

January - February 2005

### INTERNATIONAL REGULATORY DEVELOPMENTS

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#### **EUROPE**

### Commission proposes PM Level for Pre-Euro 5 Incentives

The European Commission has issued a Staff Working Paper on "Fiscal Incentives for Motor Vehicles in Advance of Euro 5" suggesting 5 mg/km as PM figure for Member States to use for incentives for light-duty diesel vehicles. This is an 80% reduction from the Euro 4 limit value of 25 mg/km.

The paper states that a much lower particulate level than Euro 4 can be reached if particulate filters are fitted to diesel cars. The Commission says 5 mg/km suggests an engineering target of 2.5 mg/km and can currently only be met with particulate filters. Although legislation and measures for fiscal incentives should be technology-neutral, the EU must take the latest state of technological development into account when establishing emission limit values and, at present, this is the diesel particulate filter. The Commission considers this value to be realistic technically and justified from a cost benefit view.

The paper notes that because the motor industry has raised concerns on the feasibility of ensuring that low limit values are met throughout the whole life-time of a vehicle, the Commission will examine whether in-use and durability requirements will have to be modified for the formal Euro 5 proposal. The paper says that the 5 mg/km proposal does not prejudge the future Euro 5 limit values that the Commission will propose formally in 2005. It does not address diesel NOx or emissions from gasoline vehicles.

Member States who wish to introduce incentives after 1 January 2005 (the date at which Euro 4 came into force), have to notify to the Commission of the technical specifications linked to the incentives. The Commission and Member States then have the right to give detailed opinions on any aspects which may hinder trade, but not on the financial aspects. Germany, France and the Netherlands have indicated to the Commission that they plan to introduce fiscal incentives related to particulate matter and potential Euro 5 limits. Austria and Sweden have also expressed interest. In Germany car tax benefits have been agreed at €350 for new vehicles (to run to the end of 2007) and €250 for retrofitted vehicles.

# **Cost - Benefit Appraisals over-estimate Costs and under-estimate Benefits**

A report "An evaluation of the air quality strategy" commissioned by DEFRA, the UK Department of Environment, Food & Rural Affairs, challenges the increasing reliance on cost-benefit appraisals of air pollution policies. It finds that predicted costs are often

"very significantly" over-estimated, while benefits have generally been understated.

The report, prepared by AEA Technology, focussed on road transport and electricity generation and had three main aims:

- 1. assess the cost-effectiveness of policies in achieving air quality improvements;
- 2. assess the costs and benefits of these policies;
- 3. evaluate how closely the actual outcomes of policies match the anticipated effect.

The report says that by 2010 traffic emissions of fine particles (PM10) and oxides of nitrogen (NOx) will be 76% and 69% lower than they would otherwise have been. Overall, policies to reduce air pollution "have been extremely cost-effective". By 2010, policies should reduce the number of premature deaths in the UK by about 8900 per year. The report finds that predicted costs were over-estimates in most cases often to a "very significant" degree - and says that "these policies might not have been justified on the basis of a cost-benefit analysis before the policies were introduced." Examples given are that before implementation, the total costs of improving vehicle emission standards were estimated at £16.1-£22.8 billion for 1990-2001. AEA accepts that the actual costs are difficult to estimate accurately, but puts the figure at around £3 billion. The monetised benefits based mainly on UK health impacts - are likely to outweigh the actual costs by a significant amount. If transboundary and ecosystem impacts are taken into account, the benefits would increase very significantly.

# Revitalising the 'Lisbon Agenda': EU and Motor Industry Competitiveness

European Commission President Barroso has presented a new strategy aiming to revitalize the Lisbon Agenda - the EU's economic reform agenda from 2000 - and focus on actions to create more growth and jobs. The programme includes elements such as improving European and national regulations to reduce the burden of administrative costs; promoting energy efficient and low emission econovations; and creating a European Institute for Technology to attract the best minds, ideas and businesses to Europe.

