



Newsletter

May - June 2005

INTERNATIONAL REGULATORY DEVELOPMENTS

Table of Contents

EUROPE	2
Member States breach EU Particle Limit	2
German Particulate Filter Incentives	2
Germany plans Labelling Scheme for Low-Particle Vehicles	2
German Court Ruling orders cut in Fine-Particle Pollution	2
Swiss choose Incentives for DPFs instead of Particle Number Limit	2
Norway's "most costly" Air Pollutants are Particles	3
Austria plans Subsidy to cut Industrial Fine-Particle Emissions	3
French Long-Term Study finds Serious Health Effects from Air Pollution	3
UK Air Quality Expert Group Report on Particle Pollution	3
Italy offers Incentives for Euro 2 Scooters	3
European Poll says that Environment is as important as the Economy	4
Ozone in Europe – Summer 2004	4
Transboundary Air-Pollution Protocol takes effect	4
Biodiesel and DPF-equipped Diesel Cars	4
Sweden and Spain ask for higher Ethanol Content in Petrol	4
Report on Potential of Aftertreatment for Large Combustion Plants	5
NORTH AMERICA	5
State of Washington adopting California Emission standards	5
US EPA Signs Final Rule on In-Use Diesel Engine Testing	5
Urea-SCR Retrofit for New York City	5
US Funding for School Bus Retrofits	5
New Jersey Diesel Retrofit Legislation	5
Proposal for new Federal Incentive Programme for Diesel Retrofits	6
EPA Clean Diesel Campaign funds Non-Road Projects	6
Senate Committee agrees Safety Review for Catalysts on Small Engines	6
Scientists urge EPA to strengthen US Air Quality Standards for PM	6
EPA Proposal on Emissions from Stationary Diesel Engines	6
5900 Deaths per Year linked to Air Pollution in Canada	7
Three Studies link Daily Ozone Levels to Mortality Rates	7
EPA shifts date for transition to Ultra-Low Sulfur Diesel Fuel	7
US EPA upholds Reformulated Gasoline Oxygenate requirements	8
New York proposes adopting California Greenhouse Gas Emission Standards	8
Mercedes-Benz Diesel Concept Car	8
SOUTH AMERICA	8
SAE Fuels & Lubes 2005 Conference	8
ASIA-PACIFIC	8
South Korea increases Diesel Fuel Tax to Reduce Pollution	8
Asia Moving To Low-Sulfur Fuels	8
Manganese Fuel Additive use to be eliminated in India	9
AFRICA	9
South Africa moving to 500ppm Sulfur Diesel	9
GENERAL	9
EU-China Consensus on Environment	9
EU Leaders support Calls for UN World Environment Organisation	9
US makes Clean Diesel Technology Development a Priority with the EU	9
New Rules on Ship Emissions enter force	9
Environment & Energy Awards	9
UN Environmental Accords Signed by Mayors from 50 Cities Worldwide	9
FORTHCOMING CONFERENCES	10

EUROPE

Member States breach EU Particle Limit

The UK, Germany and Italy have now all breached the European Union fine-particle pollution standards which came into force only in January 2005.

These allow the PM₁₀ (all particles below 10µm) limit of 50µg/m³ to be exceeded on no more than 35 days per year.

German Particulate Filter Incentives

The German Cabinet has approved a draft law providing tax incentives for buyers of new diesel cars fitted with particle filters and for retrofitting old vehicles. However, the opposition-controlled Bundesrat – the upper house of the German Parliament, made up of representatives of the German states – has so far rejected the proposal, arguing that it should only apply to old vehicles.

The government proposal would have offered, for 2 years starting in January 2006, a tax incentive of €350 for new diesel cars meeting 5mg/km PM and €250 for retrofitting filters on older cars. From 2008 there would be a 20% vehicle tax surcharge on new diesel cars not meeting the limit. The Bundesrat were believed to be concerned over the loss of tax revenues to the German states and believed that new vehicles did not need the incentives. Greenpeace Germany had strongly criticised the proposal saying that the maximum of €350 incentives would encourage only inferior filters so failing to cut emissions significantly, and that the incentives for new vehicles represent simply a subsidy for the car industry. They called instead for incentives of €1000, targeted at existing vehicles rather than new and for the EU-recommended emission threshold for incentives of 5mg/km to become a legal limit from 2008.

Germany plans Labelling Scheme for Low-Particle Vehicles

Germany's Environment Ministry has released initial details of a law to introduce a national labelling system for cars and trucks with lower fine particle emissions. The ministry said that future traffic restrictions aimed at curbing particle pollution could then be applied to high-emission vehicles not eligible to carry the label. Several German cities are considering such restrictions.

If adopted, the marking will apply to trucks, passenger cars and light commercial motor vehicles. Vehicles with diesel engines will be put into 3 categories depending on their particle emissions. The groups with the highest emissions in each case would not receive a plaque. The better group would be sent a

yellow plaque and the best a green one. Vehicles with Otto engines will also receive a plaque, because they must be marked as particle-poor. It will be coloured to differentiate between those with a regulated catalyst (blue plaque) and those without a catalyst (black plaque). The Environment Ministry says that this colour-coding will also provide for precautions for the impact of nitrogen oxides on air quality from 2010.

