces Hybrid Trains**

Japan is introducing hybrid trains, in the ongoing battle to ward off global warming. The first two-car diesel-electric hybrid train has been put into commercial service. Trains do not contribute to

global warming as much as cars and they are often perceived as impractical because it is awkward making the different parts work together, but the growing popularity in hybrid cars, such as the Toyota Prius, is generating interest in other hybrid modes of transport.



The new train has a diesel engine, two electric motors underneath each car and lithium ion batteries on the roof. The train runs on its batteries until it encounters a hill or the batteries begin to run out and then the diesel engine kicks in.

One of the main obstacles with hybrid trains is the costs involved. The Kiha E200 train, which increases fuel efficiency by 20 per cent and decreases carbon emissions by as much as 60 per cent, cost almost \$1.7 million, double the price of a standard train. As

the technology develops and more people use hybrid trains it is hoped that the price will come down.

### **107. Ultrafine Particles Linked To Heart Disease**

People with high cholesterol are especially vulnerable to heart disease when they are exposed to diesel exhaust and other ultra-fine particles that are common pollutants in urban air, according to a new study. "Their combination creates a dangerous synergy that wreaks cardiovascular havoc far beyond what's caused by the diesel or cholesterol alone," said Dr. André Nel, chief of nanomedicine at the David Geffen School of Medicine at UCLA in U.S. and a researcher at UCLA's California NanoSystems Institute. He led a team of 10 scientists who conducted the study.

Although diet, smoking and other factors contribute to the risk of cardiovascular disease — the leading cause of death in the Western world — scientists have long believed that air pollution, particularly tiny pieces of soot from trucks and factories, plays a major role, too.

For years, scientists around the world have reported that on days when fine-particle pollution increases, deaths from lung diseases, heart attacks and strokes rise substantially.

The scientists say their study, conducted on human cells as well as on mice, is the first to explain how particulates in the air activate genes that can cause heart attacks or strokes. "Our results emphasize the importance of controlling air pollution as another tool for preventing cardiovascular disease," said Ke Wei Gong, a UCLA cardiology researcher.

### **108. Study Says Global Warming to Accelerate After 2009**

The global climate will steadily warm over the next century in response to increased emissions of greenhouse gases and aerosols, and at least half of the years between 2009 and 2015 will be hotter than 1998, the warmest year on record, according to a study published on August 9<sup>th</sup> in the journal *Science*.<sup>4</sup> The study, conducted by scientists at Great Britain's Met Office (weather

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<sup>4</sup> "Improved Surface Temperature Prediction for the Coming Decade from a Global Climate Model," was written by Doug Smith, Stephen Cusack, Andrew W. Colman, Chris K. Folland, Glen R. Harris, and James M. Murphy.

and climate change office), attempted to assess the extent of global warming over the next 10 years because that will be a time in which people can make plans to adapt.

"There is ... a particular interest in the coming decade, which represents a key planning horizon for infrastructure upgrades, insurance, energy policy, and business development," the study said.

The scientists found that during this period, climate change initially will be driven mostly by natural forces--including El Nino and variations in ocean temperature and currents--that will offset warming caused by human activities such as burning fossil fuels. As a result, they said, the next few years could see little overall warming. However, they said warming will begin in earnest after 2009, followed by a definite long-term warming trend over the next century caused primarily by human activities.

To conduct their analysis, the researchers used a new climate model that accounts for both natural phenomena and human activities. Previous models, they said, focused only on the latter.

The scientists checked the accuracy of their model by using a series of "hindcasts," or analyses that looked back in time to 1982, and comparing the model's predictions with what actually happened. They said the model predicted surface temperature more accurately than previous efforts, both globally and regionally.

### **109. Study Finds Pollution, Malnutrition Responsible for 40 Percent of Deaths**

Global increases in water, soil, and air pollution and in tobacco smoke and malnutrition are responsible for more than 40 percent of deaths worldwide, according to the author of a new Cornell University study. David Pimentel, professor of ecology and agricultural sciences at Cornell, led a team of 11 graduate students who, after reviewing more than 120 scientific papers, concluded that "global increases in air, water, and soil pollution exacerbate human exposure to environmental pollutants and malnutrition, resulting in an estimated 40 percent of the total human deaths each year."