Günter Verheugen, Commissioner for Enterprise and Industry, stressed that one of the factors on which Europe's economic success depends is high environmental standards. He said he would like European cars to be the most environmentally friendly in the world, because it is a competitive advantage, not a disadvantage. A new Commission reports highlights the need to strengthen eco-innovations. The Environmental Policy Review notes that the European eco-industry has been performing better than the rest



of the economy, employs more than 2 million people in Europe and continues to grow at around 5% per year. It says that there is growing consensus that "environment policy and eco-innovation can promote economic growth and maintain and create jobs, contributing to competitiveness and employment".

A related element is the launch of 'CARS 21' (Competitive Automotive Regulatory System for the 21st century) – a high level group to make proposals for increasing the worldwide competitiveness of the EU automotive industry and maximising sustainable mobility benefits to European society. The group will comprise prominent representatives of the EU car sector, Member States, the European Parliament, a Trade Union, the Institute for European Environmental Policy, the Fédération Internationale de l'Automobile and be chaired by the Commission. A report will be prepared before the end of 2005. It will identify measures for the next 10 years to develop an integrated strategy for a sustainable development, define the best regulatory approaches and set out the conditions necessary to ensure that innovation efforts give the European industry a first mover advantage.

A public stakeholder consultation to gather the opinion of interested parties on the best regulatory framework for the European automotive sector will be open until 15 April. This will be followed by a hearing of senior industry and civil society representatives and will feed in to CARS 21. Details are available on the DG Enterprise Automotive Unit web site.

### Questions & Answers on New EU Air Pollution Limits

The European Commission has issued a set of questions and answers on new EU limits for PM10 air pollution that came into force on 1 January 2005. It describes the nature, health effects and sources of PM10. It refers to the CAFÉ baseline data estimating that the average loss of life expectancy in the EU is nine months. This varies from a couple of months in some of the Member States with fairly clean air up to almost two years in the worst ones.

The Q&A document notes that there are many sources of particulate matter, of both man-made and natural origin. Transport activities generate PM due to the combustion of petrol and diesel, but other sources include power plants and small boilers for domestic heating. In 2002, twelve of the 15 Member States had pollution levels exceeding the limit value for that year. Local and national level measures suggested to limit emissions of particulate matter include reducing polluting traffic (congestion charges, environmental zones, installation of particulate traps on urban buses), strict standards for domestic heating and bans of the use of polluting fuels in cities.

### **Access to Environmental Information**

The European Directive 2003/4/EC which ensures improved public access to environmental information has now become binding for all EU Member States. It provides a right of access (as opposed to the current freedom of access) to environmental information held or produced by public authorities, for example data on emissions into the environment, their impact on public health and the results of environmental impact assessments.

### **PMP Inter-laboratory Correlation Exercise**

Nine laboratories in Europe, Japan and Korea are taking part in the light-duty PMP (Particulates Measurement Protocol) correlation exercise organised by the UN's GRPE sub-group on PMP and being run by the European Commission's Joint Research Centre (JRC). The laboratories are testing a Peugeot 407 'golden vehicle' provided by AECC, measuring both particulate mass (PM) and particle numbers to the protocol proposed by the group in June 2004. In addition to tests using this vehicle with the 'golden instruments' which will travel from lab to lab, several laboratories will be testing other vehicles - with and without filters - and alternative instrumentation. An interim report is expected for June, with the full programme completed by September. A similar exercise for heavy-duty engines is being discussed.

## Motorists put High Priority on Diesel Particulate Filters

A study of 1500 German motorists found that over 90% of car owners rate particulate filters above price cuts. The survey, conducted by the 3hm Automotive consultancy, showed that 91% thought the availability of an original equipment diesel particulate filter is more important than reductions in new car prices (89%) or reductions in maintenance costs (88%).

### Italy to Increase Fuel Tax to Fund Cleaner Buses

Italy is to add 0.1 eurocent per litre to diesel excise duty and 0.05 eurocent to petrol. The aim is to raise €350 million for investment in new bus fleets to reduce smog which has forced traffic bans in many cities.