German Court Ruling orders cut in Fine-Particle Pollution

The Deutsche Umwelthilfe-led campaign to force German cities to comply with Europe's fine-particle air quality standards has been reinvigorated after a court in Stuttgart ruled that Baden-Württemberg must do more to combat PM₁₀ pollution.

The campaign has involved test cases taking five German cities (Düsseldorf, Dortmund, Berlin, Munich and Stuttgart) to court to compel them to meet the standards. In Stuttgart the plaintiffs, backed by Deutsche Umwelthilfe, presented evidence that Stuttgart and three other cities in the state were already in breach of the 1999 EU air quality directive. The court agreed that Baden-Württemberg had not done enough to meet the EU limits. The ruling orders the state to draw up an action plan on PM₁₀. The Baden-Württemberg government will appeal. Deutsche Umwelthilfe urged the imposition of restrictions on diesel cars and trucks without particle filters.

Swiss choose Incentives for DPFs instead of Particle Number Limit

The Swiss Federal Council has given its opinion on the Parliamentary motion which would have introduced a mandatory limit on particle number emissions for diesel passenger cars. The Council rejected both measures proposed in the Parliamentary motion (i.e. mandatory limits and 'bonus-malus') but said that it is ready to implement incentives.

The Council examined two different measures to reduce the particulate emissions of private diesel cars: a "constraining measure" and an "inciting measure". The former would require all new private cars with diesel engines put into circulation in Switzerland from 1 January 2006 to meet a "severe limiting value" for the number of particles, in addition to the existing particulate mass limit. However, the European Union raised objections that this would represent a technical barrier to trade. The Federal Council concluded that if Switzerland went alone by introducing this constraining measure it would contravene its international agreements. The second option was the introduction of financial incentives. This is different

from the system of 'bonus-malus' mentioned in the Parliamentary motion as it would not supplement the constraining measure, but would replace it. It would allow the cantons to apply a differentiation of the cantonal taxes on motor vehicles, but has the disadvantage that fitment of particle filters would be on a voluntary basis only.

How and when this financial incentive should work in detail is now going to be discussed between the Swiss Federal Council and the Parliament.

Norway's "most costly" Air Pollutants are Particles

Calculation of the socio-economic costs of eleven atmospheric pollutants for the Norwegian Pollution Control Authority (SFT) shows PM10 particulates to be the most harmful at an estimated Nkr1600-5500 (€198-680) per kilo.

If Oslo alone were to cut particle emissions from traffic by 10%, the report says that society would save Nkr50-120m every year in reduced damage to health.

Austria plans Subsidy to cut Industrial Fine-Particle Emissions

Austria's Environment Ministry has announced subsidies of €7.5m over 18 months to help industrial installations cut fine particle emissions. The Ministry says that industry contributes 37% of particles compared with 19% from road vehicles. The government has already approved incentives (from 1 July 2005) for vehicle particle filters.

French Long-Term Study finds Serious Health Effects from Air Pollution

A new French report "Twenty Five Year Mortality and Air Pollution: Results from the French PAARC Survey" provides results on the long term effects of air pollution on mortality. 14284 adults living in 24 areas from 7 French cities enrolled in the survey in 1974. Daily measurements of sulfur dioxide, total suspended particles, black smoke, nitrogen dioxide and nitric oxide were made in each area for 3 years (1974-76).

Proportional hazards models controlling for individual confounders (smoking, educational level, body mass index, occupational exposure) were run before and after exclusion of six area monitors influenced by local traffic ($\text{NO}/\text{NO}_2 > 3$ in ppb). After exclusion of these areas, analyses showed that adjusted risk ratios for total suspended particulate, black smoke, NO_2 , and NO for non-accidental mortality were 1.05, 1.07, 1.14, and 1.11 for $10\mu\text{g}/\text{m}^3$ respectively. Consistent patterns for lung cancer and cardiopulmonary causes were observed. The authors concluded that urban air

pollution assessed in the 1970s was associated with increased mortality over 25 years in France.

UK Air Quality Expert Group Report on Particle Pollution

The UK Expert Group on Air Quality has issued its second report on Particulate Matter in the UK. The report was prepared for the Department of Environment, Food and Rural Affairs (Defra).

PM10 emissions in the UK have fallen from 1970 to 2001, with the fall dominated by reductions in emissions from domestic heating, energy production and from industrial combustion, largely as a result of a decrease in the use of coal as a fuel. Emissions are expected to fall by a further 28% by 2010, mainly from reductions in power station and road-transport emissions. However, emissions are expected to level off between 2010 and 2020. The report says, though, that the reduction may not be as great as this if the recent growth in the numbers of diesel cars on the road continues.

The report notes that the falls in PM10 levels recorded at all sites during the 1990s have stopped in recent years and at some sites the concentrations have even increased. The reasons for these changes are unclear but they may have been related to the atmospheric conditions, particularly during the hot summer of 2003.

In addition to the PM data, the report says that NOx emissions, which lead to nitrate formation, have fallen by 39% since 1990, largely due to improvements in engine design and to the fitting of three-way catalysts to petrol cars.

Italy offers Incentives for Euro 2 Scooters

Italy's Ministry of Environment and the Associazione Nazionale Ciclo Motociclo Accessori (ANCMA) have announced a 25 million euro initiative to encourage the use of environmentally friendly scooters.

