

# N AECC Newsletter

Association for Emissions Control by Catalyst AISBL  
Diamant Building, Boulevard Auguste Reyers 80, B-1030 Brussels, Belgium

Affiliated to CEFIC

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## November – December 2004

### INTERNATIONAL REGULATORY DEVELOPMENTS

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## **EUROPE**

### **1. Public Consultation on European Commission Action Plan to reduce Air Pollution**

The European Commission has launched a public internet consultation on the measures to be included in a new European Action Plan to reduce air pollution that will run until the end of January 2005. The Action Plan is part of EU's Thematic Strategy on Air Pollution (CAFÉ) and is due in mid-2005.

The Commission says that each European citizen is losing about 9 months of life expectancy due to poor air quality. Recent studies show that more than 22000 premature deaths each year are due to high level of ozone and that there is a reduction of life expectancy between 3 to 14 months due to particulate pollution.

Even if impressive progress has been made in the past to reduce air pollutant emissions, there is still need and room for improvement. The Action Plan will include future exhaust emission standards for cars, new ways of promoting clean transport, future air quality limit values, new reduction objectives per country or per sector, and future targets for public health and environment.

The consultation is at: <http://europa.eu.int/yourvoice/forms/dispatch?form=356&lang=EN>

### **2. European Environment Agency 'Term 2004' Report**

The European Environment Agency (EEA) has issued its 'TERM 2004' report on ten key transport and environment issues for policy-makers.

Of the ten indicators, only two are positive, one of which is vehicle emissions. The report says that "The vehicle fleet is gradually becoming cleaner due to improvements in the technology required to meet European emission standards. Improvements are occurring significantly faster than the growth in traffic volumes, with absolute reductions in emissions of harmful substances to the air.

Nonetheless, further initiatives will still be needed to reduce people's exposure to damaging pollutants and to achieve the air quality targets set for 2010 especially for NOx and fine particles".

The report notes that "there is, however, increasing evidence that standardised test cycles used for the type approval of vehicles do not necessarily represent real world driving conditions. The issue of 'chip-tuning' of diesel vehicles to boost power at the expense of fuel consumption and low emissions is a cause for concern".

### **3. French Budget for Filters on Buses announced**

The French Environment Minister has announced a €9 million budget extension to equip all French buses in dense urban areas with Diesel Particulate Filters.

The measure will result in some 2000 vehicles being equipped with DPFs. Two-thirds of the filter costs - estimated as €4000 to €7000 depending on the bus type - will be covered by the programme, which is expected to reduce particle emissions from the buses by at least 90%. Municipal authorities are expected to voluntarily upgrade their fleets using the subsidies, but the government may issue new regulations mandating filters if authorities fail to act voluntarily.

### **4. Austria gives Tax Incentive for Clean Diesels**

The Austrian government has approved a plan to reduce the vehicle tax on new diesel cars with low emissions of particulates and raise the tax on those with higher emissions.

For two years from July 2005, purchasers of cars emitting up to 0.005 g/km of fine particles will qualify for a €300 reduction in tax. From the same date, tax on vehicles emitting over this amount will pay as much as €150 more, rising to as much as €300 more from July 2006.

## **5. Belgian Orders for Euro 4 Buses and Retrofit DPFs**

The Flemish bus operator De Lijn has ordered 142 new buses meeting Euro 4 standards, reported to be the first buses to meet this new standard. 104 buses will be equipped with urea-SCR systems and 38 buses will have Diesel Particulate Filters.

In addition the Flemish regional government has ordered a further 166 particulate filters for fitment to older (Euro 2) buses of De Lijn. 329 of the 765 Euro 2 vehicles have already been fitted with particulate filters. De Lijn already has some prototypes running in which Euro 3 engines have been fitted with particulate filters and De Lijn has a pilot programme testing a system combining particulate filters with SCR NOx reduction.

## **6. London SCR Tests**

Transport for London (TfL) wants to reduce NOx emissions from Euro 2 and 3 buses.