Many Italian cities are struggling to meet new European Union limits on levels of fine particulate matter (PM) which came into force on 1 January 2005 and which demand no more than 35 days of excessive pollution per year. Seven Italian cities banned cars and motorbikes on a Sunday in mid February as PM levels soared due to dry, windless and sunny conditions. Some cities, including Rome,



have introduced partial bans throughout the week. The Environment Minister Altero Matteoli announced the new tax, saying that "The renewal of the public transport fleet is a first solution to the problem." Environmentalists welcomed the measure, but said a more punitive approach (for example road pricing and tolls on major urban highways) is needed to keep people out of their cars.

# Austrian NOx Emissions increasing rapidly

Austria is in serious danger of missing by a wide margin its legal obligation to curb emissions of nitrogen oxides (NOx) by the end of the decade according to data from the country's environment agency.

The agency's data show that national NOx output rose by 4.2% in 2003 to 229000 tonnes, over twice Austria's 2010 target under the EU national emission ceilings directive. The increase was mainly due to rising road transport emissions - the sector accounted for 57% of total output in 2003. Increased mileage for cars and trucks, a rising share of diesel vehicles (which currently have a much higher NOx limit than gasoline vehicles), plus an influx of foreign drivers looking to buy cheaper petrol in Austria all contributed.

### London Mayor sets 'Black Cab' Emissions Standard

The London Mayor's Taxi Emissions Strategy will require London's 20000 black taxis to meet Euro 3 emissions standards by 2007.

The mayor Ken Livingstone said "Taxis are responsible for 24% of fine particle and 12% of nitrogen oxides of road transport emissions in central London. These pollutants can cause heart and lung diseases and can trigger respiratory problems among the vulnerable, including the growing number of Londoners who suffer from asthma. In central London these pollutants are present at levels that damage the health of many Londoners".

From 1 July 2006 all existing taxis that are of a pre-Euro emissions standard will be required to meet Euro 3 standards. From 1 January 2007 this will be extended to taxis currently meeting Euro 1 and from 1 January 2008 will include taxis currently meeting Euro 2. The Greater London Authority (GLA) said a number of options are available for taxis that do not meet the Euro 3. In addition to investing in a new taxi, abatement technology such as a selective catalytic reduction (SCR) with particulate filter can be fitted to existing vehicles. The cost of converting black cabs to reach the new standards will be met by a flat rate fare of 20 pence per journey from April 2005.

### **Congestion Charge for Heathrow Airport?**

According to reports in the Sunday Times, the UK Government is considering using Congestion Charging around London's Heathrow airport as a way to tackle traffic pollution. They fear being unable to meet 2010 Air Quality directives without such a move, which could delay plans to build a third runway there. A consultancy has been asked to forecast the impact of different charges on traffic levels. Ministers reportedly hope that the move will encourage more people to travel to the airport by public transport, with the income generated being used to upgrade existing rail and bus links.

# Marine Exhaust Cleaning as Alternative to Fuel Sulphur Reductions

The European Parliament's Environment Committee draft report for the second reading of the directive on the sulphur content of marine fuels proposes several options as alternatives to 0.5% sulphur fuel, including on-board exhaust gas treatment (scrubbing) which they say would also benefit PM and NOx emissions, for which they also propose emission limits.

#### **Airborne PM Measurement**

As part of a European research project Lufthansa has installed instrumentation on a long haul Airbus which, for the next 10 years, will measure various gases and particle compounds at altitudes of 8 to 12km.

#### **NORTH AMERICA**

# US Clean Air Task Force Report on PM Health Impact

A report from Abt Associates commissioned by the US Clean Air Task Force quantifies the health impacts of fine particle air pollution from America's diesel fleet.