Italy has around 12.4 million scooters in circulation, but only one in 10 meets Euro 2 emissions standards which came into force in 2004. Under the plan, buyers of new scooters with engines under 50cc and that meet Euro 2 standards will receive incentive payments of €250 from 1 May 2005. Those who bought Euro 2 scooters in the previous 12 months can apply for a similar rebate. The Scooter and Accessory Association will help to publicize the incentives and to certify that vehicles that claim to meet the environmental standards do so.

The initiative follows a similar one between the Lombardy region and the association which applies to scooters and motorcycles up to 255cc.

European Poll says that Environment is as important as the Economy

A Eurobarometer survey, updating a 2002 poll on attitudes to the environment and incorporating views in the ten new European Member States, finds that 85% of respondents want policy makers to consider environment policies as equal in importance to economic and social policies.

Environment Commissioner Stavros Dimas has hailed the findings as giving the EU a "clear mandate to continue working to deliver a high level of environmental protection". Friends of the Earth said the findings should make Commission President Barroso rethink his rhetoric of prioritising economic development.

Ozone in Europe – Summer 2004

The European Environment Agency (EEA) has now published its report on ground-level ozone in Europe during last summer.

The report concludes that there were widespread exceedances of the ozone information threshold ($180\mu\text{g}/\text{m}^3$) in southern Europe but these were similar to earlier years (except summer 2003). The directive's long-term health-protection objective of $120\mu\text{g}/\text{m}^3$ over 8 hours was exceeded in almost every country, in almost every summer month and at most of the stations. However, there were no long-lasting and spatially extensive episodes of high ozone concentrations like those that occurred during the extremely warm summer of 2003. The highest levels were reported from Italy and Spain, with a maximum ozone level of $417\mu\text{g}/\text{m}^3$.

The report notes that observed ozone trends are in general not statistically significant over the period 1996–2002, but the data suggest that the decreasing trend in peak values that was observed earlier has levelled off during recent years. Median concentrations show an increasing trend for all station types, although the increase is more pronounced for street and urban stations.

Transboundary Air-Pollution Protocol takes effect

The Protocol to Abate Acidification, Eutrophication and Ground-level Ozone to the Convention on Long-range Transboundary Air Pollution of the United Nations Economic Commission for Europe (UNECE) entered into force on 17 May 2005. It has so far been ratified by: the Czech Republic, Denmark, Finland, Germany, Latvia, Lithuania, Luxembourg, the Netherlands, Norway, Portugal, Romania, Slovakia,

Slovenia, Spain, Sweden, the United States and the European Community.

The Protocol aims to cut emissions of sulfur, nitrogen oxides (NOx), volatile organic compounds (VOCs) and ammonia from energy generation, industrial sources, motor vehicles, agriculture and products. By 2010, Europe's NOx emissions should be cut by 41% and VOC emissions by 40% compared to 1990 levels. The Protocol also sets limit values for specific emission sources (e.g. combustion plant, electricity production, cars and trucks) and requires best available techniques to be used to keep emissions down.

Calculations made during the Protocol's negotiations showed that, once all the targets are met, the number of days with excessive ozone levels will be halved.

Biodiesel and DPF-equipped Diesel Cars

A report from all4engineers.com says that biodiesel manufacturers are concerned that German car manufacturers are not allowing the use of 100% biodiesel in DPF-equipped cars. Biodiesel blends, however, are still acceptable.

Biodiesel has reportedly been disallowed due to concerns about increased oil film dilution during fuel post-injections used to increase the exhaust temperature during filter regeneration.

Sweden and Spain ask for higher Ethanol Content in Petrol

Sweden and Spain have told the European Commission that the European Union cannot achieve its target for transport biofuels without doubling the fuels directive limit for ethanol in petrol to 10%.

The European biofuels Directive sets a non-binding target for biofuels to make up 5.75% of petrol and diesel on an energy basis by 2010. Blending ethanol is the main biofuel option for petrol. Sweden and Spain say that the Fuels Directive ethanol limit of 5% by volume equates to only 3% on an energy basis. Swedish petrol already contains 5% ethanol. The European bioethanol fuel producers' group eBio points out that the current limit on petrol vapour pressure - intended to limit evaporative emissions - is also a problem because adding ethanol increases vapour pressure. Although ethanol can also be converted into ETBE (which can be used at up to 15% by volume and still meet volatility limits), the two countries say that direct blending is the only way to meet the Biofuels Directive goals.

The Commission is due to review the current European road fuel quality specifications by the end of this year and is already consulting stakeholders and expects to hold a second stakeholder conference after the summer break.

Report on Potential of Aftertreatment for Large Combustion Plants

A report for the European Commission by Entec has highlighted possible key elements for a forthcoming review of the European Directive from 2001 on emissions from large combustion plants (LCPs).

Examining the feasibility of including further emission reductions in the LCP review, the report says that aftertreatment technologies offer the possibility of bringing NO_x and PM emissions below the level required by the directive. Entec notes the potential of using market-based instruments to cut emissions of sulfur dioxide (SO₂) and nitrogen oxides (NO_x), reflecting growing Commission interest in such tools.

The report will form one input to the LCP Directive review, together with the new Thematic Strategy on Air Quality (CAFÉ) and a study into the feasibility of streamlining European industrial emissions policies.