SCR will be retrofitted to up to 20 vehicles, while EGR will be installed on 10. The retrofitted buses will run in London for a few weeks before going to Millbrook automotive proving grounds to undergo low-speed test and evaluation cycles. If the trials are successful, SCR and EGR could start to be fitted to thousands of London buses, starting in March 2005.

## **7. Lombardy Region Incentives for Clean Two-wheelers**

An incentives agreement between the Regione Lombardia and the Associazione Nazionale Ciclo Motociclo Accessori (ANCMA) aims to speed up the renewal of mopeds, scooters and motorcycles.

From 1 October 2004 a total of about €3 million in incentives is available to citizens of Lombardy for two wheelers with low emission impact, providing:

- €100 for the purchase of Euro 2 standard mopeds or €250 if fuel consumption is below 2.3 l/100km and

- €150 for registration of scooters or motorcycles <125cc and €250 for scooters or motorcycles of 126 to 255cc.

The incentive will be increased by €50 for the associated scrapping of any "Euro 0" two-wheelers.

## **8. Poland planning Emissions-Based Vehicle Tax**

The Polish finance ministry has proposed replacing the registration tax on new and imported second-hand road vehicles with one based on emissions and engine capacity.

For the oldest vehicles meeting only Euro 0 emission standards, the tax rate will be about one euro per cubic centimetre of engine capacity. For the newest, cleanest cars the rate will be just a quarter of this.

## **9. Emissions-Based Vehicle Taxes for Germany**

According to a report in the Süddeutsche Zeitung, annual car tax in Germany is to be calculated in 2005 according to cars' EU emissions standards.

Annual car tax will rise 40% for Euro 1 petrol cars, to €15.13 per 100cc of engine capacity, and by 20% for Euro 1 diesel cars, to €27.35 per 100cc. From 1 January, the tax incentives for Euro 4-compliant cars will be abolished; it is expected to be replaced by an incentive linked to Euro 5-type legislation, especially for particulate emissions.

## **10. Public Transport Group defends "Clean" Diesel**

UITP, the European public transport group argues in a new report that improvements to fuel, engines and exhaust treatments mean that diesel can be more environmentally attractive than gaseous fuels.

The 37-page report puts the cost of equipping 50 buses with particulate filter technology (CRT) at €300000 compared to at least €2.3 million for the same number of buses run on natural gas or liquefied petroleum gas.

**11. UK "Technology Roadmap"**

The UK's government-initiated Foresight Vehicle project has published an updated version of its 'Technology Roadmap'.

The Performance Measures and Targets section anticipates that within 5-10 years PM limits will be 2.5mg/km for cars and 3.0mg/kWh for Heavy-Duty engines. In the same timeframe NOx will be 0.08g/km or 0.5g/kWh respectively. Within 10-20 years it expects that particulates from all engine types will be reduced to 20% of 1998 gasoline engine values and CO, HC and NOx will reduce to 50% of Euro 4.

**12. Norway proposes Duty Cut for Sulphur-free Fuels**

To encourage the uptake of sulphur-free gasoline and diesel the Norwegian government has proposed a reduction of Nkr 0.02 in duty for these fuels together with an increase of Nkr 0.02-0.03 for existing grades.

**NORTH AMERICA****13. Draft Regulatory Concepts for Controlling PM from Harbour-craft**

California ARB has issued draft regulatory concepts for controlling diesel particulate matter (PM) from commercial harbour-craft.

The draft regulations provide for two options for reducing PM emissions: a) re-powering, rebuilding or retrofitting to meet US EPA Tier 2 marine diesel emission standards or b) the use of the highest level available of verified diesel retrofit emission control system (25% or 50% reduction in PM). In this case the vessel must then comply with EPA Tier 2 standards or better by 2020.

Proposed compliance schedules vary by annual hours of operation and model year of the existing engine and are phased over the period 2008 to 2013. ARB staff intends to finalise these proposed regulations and bring them to the Board for approval in the second half of 2005.

**14. California approves Low Sulphur Fuels for Locomotives and Harbour-craft**

The California Air Resources Board (ARB) has approved a regulation that requires low sulphur diesel fuel to be used in intrastate locomotives and harbour craft.