The report reviews the degree to which diesel vehicles increase the level of fine particle pollution, and recommends reduction measures that will "save thousands of lives each year". Key findings include:

- Fine particle pollution from diesel engines shortens the lives of nearly 21000 people each year. This includes almost 3000 early deaths from lung cancer.
- Reducing diesel particle emissions 50% by 2010, 75% by 2015, and 85% by 2020 would save nearly 100000 lives between now and 2030 in addition to the impact of EPA's new engine regulations.
- The health damages from diesel fine particles will total \$139 billion in 2010.
- Nationally, diesel exhaust poses a cancer risk 7.5 times higher than the combined total cancer risk from all other air toxics.



### **EPA Tailpipe Air Toxics Rule**

A federal judge has ruled against the US Environmental Protection Agency in a lawsuit brought by environmentalists trying to force EPA to release a new vehicle emissions regulation. This "mobile source air toxics rule" would require reductions of toxic emissions from cars, trucks and buses.

Under the 1990 Clean Air Act amendments, EPA had to complete a study on the need for and feasibility of such a rule by 1992, with regulations based on the report due in 1995. After legal action EPA ultimately proposed a rule in late 2000, but this did not impose tailpipe emissions requirements. Instead it set a requirement preventing refiners from increasing the average toxicity of gasoline. The rule also committed EPA to conduct additional studies, release a proposal in July 2003 and set a final rule in July 2004. The lawsuit was started when EPA missed this deadline.

Environmentalists claim that without the rule, hazardous air pollutants - most notably formaldehyde and benzene - will continue unchecked, even though EPA declares that motor vehicles are the largest source of such emissions. The pollutants are claimed to substantially increase the risks of cancer and other serious health problems. EPA argued that the agency does not have a mandatory obligation to meet a deadline it had suggested in a separate regulation but the judge found that "the language of the regulation imposes a nondiscretionary duty on the [EPA] administrator to either affirmatively act or decide that no action was needed".

# California Proposal on PM Reductions from Public and Utility Fleets

California Air Resources Board (ARB) staff has issued a revised regulatory proposal on diesel particulate matter (PM) reductions from existing heavy-duty diesel vehicles owned by public agencies and utilities. The latest draft includes exemptions for military tactical vehicles, expands the definition of low-usage vehicles, and extends the implementation schedule for fleets located in low population counties.

### California Proposals for Heavy-Duty OBD

California ARB has released proposals for on-board diagnostics (OBD) for highway heavy-duty engines in vehicles of over 14000 lbs (6.35 tonnes) gross vehicle weight, to phase-in from 2010 model year.

The proposals would require monitoring of HC conversion efficiency for oxidation catalysts; NOx conversion efficiency for SCR, NOx adsorber and lean NOx catalysts; functional checks of any other SCR system components (e.g. reductant tank, delivery,

injection system); PM monitoring systems to determine when PM emissions exceed 0.05 g/bhp-hr; and monitoring of DPF regeneration strategies both for failure to regenerate and for too frequent regeneration.

# White House rates EPA's Mobile Sources Programme as 'Moderately Effective'

The US Environmental Protection Agency's mobile sources standards and certification are rated as "moderately effective" in meeting EPA objectives by the White House Office of Management and Budget (OMB) in a report released in February.

The rating, known as the Program Assessment Rating Tool (PART), combines four separate grades awarded for each programme's purpose and design, planning, management, and results. OMB gives more weight to a programme's results, which are worth 50% of the total ranking. The mobile sources programme, funded under EPA's Office of Transportation and Air Quality, received a 73 grade for results, a 91 for management, a 67 for planning, and a 100 grade for programme purpose and design. OMB concluded that the programme, which regulates emissions from cars, trucks, buses, trains, and farm and industrial equipment, is "well-designed, well-managed, and had demonstrated environmental results." That review underpins the administration's decision to ask Congress to increase the programme's funding from the current \$68 million to \$70 million in 2006.

## Review of US PM and Ozone Air Quality Standards

New dates have been set for the review of US air quality standards (NAAQS) for particulate matter and ozone with the PM review extended by 9 months, and completion of the ozone review by one year.