NORTH AMERICA

State of Washington adopting California Emission standards

The Governor of Washington State has signed legislation adopting California exhaust emission standards for new cars and light trucks from the 2009 model year. Washington is also adopting California's pending rules on CO₂ and other greenhouse gases emissions from motor vehicles. California standards have been adopted by eight other states (including New York and most New England states) and are expected to be adopted in the state of Oregon.

US EPA Signs Final Rule on In-Use Diesel Engine Testing

The US Environmental Protection Agency (EPA) has signed a final rule implementing in-use testing requirements for heavy-duty diesel engines. Under the programme, manufacturers will measure gaseous and particulate exhaust emissions from diesel engines using portable emission measurement systems (PEMS) installed on the vehicle. The regulation will help to ensure that diesel emission standards are met under real-world driving conditions.

US diesel emission regulations include not-to-exceed (NTE) standards which in most cases are set at 1.25-1.5 times the respective emission limit. The NTE limits must be met under any engine operating conditions – steady-state or transient – within a predefined area on the engine map, without reference to any particular test cycle. It is expected that NTE testing requirements will be also adopted in future emission

standards in Europe and EPA has been sharing their NTE testing experience with the EU authorities through the United Nations' GRPE group.

Following a pilot programme starting this year, the US in-use testing will become mandatory in 2007 for highway engines. If non-complying engines are identified, the EPA will use the data to evaluate the need to pursue further actions. The data will also be available to the public. Tests will be conducted and paid for by manufacturers with EPA oversight.

Urea-SCR Retrofit for New York City

A NO_x reduction demonstration project retrofitting waste collection vehicles with urea- SCR systems has been started in New York City.

Six vehicles will be retrofitted with the SCR system. Vehicles selected include roll-off trucks, trash compactors and loaders at transfer stations. Emissions data will be collected from the vehicles and equipment over the coming year to monitor the performance of the technology under actual working conditions. From this data, air quality models will be constructed to quantify the potential benefits of using NO_x control technology on a local and regional level.

US Funding for School Bus Retrofits

The US EPA has announced the availability of approximately \$7.5 million of funding for retrofit and/or replacement projects that reduce pollution from school buses through verified emission control technologies. 20 to 30 awards will be made, with applicants expected to contribute a minimum of 5% of the total project cost. EPA anticipates that as a result approximately 4000 buses will be retrofitted, replaced, and/or will use cleaner fuels.

New Jersey Diesel Retrofit Legislation

The New Jersey Senate and Assembly have both passed legislation that requires the use of diesel retrofit controls on the 30000 diesel-powered public vehicles, including school buses, transit buses, and garbage trucks, operating in the state.

The legislation also contains stricter enforcement of anti-idling laws and requires the use of ultra-low sulfur (max. 15 ppm) diesel fuel by off-road diesel vehicles in 2007, more than three years ahead of federal requirements. The legislation allocates \$160 million of state funds over 10 years to help with the purchase of retrofit technologies such as oxidation catalysts, particulate filters, and crankcase filters. The legislation will now go before the New Jersey voters for approval in the November 2005 elections.

Proposal for new Federal Incentive Programme for Diesel Retrofits

A group of senators led by Senators George Voinovich and Hillary Clinton (D-NY) has announced legislation that would authorize a federal programme similar to California's Carl Moyer incentive programme to clean up diesel engines already on the road.

If approved, the 2005 Diesel Emissions Reduction Act will set up a loan-and-grant programme funded at \$200 million a year over five years for states and local organizations to encourage diesel engine retrofits in public and private fleets. The bill will contain strict criteria to ensure the money goes to the areas that need it the most, such as metropolitan regions needing help to achieve the new EPA standards for particulate matter.

EPA Clean Diesel Campaign funds Non-Road Projects

The US Environmental Protection Agency (EPA) has announced that under its National Clean Diesel Campaign it is accepting applications for projects to reduce emissions from non-road vehicles and equipment through the use of retrofit technologies. The project covers construction, agricultural, port-related and similar equipment. EPA expects to award 8-12 agreements, ranging from \$50000 to \$150000.

Senate Committee agrees Safety Review for Catalysts on Small Engines

The US Senate Appropriations Committee has passed a requirement proposed by Senator Kit Bond which will require EPA and other federal agencies such as the Consumer Product Safety Commission and the U.S. Fire Administration to conduct a safety review prior to approving new regulations aimed at reducing emissions from small engine equipment such as lawnmowers and chainsaws.

Senator Bond claimed that the study was vital to protect the safety of consumers and prevent accidental fires from use of catalytic converters in dry grass. EPA's proposal on new emission standards for small engines was targeted for release at the end of this year but will probably be delayed into 2006 if the review is included in the final bill.

Scientists urge EPA to strengthen US Air Quality Standards for PM

A coalition of 100 doctors, scientists, professors, and researchers are urging the US Environmental Protection Agency (EPA) to strengthen its fine particulate matter (PM_{2.5}) standard.

In a letter sent to EPA's Scientific Advisory Board, they contend that recent studies indicate that current PM_{2.5} standards do not adequately protect public health, especially of vulnerable populations like children and older people. They recommend strengthening the 24-hour fine particle standard to 25-35µg/m³ from the current level of 65µg/m³ and the annual fine particle standard to 12-14µg/m³ from the existing 15µg/m³. Under the Clean Air Act, EPA is required to review and revise standards for criteria pollutants every five years. The current fine PM standards were set in 1997. Under a consent decree with environmental groups, the EPA has until December 2005 to determine if these standards need revision with a final decision due in September 2006.