The new regulation requires all intrastate locomotive and harbour craft to begin using CARB diesel by 1 January 2007 (one year earlier in the Los Angeles region). This is the same fuel currently used by all on-road diesel motor vehicles in California. By 2006, CARB diesel will have no more than 15 parts per million (ppm) of sulphur by weight. The measure will reduce emissions of NOx by 730 tons per year, sulphur oxides (SOx) by 657 tons/year, and particulate matter (PM) by 219 tons/year.

Without this regulation, use of 500ppm sulphur fuel would continue until 2012 when the federal sulphur standard changes.

**15. California enforces Software Regulation Upgrade for Trucks**

The California Air Resources Board (ARB) has enacted a regulation that will require owners of nearly 60000 heavy-duty trucks, school buses and diesel-powered motor homes built between 1993 and 1999 to have their computer software upgraded to reduce excess smog-forming emissions. The action was taken after an unsuccessful seven-month voluntary programme.

The regulation will require software 'reflash' to prevent the release of additional nitrogen oxide emissions. The requirement stems from a settlement between US EPA, ARB and the six largest truck manufacturers over emission control software that increased emissions when the vehicle operated under conditions that were not included in government emission compliance tests. Manufacturers agreed to reflash the affected vehicles during engine overhauls, projected to be at about 350000 miles. However, most

of these engines have long exceeded that mileage; some are now over one million miles old, without being overhauled.

#### **16. California adopts Off-road Diesel Engine Emissions Standards**

The California Air Resources Board has approved the adoption of the US EPA's Tier 4 off-road diesel engine emission standards.

These harmonised emission standards begin their phase-in in 2008 with implementation complete by 2015. They include diesel particulate matter (PM) and NOx emission standards that should require the use of particulate filters and catalyst-based NOx emission controls on most categories of off-road diesel engines.

### **SOUTH AMERICA**

#### **17. Brazil Mandates On-Board Diagnostic Systems**

Brazil's National Environmental Council (Conselho Nacional do Meio Ambiente, CONAMA) has issued a resolution that sets deadlines and specifications for new cars to be installed with on-board diagnostic (OBD) systems for evaluating the performance of emission control devices.

Between January 2007 and January 2009 manufacturers will have to equip all domestic or imported light vehicles (cars, vans, and light trucks) with an OBD system in which a dashboard panel light goes on if any emission control device isn't working. Between January 2009 and January 2011 manufacturers will have to equip all light vehicles with an upgraded OBD system that also indicates when the device stopped working. For the measure to be effective, steps will have to be taken to ensure that car owners get their vehicles repaired when the malfunction lights come on. Currently, only one of Brazil's 27 states has implemented rules mandating annual emission inspections.

#### **18. Brazil allows sale of Biodiesel**

Brazil has issued a provisional measure authorizing the nationwide sale, on a voluntary basis, of biodiesel fuel, according to the Ministry of Mines and Energy. The approved biodiesel is a mixture of 2% biofuel and 98% regular diesel called B-2 biodiesel. The biofuel component consists of vegetable oil and sugar-cane ethanol, which serves as a reagent, or catalyst. Brazil has a ready supply of both, since it is the world's second largest producer of soy and largest producer of sugar and ethanol.

### **ASIA-PACIFIC**

#### **19. Launch of Diesel Retrofit Programme in China**

On 18 November a project to retrofit a select fleet of existing buses and trucks in China was launched. The project involves China's State Environmental Protection Administration (SEPA), the Beijing Environmental Protection Bureau (EPB), and other organizations and is backed by the US EPA which has committed \$250000 plus work hours to the programme.

About 6% of vehicles running in Beijing are reported to be diesel vehicles. The US EPA estimates that this retrofit demonstration project will reduce particulate emissions and other air pollutants in an existing diesel vehicle fleet by 40% or more through the use of cleaner fuel and the introduction of new technologies. The number and types of vehicles to be treated and the programme duration have yet to be decided.