For the particulate matter review a Final Staff Paper and Risk Assessment will be published in June 2005 with a Notice of Proposed Rulemaking (NPRM) in December 2005 and Notice of Final Rulemaking in September 2006. For the ozone review a Draft Criteria Document will be prepared to allow a first draft Staff Paper and Risk Assessment by August-September 2005 followed a year later by a Final Staff Paper and Risk Assessment, the NPRM in March 2007 and the Notice of Final Rulemaking in December 2007.

The EPA Staff Paper on PM was published in February and indicates the need for a tighter NAAQS. EPA staff recommends an annual PM2.5 standard at the current level of 15  $\mu$ g/m³ together with a revised 24-hour PM2.5 standard in the range of 35 to 25  $\mu$ g/m³. This could provide an appropriate degree of protection against serious mortality and morbidity



effects associated with long- and short-term exposures to fine particles. As an alternative the proposal suggests a revised annual PM2.5 standard in the range of 14 to 12  $\mu$ g/m³, together with a revised 24-hour PM2.5 standard (providing supplemental protection against localised or seasonal peaks) in the range of 40 to 35  $\mu$ g/m³.

## Diesel Hybrid Concept with Particulate Filter and SCR

At the Detroit motor show Ford showed a new diesel hybrid concept vehicle capable of meeting California's Partial Zero Emission Vehicle emission requirements. Ford claims this makes it the first PZEV-capable diesel. The Mercury Meta One sports wagon uses a twin-turbo version of the 2.7-liter common-rail V6 diesel engine that was developed jointly with Peugeot. The electric motor is integrated into a modular hybrid transmission. The emission control system includes a diesel particulate filter using a fuel-borne catalyst, metal substrate pre-turbo exhaust port oxidation catalysts and a urea-SCR system for NOx reduction.

# Award for Inventors of the Ceramic Cell Substrate

The US National Medal of Technology has been awarded to Drs. Rodney D. Bagley, Irwin M. Lachman and Ronald M. Lewis for their invention of the cellular ceramic substrate. The award, announced by President Bush, recognises technical contributions that significantly impact commerce and advance the American standard of living. While working at Corning in the 1970s the team developed a "totally new, economical, high-performance cellular ceramic substrate that has since set the standard for vehicular catalytic converter efficiency worldwide".

### **ASIA-PACIFIC**

# Motor Industry seeks more time on Indian Pollution Control Tests

Indian newspaper 'The Hindu' reports that the Indian motor industry is insisting that more studies are needed before introduction of a Lambda test as a regulatory norm for in-use petrol vehicles fitted with closed loop three-way catalytic converters.

The Union Ministry of Road Transport and Highways issued a notification allowing the introduction of the Lambda measure about a year ago. The Environment Pollution (Protection and Control) Authority is pressing for a deadline of May 15 to introduce the test which will look for a Lambda value of 0.97 to 1.03 to ensure that the catalytic converter has maximum efficiency.

According to environmentalists most manufacturers are claiming that they have never regulated Lambda while some are claiming that their vehicles would be naturally meeting the standards. Environmentalists also point to a study by the Automobile Research Association of India (ARAI) in which eight out of 23 new gasoline vehicles did not pass the Lambda test or were unable to maintain the Lambda window. ARAI was reported as saying that another 3-4 months of tests are needed and that instrumentation at test centres needs to be augmented. The association was concerned that the situation needed to be handled properly – "merely saying that the Lambda has failed will lead to a public outcry".

### **China moving toward Euro 2 Fuels**

China's main refiner, Sinopec, is expected to produce lower sulfur (500ppm) gasoline and diesel transportation fuels at all its refineries from 1 April to meet a nationwide shift to cleaner fuels from July 2005. The current national requirement is 0.2% (2000ppm) for diesel and 800ppm for gasoline.

Sinopec's top four refineries process high sulfur crudes. China's second-largest refiner, PetroChina, has not imposed a deadline before July as it processes mostly low sulfur Chinese crude. China has seven of the world's 10 most polluted cities, and has been boosting efforts to clean up its air using Euro 2 standards. From 1 July all petrol stations in Chinese cities will adopt the new Euro 2 specifications, which were adopted in Beijing last October as the capital strives to clean its air before the 2008 Olympics. Beijing has already adopted fuel requirements similar to Euro 3, to be required later this year.