EPA Proposal on Emissions from Stationary Diesel Engines

On 29 June the US Environmental Protection Agency (EPA) issued proposed emission standards for stationary compression ignition engines. This will be EPA's first regulatory programme covering stationary diesel engines. Engines of this type are used to generate electricity and to drive pumps and compressors at power, chemical and manufacturing plants, and are used for emergency power, flood and fire control.

In nearly all cases the new standards will require these engines to comply with the same standards that apply to non-road mobile source diesel engines and will require the use of ultra-low sulfur diesel fuel (15 ppm S max.) from October 2010.

EPA estimates that the proposed rule would affect some 81500 new stationary diesel engines and reduce NO_x, hydrocarbon, carbon monoxide, particulate matter, and sulfur dioxide emissions by over 68000 tons in 2015. Estimated annual costs for the proposed rule are \$57 million in 2015.

The proposed rule contains the following provisions:

Engines less than 10 litres per cylinder:

- Engines built after 1 April 2006 but before the 2007 model year, would generally be required to show compliance with Tier 1 non-road emission standards.
- From 2007 model year, all new, modified, or reconstructed non-emergency stationary diesel engines of this size must meet the applicable non-road diesel engine emission standards (e.g., the EPA Tier 1, 2, 3, or 4 non-road emission standards that vary with model year and rated power).
- An exception to this is stationary engines >3000 hp. These would only need to comply with Tier 1 non-road standards until Tier 4 standards are required. (These phase in from 2011 and include significant reductions in PM and NO_x based on the use of

diesel particulate filters and NOx adsorbers or SCR. They also include Not-To-Exceed (NTE) limits).

- Emergency stationary engines would also be required to certify to applicable Tier 2 and 3 non-road diesel standards, but only to Tier 4 standards that do not require the use of any add-on emission control technology such as a DPF or a NOx-based catalyst.

Engines of 10 to 30 litres per cylinder:

- Engines built before the 2007 model year would have to meet a NOx emission limit of between 9.8 and 17.0 g/kW-hr depending on engine speed.
- From 2007 model year, emergency and non-emergency engines of this size must be certified to the emission standards required for new marine diesel engines with the same displacement and maximum engine power. These standards are generally achieved through engine controls and are not severe enough to require the use of particulate filters or NOx-based catalysts.
- Once EPA has proposed and finalized new tougher standards for diesel marine engines (a proposal expected in 2006), it will review the applicability of those standards to this size of stationary diesel engine.

Engines over 30 litres per cylinder:

- Owners and operators of these stationary diesel engines would be required to reduce NOx emissions by at least 90% or limit NOx emissions to 0.40 g/kW-hr. They would also have to reduce PM emissions by at least 60% or limit PM emissions to 0.12 g/kW-hr.

Other requirements

- Manufacturers of emergency stationary diesel fire pump engines would have to certify to emission standards starting in 2010 that are largely based on engine controls.
- All stationary diesel engines would require owners and operators to use 500 ppm S diesel fuel from 1 October 2007 and 15 ppm S max. (ultra-low sulfur diesel) fuel from 1 October 2010.
- Certification testing, emissions useful-life warranty requirements and averaging, banking and trading provisions would be the same as those for either non-road or marine diesel engines (for engines less than 30 litres/cylinder displacement).

The proposal does not include any regulations for stationary spark ignition engines. EPA has indicated that additional time will be needed to propose regulations for these engines. A fact sheet covering the stationary diesel engine proposal is available at:

http://www.epa.gov/ttn/oarpg/t3/fact_sheets/stadiesengine_prop_fs.html

5900 Deaths per Year linked to Air Pollution in Canada

Health Canada says it believes that the deaths of 5900 Canadians per year can be directly linked to air pollution. The estimate was generated using complex statistical models and data from air pollution and mortality studies in the Canadian cities of Quebec City, Montreal, Ottawa, Toronto, Hamilton (Ontario), Windsor (Ontario), Calgary (Alberta) and Vancouver. The new estimate considers short- and long-term health effects of air pollution and assumes a background level of air pollution. The department urged Canadians to reduce the potential impact of air pollution on their health by driving automobiles less often, heeding air pollution advisories and avoiding or reducing strenuous outdoor activities when smog levels are high.

Three Studies link Daily Ozone Levels to Mortality Rates

Three independent research reviews commissioned by the US Environmental Protection Agency and published in the July issue of *Epidemiology* draw consistent conclusions linking daily levels of ozone pollution to an increased risk of death.

All three papers were meta-analyses, or statistical reviews of previous research data. By combining results from many studies, important patterns can emerge that are not apparent in the individual studies. Although the researchers worked independently, using a broad range of studies and applying varying statistical methods, all studies had the same goal: to assess whether death rates increase on days with high levels of ozone pollution - and if so, how much.

Two of the studies found that for each 10ppb increase in daily ozone level, the total death rate for that day and the two following days increased by 0.87% and 0.86% respectively. The third suggested a smaller effect but confirmed that the main effect occurred during the warm summer months. This study showed the strongest relationship in Brisbane, Australia and Mexico City - both cities where ozone levels remain fairly constant around the year.