In the article, "Ecology of Increasing Diseases: Population Growth and Environmental Degradation," Pimentel and his team assessed the relationship between increasing population and growing environmental degradation. They also examined the effects of both factors on current and future disease incidence throughout the world. The article "confirms" that 40 percent of global deaths result from diverse environmental factors, including chemical pollutants, tobacco smoke, and malnutrition. It said climate change appears to be creating an environment that is more hospitable to some diseases and making more crops susceptible to pests, which in turn could exacerbate food shortage and malnutrition that already exists.

At the current growth rate of 1.2 percent, the world population of 6.5 billion will double to 13 billion in the next 58 years, "thereby greatly intensifying pollution and disease problems" as demands rise for clean water, food, and sanitation, according to the article.

### **110. UN Says Climate Fight Must Be Won in Developing Nations**

More than two thirds of cuts in greenhouse gas emissions needed by 2030 to fight climate change will have to come from developing countries, according to the United Nation's climate change secretariat. By 2030 the world will need to spend hundreds of billions of dollars annually

to fight climate change, said the report on an "appropriate international response to climate change".

"It's not just a question of throwing more money at the problem," said the UN's climate change chief, Yvo de Boer. "(It's) incredibly important to put in place policies and measures that guide those investments in the right direction."

The report said emissions have to drop in the next 25 years to 2004 levels. Some 68 percent of emissions cuts must take place in developing countries, it added.

The fight against global warming has two parts, curbing the greenhouse gas emissions which are causing the problem, and preparing for climate change that is now unavoidable. Curbing greenhouse gas emissions alone will cost some \$210 billion annually by 2030, through measures such as investing in energy efficiency and low-carbon renewable energy, the report said.

"To meet the main part of this goal of returning emissions to 2004 (levels) by 2030, you don't mainly need extra money but a shift in investments away from building new power generating capacity towards improving energy efficiency," said de Boer.

Adapting to climate change was more difficult to estimate, but would run into several tens of billions of dollars annually by 2030.

Emissions of the commonest greenhouse gas carbon dioxide are rising in large part because developing countries like China and India are fuelling rapid economic growth by burning coal. China will likely overtake the United States as the world's biggest carbon emitter this year, if it hasn't already done so, analysts say.

The answer is both foreign aid for the world's poorest nations, and domestic action such as eliminating policies which favor fossil fuels over renewable energy, the UN report said.

Another solution was carbon trading, whereby rich countries meet domestic emissions goals by buying carbon offsets from developing nations. "It's a question of putting in place smart policies ... including, very significantly, the carbon market," said Yvo de Boer, who is head of the UN body which administers carbon trading under the Kyoto Protocol.

The UN report estimated carbon trading could deliver between 400 million and 6 billion tons annual greenhouse gas emissions cuts, in carbon dioxide equivalent, by 2030. At present Germany has an annual emission of 1 billion tons.

### **111. Residential Exposure to Traffic Is Associated With Coronary Atherosclerosis.**

Long-term exposure to fine-particulate-matter (PM2.5) air pollution may accelerate the development and progression of atherosclerosis according to a new study. Researchers<sup>5</sup>

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<sup>5</sup> Hoffmann B, Moebus S, Möhlenkamp S, Stang A, Lehmann N, Dragano N, Schmermund A, Memmesheimer M, Mann K, Erbel R, Jöckel KH; for the Heinz Nixdorf Recall Study Investigative Group, Institute for Medical Informatics, Biometry and Epidemiology.

investigated the associations of long-term residential exposure to traffic and fine particulate matter with the degree of coronary atherosclerosis.

**METHODS AND RESULTS:** They used baseline data on 4494 participants (age 45 to 74 years) from the German Heinz Nixdorf Recall Study, a population-based, prospective cohort study that started in 2000. To assess exposure differences, distances between residences and major roads were calculated, and annual fine particulate matter concentrations, derived from a small-scale dispersion model, were assigned to each address. The main outcome was coronary artery calcification (CAC) assessed by electron-beam computed tomography. They evaluated the association between air pollution and CAC with logistic and linear regression analyses, controlling for individual level risk factors of coronary atherosclerosis. Compared with participants living >200 m away from a major road, participants living within 50, 51 to 100, and 101 to 200 m had odds ratios of 1.63 (95% CI, 1.14 to 2.33), 1.34 (95% CI, 1.00 to 1.79), and 1.08 (95% CI, 0.85 to 1.39), respectively, for a high CAC (CAC above the age- and gender-specific 75th percentile). A reduction in the distance between the residence and a major road by half was associated with a 7.0% (95% CI, 0.1 to 14.4) higher CAC. Fine particulate matter exposure was associated with CAC only in subjects who had not been working full-time for at least 5 years.