# Supply of 10ppm Sulfur Fuels starts in Japan

Japanese refiners started supplying 10ppm (max.) sulfur gasoline and diesel nationwide from 1 January 2005, two years ahead of the mandatory deadline, following a voluntary commitment by the Petroleum Association of Japan (PAJ). The fuel replaces the current 50ppm sulfur fuel.

### **China Reviewing MMT**

China's State Environmental Protection Agency (SEPA) is reported to be carrying out a review of the effects on emissions of the manganese-based fuel additive MMT, used in China as an octane-booster. The review, similar to those under way in the EU and Canada, follows concerns over adverse impacts, notably catalyst plugging and deposit formation, reported for metal-based additives when used with advanced gasoline engine emission control systems.



#### **GENERAL**

### Pollution during Pregnancy is linked to Childhood Cancer

A University of Birmingham (UK) study published in the Journal of Epidemiology and Community Health suggests that women who breathe air polluted with smoke and exhaust fumes are up to four times more likely to have children who develop cancer.

The study linked pollution 'hot spots' around the country with the incidence of cancer. The findings show that pregnant women and those about to conceive who live near factories, power stations or major road junctions are at greatest risk. The researchers say that the evidence from this set of data is that these exposures account for half or more of cancers in childhood. George Knox, emeritus professor of epidemiology, who made the study, said: "Most childhood cancers are probably initiated by close perinatal encounters with one or more of these high emission sources. The low atmospheric levels of these substances suggest the mother may breathe them in, with carcinogens passing across the placenta". In addition "direct exposures in early infancy, or through breast milk, or even preconceptually, cannot be excluded."

# Study links Particulate Pollution to Low Birth Weight

A new study says that babies born in Californian cities with the dirtiest air weigh less than those born in cleaner communities. The study, published in the journal 'Pediatrics', joins a growing body of research about the dangers of fine particulate matter.

In their study of 18000 babies born in California in 2000, researchers analyzed the birth weight and level of fine particulate matter pollution near the mother's residence in the preceding nine months. They found that babies born to mothers in the most polluted areas consistently weighed about 28 g less than babies born to mothers who lived in clean-air cities. Researchers could not determine whether the mother's worsened health impacts the baby or whether the pollution is getting directly to the foetus.

# **New Study finds Air Pollution damages Babies in Womb**

Babies' DNA can be damaged even before they are born if their mothers breathe polluted air, according to a new study funded by the US National Institute of Environmental Health Sciences and published in the February issue of the journal 'Cancer Epidemiology Biomarkers and Prevention'.

The team at the Columbia University Center for Children's Environmental Health in New York studied 60 newborn babies. As part of a larger study, they monitored the babies' exposure to polycyclic aromatic hydrocarbons. To determine exposure to pollution, the mothers filled out questionnaires and wore portable air monitors during the last three months of their pregnancies. Women were rated as having high, moderate or low exposure based on average pollution levels for the group. They then tested the umbilical cord blood of the newborns, looking specifically at the chromosomes, which carry the DNA, damage to which can cause cancer. They observed 4.7 chromosome abnormalities per thousand white blood cells in newborns from mothers in the low exposure group, and 7.2 abnormalities per thousand white blood cells in newborns from the high exposure mothers.

### **Kyoto Climate Treaty goes into Effect**

The UN Kyoto Protocol on curbing emissions of global warming gases went into force on 16 February.

Under Kyoto, developed nations will have to cut emissions of greenhouse gases by 5.2% from 1990 levels by 2008-12. Those exceeding the 2012 goals will be penalized with bigger cuts than the average targets from 2012. Even if fully implemented, Kyoto would slow the rise in temperatures by just 0.1 °C by 2100, according to UN figures. The UN climate panel forecasts an overall rise of 1.4 to 5.8 °C this century.