EPA shifts date for transition to Ultra-Low Sulfur Diesel Fuel

EPA has announced plans to facilitate the transition to ultra-low sulfur diesel (ULSD). They will issue a rule later this year that will shift the retail compliance date from 1 September 2006 to 15 October 2006 to allow more time for terminals and retail outlets to comply with the 15 ppm ULSD standard. During this extended transition period, diesel fuel meeting a 22ppm sulfur

level can be marketed as ULSD downstream. EPA says that this rule will not interfere with the planned introduction of clean diesel vehicles and engines anticipated in autumn 2006, nor will it reduce the environmental benefits that will be achieved by the 2007 Heavy-Duty Highway rule.

US EPA upholds Reformulated Gasoline Oxygenate requirements

Petitions from California, New York and Connecticut to waive the oxygen content requirement for reformulated gasoline have been rejected by EPA. Whilst agreeing with California's claim that a waiver would lead to a decrease in emissions that contribute to the formation of ozone and particulate matter (PM), EPA concluded that the overall impact on emissions is slight. EPA said that total volatile organic compounds (VOC) and nitrogen oxide (NOx) emissions are likely to decrease with a waiver, but carbon monoxide (CO) emissions are likely to increase.

New York proposes adopting California Greenhouse Gas Emission Standards

The Governor of New York has announced a proposal to require reductions in greenhouse gas (GHG) emissions from new motor vehicles by adopting the California GHG emission regulation.

Manufacturers of all 2009 and later model year vehicles will be required to meet a fleet average CO₂-equivalent emission standard that will become more stringent each year through to 2016. The average reduction of GHG emissions from new cars and light trucks compared to today's vehicles will be around 30% in 2016.

Mercedes-Benz Diesel Concept Car

DaimlerChrysler has revealed a new diesel concept car at their Innovation Symposium in Washington.

The lightweight, aerodynamic concept uses a 103kW (140hp) diesel engine with SCR that "greatly contributes to fuel economy and a further reduction in exhaust emissions". In the European driving cycle it has a fuel consumption of 4.3 litres per 100km.

SOUTH AMERICA

SAE Fuels & Lubes 2005 Conference

Some 130 papers were presented at the SAE Fuels & Lubricants Meeting held in Rio de Janeiro, Brazil from 11 to 13 May. The meeting was well attended by technical experts from around the world.

There were 4 sessions on HCCI and amongst the interesting papers and presentations were several on

catalysts developments; an overview of work with CETESB and the Hewlett Foundation on Clean Diesels for São Paulo; a VITO paper on simulations of fuel consumption and emissions in typical driving conditions in India; one on a French exercise on PM measurement at Renault, PSA, IFP and UTAC indicating that the current gravimetric method reliably measures down to 8mg/km; and data from Octel concerning a retrofitted bus in Chile using a Diesel Particulate Filter with a Fuel-Borne Catalyst.

AECC presented a joint AECC-Ricardo paper on the AECC Motorcycle test programme conducted at Ricardo in 2004.

ASIA-PACIFIC

South Korea increases Diesel Fuel Tax to Reduce Pollution

South Korea has announced that it plans to raise the domestic transport tax on diesel by 14.4% from 1 July 2005 as part of efforts to curb air pollution. The rise is in line with the government's medium-term plan to bring the domestic retail price of diesel to 85% of that of gasoline by July 2007.

The plans, which are subject to parliamentary approval in June, would increase the transport tax on diesel from 46 won per litre to 365 won and would result in a 6.5% increase in the retail price of the fuel to 1025 won per litre, based upon the 6-month average price. The tax would rise by a further 39 won per litre in July 2006 and again by 50 won per litre in July 2007 to meet the medium-term goal.

To help ease the financial burden on truckers and bus operators, the government will fully cover the price increases through a subsidy for the next three years.

Asia Moving To Low-Sulfur Fuels

According to a survey conducted by Reuters, countries that consume more than half of Asia's 24 million barrels per day (bpd) of oil demand will move to lower sulfur emission standards by the end of 2007. By 2010, nearly all of Asia will have tightened specifications.

In the next year alone, four Asian countries that consume 8.2 million bpd will reduce their sulfur limit to 500ppm: the standard that came into force in Europe in 1996. More than half of Asia is already at this standard. By 2010, nations with more than 8 million bpd of demand plan to cap sulfur at 50 ppm, the maximum level required in Europe from this year. In the Philippines and India, where new standards took hold this year, refiners have been forced to import low-sulfur fuel after hesitating to invest in upgrades.

Manganese Fuel Additive use to be eliminated in India

The Indian Minister for Petroleum and Natural Gas has said that except for Numaligh Refinery Limited, Public Sector Oil refineries are no longer using the Manganese-based fuel additive MMT. Numaligh uses marginal quantities of MMT as a trimming agent but will discontinue its use by March 2006.

AFRICA

South Africa moving to 500ppm Sulfur Diesel

South Africa will adopt a new, more stringent, diesel fuel sulfur specification of 500ppm in January 2006. The existing diesel sulfur specification is 3000ppm.

GENERAL

EU-China Consensus on Environment

EU Environment Commissioner Stavros Dimas and the Chinese Environment Minister Xie Zhenhua say they will cooperate on environmental issues including air pollution, biodiversity and climate change. Xie said China is already planning energy-efficiency measures to reduce greenhouse gas emissions and is putting renewable energies in place.