**CONCLUSIONS:** Long-term residential exposure to high traffic is associated with the degree of coronary atherosclerosis.

## **112.Cause-Specific Mortality Higher in the Unionized U.S. Trucking Industry**

**Background:** Occupational and population-based studies have related exposure to fine particulate air pollution, and specifically particulate matter from vehicle exhausts, to cardiovascular diseases and lung cancer.

**Objectives:** We<sup>6</sup> have established a large retrospective cohort to assess mortality in the unionized U.S. trucking industry. To provide insight into mortality patterns associated with job-specific exposures, we examined rates of cause-specific mortality compared with the general U.S. population.

**Methods:** We used records from four national trucking companies to identify 54,319 male employees employed in 1985. Cause-specific mortality was assessed through 2000 using the National Death Index. Expected numbers of all and cause-specific deaths were calculated stratifying by race, 10-year age group, and calendar period using U.S. national reference rates. Standardized mortality ratios (SMRs) and 95% confidence intervals (CIs) were calculated for the entire cohort and by job title.

**Results:** As expected in a working population, we found a deficit in overall and all-cancer mortality, likely due to the healthy worker effect. In contrast, compared with the general U.S. population, we observed elevated rates for lung cancer, ischemic heart disease, and transport-related accidents. Lung cancer rates were elevated among all drivers (SMR = 1.10 ; 95% CI,

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<sup>6</sup> Francine Laden,<sup>1,2,3</sup> Jaime E. Hart,<sup>1,2</sup> Thomas J. Smith,<sup>2</sup> Mary E. Davis,<sup>2,4</sup> and Eric Garshick<sup>1,5</sup>, - 1Channing Laboratory, Brigham and Women's Hospital and Harvard Medical School, Boston, Massachusetts, USA; 2Exposure, Epidemiology and Risk Program, Department of Environmental Health, and 3Department of Epidemiology, Harvard School of Public Health, Boston, Massachusetts, USA; 4Department of Resource Economics and Policy, University of Maine, Orono, Maine, USA; 5Pulmonary and Critical Care Medicine Section, Medical Service, VA Boston Healthcare System, West Roxbury, Massachusetts, USA.

1.02–1.19) and dockworkers (SMR = 1.10 ; 95% CI, 0.94–1.30) ; ischemic heart disease was also elevated among these groups of workers [drivers, SMR = 1.49 (95% CI, 1.40–1.59) ; dockworkers, SMR = 1.32 (95% CI, 1.15–1.52) ], as well as among shop workers (SMR = 1.34 ; 95% CI, 1.05–1.72) .

**Conclusions:** In this detailed assessment of specific job categories in the U.S. trucking industry, we found an excess of mortality due to lung cancer and ischemic heart disease, particularly among drivers.

### **113. Air Pollution Reduces Lung Function in Children**

Children exposed to higher levels of air pollution show reduced lung growth and function that may affect them decades later, researchers in Mexico have concluded. Lead study author Dr. Isabelle Romieu of the Instituto Nacional de Salud Publico in Mexico said the early lung deficits may increase the risk of developing chronic obstructive lung disease later in life, as well as cardiovascular morbidity and general mortality.

The three-year study measured lung function growth in 3,170 8-year-old children at 39 schools in Mexico City and analyzed the data with respect to exposure to common urban pollutants: ozone, nitrogen dioxide and particulate matter.

The researchers also conducted personal exposure assessments on 60 randomly selected children in the study to ensure that the air monitoring station data was an accurate representation of individual exposure.

The findings, published in the American Journal of Respiratory and Critical Care Medicine, found that higher exposure to ozone, nitrogen dioxide and particulate matter was significantly associated with lung growth deficits.

The researchers couldn't identify specific sources of the pollutants but it is likely due to vehicular exhaust, the study said.