# International TV Campaign promotes Public Transport

On the day the Kyoto Protocol came into force (16 February) the first international TV campaign for public transport and the environment was launched. The campaign, shown over several major TV networks, promotes the environmental and life-style benefits of public transport. It is being run by the International Association of Public Transport (UITP) and backed by UNEP (the United Nation's Environment Programme).

#### **Next Generation Oils**

Car manufacturers have asked the oil industry to start development work on specifications for the next generation of International engine lubricant standards (ILSAC GF-5) for introduction in 2009. The top three issues from the motor industry are improved fuel economy and fuel economy retention; improved emission system compatibility; and improved durability. Limits on phosphorus content are expected to remain part of the specification, but it is reported that a test for phosphorus volatility may also be considered.





#### FORTHCOMING CONFERENCES

### 6th European Fuels Conference: The Future of the Refining Industry

14-16 March 2005, Paris, France

The conference includes sessions on current issues within the auto-fuels sector, the introduction of biofuels within European refining, and developments within the marine sector.

### **VDA Technical Congress**

16-17 March 2005, Ingolstadt, Germany

Parallel sessions on 'Environment and Energy' and 'Vehicle safety and Electronics'. The 'Environment and Energy' sessions cover powertrain and exhaust aftertreatment, fuel consumption and CO2 reduction, exhaust emissions and noise emissions.

#### 5th International Conference on Urban Air Quality

29-31 March 2005, Valencia, Spain

Details at: <a href="http://www.urbanairquality.org/Themes.htm">http://www.urbanairquality.org/Themes.htm</a>

Key themes include: Measurement of air pollutants; Emission models and inventories; Source apportionment studies; Modelling of air pollutants; Chemical and physical transformation of pollutants; Personal exposure and environmental/health impact of urban air pollution; Urban air quality databases, information systems and data mining/archiving; and Air quality policy analysis and development

#### Additives 2005

5-7 April 2005, Dublin, Ireland

This meeting will put future developments of fuel and lubricant additive technology in the context of the challenge in simultaneously meeting the needs of vehicle owners and of government legislators on targets for emissions, fuel economy and recyclability.

### SAE 2005 World Congress

11-14 April 2005, Detroit, USA Details at www.sae.org/congress

#### **Health Effects Institute Annual Conference 2005**

17-19 April 2005, Baltimore, Maryland USA

Sessions include Air toxics exposure and health effects; Air pollution and children's health; Particulate matter in a multi-pollutant world; and Health effects and traffic pollution.

### Diesel-Partikel-Filter: Herausforderung Partikelemissionen

19-20 April 2005, Stuttgart, Germany

Filter concepts: Ceramic and metallic Diesel particle filters systems suitability for different purposes, filter material characteristics, comparison of regeneration measures, particle measuring methods, possibilities, limits and quality of measurement results, and experiences with series deployment of DPFs.

### 3rd AVL International Commercial Powertrain Conference

20-21 April 2005, Graz, Austria

Sessions include Industry driving forces; Differences and commonalities in technologies; Industry-specific solutions (agricultural, construction equipment, marine etc.); and value chain management.

### Euro 4 & 5: strategies for buyers & suppliers

20-21 April 2005, Brussels, Belgium

Fleet owners will discuss the new situation - where a major factor in buying decisions will be the type of environmental technology installed - with truck manufacturers, fuel distributors and service companies who supply them. Presenters will include representatives of the European Commission.

#### 26th International Vienna Motorsymposium

28-29 April 2005, Vienna, Austria

Details at: http://www.oevk.at/symp\_2005/ankuendigung/

Sessions include exhaust gas after treatment "emission reductions - aims achieved ?", new engines; combustion, and the future of mobility.

#### **SAE Fuels and Lubricants Conference**

11-13 May 2005, Rio de Janeiro, Brazil Details at <a href="http://www.sae.org/">http://www.sae.org/</a>

Topics will include Combustion & emission formation processes in SI and Diesel engines; Large stationary Diesel engines; In-use emissions performance and technology trends; Automotive catalyst and converter technologies for LEV and beyond; Aftertreatment for gas direct injection and Diesel; Lubricants and fuels.