EU Leaders support Calls for UN World Environment Organisation

European leaders at their recent summit meeting have called for the UN environment programme (UNEP) to be given more money and a stronger mandate.

They supported UN chief Kofi Annan's call for "a more integrated environmental governance structure, based on existing institutions" and said that talks on strengthening UNEP should kick-off at a high-level meeting this September. The statement lines up the whole of the EU officially behind calls from France, Germany and Spain for UNEP to become a World environment organisation. The leaders of those countries also said that the proposal "is supported by an increasing number of industrial and developing countries including China".

US makes Clean Diesel Technology Development a Priority with the EU

The US has made the development of clean-diesel vehicle technologies a priority in a new cooperative energy policy stance with Europe.

A paper called "Energy Security, Energy Efficiency, Renewables and Economic Development," released at the recent summit meeting includes furthering

cooperation on clean diesel as an objective on which the US and the EU will focus their activities as areas of common action. The diesel objective reads: "Working together to promote the development, deployment and adoption of cleaner, more efficient diesel vehicle technologies, including by seeking to better align our regulatory standards for diesel engines and fuels."

New Rules on Ship Emissions enter force

International regulations under the MARPOL Convention to control harmful emissions from ships' exhausts entered into force on 19 May 2005.

The Annex VI regulations set limits on SOx and NOx emissions from ship exhausts and prohibit deliberate emissions of ozone-depleting substances. The Annex includes a global cap of 4.5% by mass on the sulfur content of fuel oil. There are provisions allowing for special "SOx Emission Control Areas" (SECAs) such as the Baltic Sea where sulfur content of fuel oil used onboard ships must not exceed 1.5%. Alternatively, ships must fit an exhaust gas cleaning system or use other methods to limit SOx emissions.

Environment & Energy Awards

On the eve of the World Refining and Fuels Conference: Europe 2005 in Brussels three Europeans were presented with awards at the Environment & Energy Awards Dinner held at the European Parliament building.

The awards were presented to Dr Axel Friedrich, well known for his work on emissions at the UBA in Germany, Dr Paul Greening who was formerly responsible for many of the emissions directives during his time at DG Enterprise and who has now returned to the UK Department for Transport and MEP Satu Hassi, who was formerly the Finnish Minister for the Environment and Development Cooperation and now serves as vice-chair of the European Parliament's Environment Committee and is the Rapporteur on the Marine Fuels Directive.

UN Environmental Accords Signed by Mayors from 50 Cities Worldwide

On 5 June 2005, Mayors of 50 cities from around the world signed the United Nations Urban Environmental Accords, a document outlining 21 actions designed to put cities on the path towards sustainability regarding energy use, waste reduction, transportation, and other areas.

Action items from which the cities can choose include

- reducing city-wide greenhouse gas emissions by 25% by 2030;
- adopting green building rating systems;

- expanding affordable public transport;
- eliminating leaded gasoline;
- establishing a system to measure air pollution and clean up the air;

Under the accords, the cities are to work to implement as many of the 21 actions as possible between now and World Environment Day in 2012. Success will be recognized through a City Green Star Program. Cities adopting 19 to 21 of the actions will earn four stars and those achieving 15 to 18 will get three stars. Those adopting 12 to 17 will get a two-star rating and implementing between eight and 11 gets one star.

Cities that joined San Francisco, Chicago and other US cities in signing include London; Istanbul; Copenhagen; Moscow; Delhi; Stockholm; Zurich; Taipei; Rio de Janeiro; Jakarta; Lyon (France); Nairobi; San Miguel de Allende (Mexico); Vitoria-Gasteriz, Spain; and Vancouver, British Columbia.

FORTHCOMING CONFERENCES

International Conference on Environment and Transport

1-5 August 2005, Nagoya, Japan

Details at:

<http://www.cleanairnet.org/caiasia/1412/article-58966.html>

As part of EXPO 2005 AICHI; a wide range of discussions will take place among various participants, including policy makers responsible for environment and transport issues from fourteen Asian countries, representatives from international organisations, local governments, industry, academia, NGOs and other stakeholders. The conference is expected to facilitate the exchange of technologies and information among participants, and to serve as a forum for discussion.

9th ETH-Conference on Combustion-Generated Nanoparticles

15-17 August 2005, Zurich, Switzerland

More at: http://www.lav.ethz.ch/nanoparticle_conf/

The conference will again provide a forum for the discussion of new scientific findings on combustion-emitted nanoparticles, and new methods to characterize such particles for research, automobile type-approval and engine diagnostics. Moreover, we intend to discuss progress in particle filtration from exhaust gases, as well as health effects, effects on climate and emission control of IC-engines in combination with particle elimination.

European Aerosol Conference (EAC) 2005

28 August - 2 September 2005, Ghent, Belgium

More at <http://www.eac2005.be> .

EAC 2005 will cover a variety of areas of basic and applied research involving fine airborne particles.

There will be special sessions on Health effects of aerosols and Medical aerosols.

EUROMAT 2005 – European Congress on Advanced Materials and Processes

5-8 September 2005, Prague, Czech Republic

Topics include Catalytic and sensoric properties of nanomaterials; Powder & ceramics processing; Materials characterisation; and Coatings & surface engineering.

AVL Kongress: Motor und Umwelt

8-9 September 2005, Graz, Austria

ICE2005: 7th International Conference on Engines for Automobile.

11-16 September 2005, Capri (Naples), Italy

ICE2005 aims to disseminate research results related to the field of engines, fuels and innovative propulsion systems for sustainable mobility. The scope of the papers presented in the technical sessions of the Conference covers in-cylinder fluid dynamics and combustion, diesel engines, spark ignition engines, fuel injection and sprays, emissions measurement and aftertreatment, engine simulation and control, liquid and gaseous fuels, and hybrid and electric-fuel cell vehicles.

Reduction of Emissions and Geological Storage of CO₂

15-16 September 2005, Paris, France

The purpose of the symposium is to examine the role of technical innovation as well as the capture and geological storage of CO₂ in reducing greenhouse gas emissions. This symposium will also consider new technological approaches in the light of the resources needed to finance such operations.

Sustainable Communities Series 2005-06: Transport & Sustainable Mobility Conference

19-20 September 2005, Brussels, Belgium

More at:

<http://www.euconferences.com/events.asp?ID=17&Type=Event>

The conference focuses on Euro 5 legislation, limiting emissions from vehicles in the EU and the development of sustainable forms of mobility and transport.

4th SAE Heavy Duty Diesel Emissions Control Symposium

20-22 September 2005, Gothenburg, Sweden

More at: <http://www.sae.org/events/symposia/hddec/>

The symposium will discuss advances in engine developments and likely emissions control strategies to be adopted for Euro 5, US 2007 and Japan 2005 compliance. The symposium will also discuss

technologies being investigated for 2010 and beyond, against a background of legislative priorities. For the first time, this symposium will incorporate a session specifically covering non-road emissions control.

PTNSS Kongress 2005 - The Development of Combustion Engines

25-28 September 2005, Bielsko-Biala/Szczyrk, Poland
Details at <http://www.ptnss.pl/kongres.html>

The Congress will discuss latest achievements in such fields as design, manufacture, research and ecological impact of internal combustion engines and fuels. The main areas of interest include Combustion processes in SI and CI engines; Alternative fuels; Emission measurements and aftertreatment; and Engine testing, durability, reliability and diagnostics.

Feinstaub – Quellen, Wirkungen und Vermeidung

29 September 2005, Berlin, Germany

Details at <http://www.euroforum.de/p1100030>

What are the sources of the fine particles? Are past measuring methods sufficient for the clearing-up of the damage mechanisms of the particles? What are the health dangers from fine particles? How large is the contribution of traffic to particles? What measures can be taken to lower the particle load?

14. Aachener Kolloquium – Aachen Colloquium Automobile and Engine Technology

4-6 October 2005, Aachen, Germany

<http://www.rwth-aachen.de/ac-kolloquium/index.html>

The congress will provide a wide range of technical presentations addressing to current challenges of the vehicle and powertrain industry. Program-related test vehicles, prototypes and aggregates from participating companies and institutions will be presented and there will be an accompanying exhibition.

1st International Symposium on Development Methodology – Optimisation of complex powertrains

11-12 October 2005, Wiesbaden Kurhaus, Germany

More at www.symposium-development-methodology.com

New Trends In Catalysis - International Course

11-13 October 2005, Brussels, Belgium

The course aims to cover catalysis research at large, and will provide a unique forum for sharing new methodologies, new insights and innovative developments in applications including petrochemicals and fine chemicals. Topics include new catalytic materials, chemical engineering in catalysis, biocatalysis and polymerisation catalysis.

Diesel Particulates and NOx emissions

17-21 October 2005, Michigan USA

University of Leeds / University of Minnesota intensive short course covering the latest developments in in-cylinder and exhaust aftertreatment, diesel particulates and NOx control.

Mechanisms of Action of Inhaled Fibres, Particles, and Nanoparticles in Lung and Cardiovascular Disease

25-28 October 2005, EPA Conference Centre, Research Triangle Park, North Carolina, USA

The overall goal of this meeting will be to provide a forum for discussion of basic and applied research strategies with an emphasis on interaction between environmental exposures to particles and fibres with host factors that may lead to disease pathogenesis.

6th China/Asia Clean Fuels Conference + Hart's World Refining and Fuels Conference: Asia

8-11 November 2005, Beijing, China

International Conference on Gas-Fuel 05

14-16 November 2005, Brugge, Belgium

Details at:

<https://www.ti.kviv.be/conf/Gas-Fuel%2005/index.html>

The growing demand for energy has led to an increased market for natural gas. Simultaneously its use as a feedstock for the petrochemical industry is rapidly growing. Gas-to-liquid conversion is now a reality and research in this field is intensive. The symposium covers the general trends and European perspectives and the related research contributions with their potential for future commercial developments.

2006 SAE World Congress

April 3-7, 2006, Detroit, Michigan, USA

More at <http://www.sae.org/congress/>

27th International Vienna Motor Symposium

27-28 April 2006, Vienna, Austria

2nd International Symposium 'Environment & Transport' including 15th Conference on Transport and Air Pollution

12-14 June 2006, Reims, France

Abstracts to INRETS by 30 September 2005

Details at:

<http://www.inrets.fr/services/manif/env-trp2006/index.e.html>

The themes will be evolution of transport systems, perception of the environment, the impact of transport on populations and ecosystems, the place of the environment in the concept of sustainable development, methods of evaluation, control methodologies and political scenarios for transport.