### 2005 JSAE Annual Congress

18-20 May 2005, Yokohama, Japan

Technical areas include Powertrains, Fuels and lubrication, Environment, Diesel exhaust emissions control, and Advanced gasoline engine systems.

#### Harts World Fuels Conference Europe 2005

23-25 May 2005, Brussels, Belgium Details at:

http://www.worldfuelsconferences.com/2005events.html

#### **Diesel Particulates and NOx Emissions course**

23-27 May 2005, Leeds, UK

This course concentrates on engine technology for low emissions, fuel requirements and after-treatment techniques. It does not cover particulate measurement techniques, but does cover particle size analysis and problems with the US heavy-duty transient test with very low emission diesel engines. Companies lecture on their recent low emission engine research into diesel particulates and NOx reduction techniques as well as on their views on engine technology requirements for future emissions legislation.





### Beograd 2005 EAEC European Automotive Congress

30 May - 1 June 2005, Belgrade, Serbia & Montenegro

Details at www.jumv.org.yu/eaec2005/prog2.html

Main topics include advanced propulsion and powertrain; energy, emissions, ecology, environment; safety; automotive logistics; and advanced engineering techniques and tools.

### **Engine Expo 2005**

31 May - 2 June 2005, Stuttgart, Germany

Details at: www.engine-expo.com

### 14th Symposium 'Transport & Air pollution'

1-3 June 2005, Graz, Austria

Details at:

http://fvkma.tu-raz.ac.at/eng/Conferences/Conferences.html

All transport modes will be considered (road, rail, air and sea). The symposium will focus particular attention on issues relating to transport emissions, atmospheric transport and diffusion, air chemistry, and integrated air quality modelling. A focus will be put on PM10 (emissions, air quality measurements, source appointment) and PM size distribution; Vehicle emissions and control technologies; and street scale, intra-urban scale and regional dispersion processes. The symposium will include the COST 346 final Conference dealing with emissions and fuel consumption of heavy duty vehicles.

# VDI Congress Trucks and Buses – Solutions of reliability, sustainable environment and transport efficiency

9-10 June 2005, Böblingen, Germany

In 2005 the first vehicles that satisfy Euro 4 exhaust gas regulations will come to the market, but what solutions are being offered for regulations after that?

### **VDI - Testing and Simulation – Measurement and Trials Technology.**

16-17 June 2005, Würzburg, Germany

The focus will be on the interplay between testing/simulation, trials and calculation, as well as new measurement and testing procedures, applications and data management.

### Non-CO<sub>2</sub> Greenhouse Gases (NCGG-4) Science, Control, Policy, Implementation

4-6 July 2005, Utrecht, the Netherlands Details at <a href="https://www.ncgg4.nl">www.ncgg4.nl</a>

The symposium will focus on the non-CO2 greenhouse gases. The symposium will be conducted in parallel sessions, focussing on the main themes: Sources, sinks and inventories; Monitoring and modelling and Control and policy implementation

### International Conference on Environment and Transport

1-5 August 2005, Nagoya, Japan.

Details at

http://www.env.go.jp/en/news/2004/0806/0806-a.pdf

As part of EXPO 2005 AICHI; a wide range of discussions will take place among various participants, including policymakers responsible for environment and transport issues from fourteen Asian countries, representatives from international organizations, 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

### **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.

### 4th SAE Heavy Duty Diesel Emissions Control Symposium

20-22 September 2005, Gothenburg, Sweden More at: <a href="http://www.sae.org/events/symposia/hddec/">http://www.sae.org/events/symposia/hddec/</a>

The symposium will discuss advances in engine developments and likely emissions control strategies to be adopted for Euro 5/US 2007/ 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-Biała / Szczyrk, Poland

Details at <a href="http://www.ptnss.pl/kongres.html">http://www.ptnss.pl/kongres.html</a>

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.