#### **20. Worldwide Motorcycle Test does not match Indian Situation**

A study by ARAI - the Indian automotive research organisation has concluded that the worldwide motorcycle test procedure (WMTTC) does not reflect actual use conditions of Indian vehicles under Indian road conditions, especially regarding acceleration and deceleration.

Data was presented at a recent meeting of the United Nations GRPE group developing the WMTC. ARAI noted that in general engines in India are set very lean for fuel economy and this also influences acceleration rates and cruise times. As a result some vehicles had difficulty keeping up with the cycle, especially on high accelerations. They believe Indian driving conditions and vehicle types to be typical of much of Asia, and suggest that a future version of the WMTC should include an additional category of vehicle with a special driving cycle.

### **21. Japan to tighten Emission Rules for Diesel Vehicles**

Japan's Environment Ministry looks set to further tighten emissions standards for diesel vehicles in 2010.

Current emission regulations will already be tightened in April 2005. On 17 November, the Ministry of Environment formally asked the Central Environment Council to work out details for the 2010 standards by next March. Japan's 2005 standards will be the strictest in the world, but rules due to take effect in the United States in 2007 will be even stricter, which is reported to be a factor in pushing Japan to strengthen its rules again.

The Ministry is believed to be considering halving the 2005 allowable emission levels. The Tokyo municipal government meanwhile will set tougher diesel emissions standards from April 2006. The municipal government's Environmental Bureau will issue details next March.

### **22. Vietnam hopes to tighten In-use Emission Controls in 2005**

The Vietnam Registry Department has outlined a draft roadmap and new criteria for emissions from motorized vehicles to be applied in February 2005.

In-use gasoline-fuelled automobiles in 4 major Cities will be required to have a CO content at idle of less than 4.5% and HC content of less than 1200ppm from the start

of 2005, which most vehicles manufactured during the 1990s will satisfy. From 1 January 2010 the limits for the whole country would be 3.5% CO and 800ppm HC. For diesel engines the requirements would be 72 Hartridge Smoke Units (HSU) from 2005 and 6 HSU from 2010.

The criteria for new vehicles aim to reach Euro 2 standards at end of 2007/ beginning of 2008 and Euro 3 standards by 2010 except for heavy-duty vehicles which will be in 2011.

The Registry Department is planning to outline another roadmap to define new gas emission criteria and operational life spans for motorbikes. Vietnam now has about 13 million motorbikes.

### **23. Pollution Study in Southern China**

A study has blamed vehicle emissions and the burning of coal and biomass as the main culprits for high particulate levels in the Pearl River Delta and Hong Kong.

According to the Civic Exchange, a Hong Kong 'think tank', air pollution levels in China's industrial Pearl River Delta are two to five times higher than US air quality standards, and particulate levels in neighbouring Hong Kong were twice as high as US standards.

A two-year environmental study of the region found that levels of fine particulates were highest in the southern Chinese city of Guangzhou, followed by Shenzhen and Zhongshan, all of which are neighbours of Hong Kong. Air pollution in Hong Kong hit record levels in September, prompting the government to warn people with heart and respiratory problems to stay indoors.

### **24. 10ppm Sulphur Fuels for Japan**

Japanese refiners will start supplying gasoline and diesel that contain 10 parts per million (ppm) sulphur on 1 January 2005.

The Japanese government requires the oil industry to meet the new standard

nationwide by 2008, but the early introduction follows a voluntary commitment by the Petroleum Association of Japan (PAJ). The fuel will replace the current 50ppm sulphur fuel.

## **25. Beijing facing Pollution "State Of Emergency"**

The Beijing Environment Protection Bureau is quoted in the local press as saying that the Chinese capital is in "a state of emergency" because of air pollution.

Beijing's normally poor air, choked by car exhaust, factory emissions and construction dust, deteriorates when thousands of coal-burning heating plants and smaller domestic coal stoves are lit in the winter.

Improving air quality is critical to the city's drive to be ready to host the 2008 Summer Games and Beijing has set a clean air target for 2004 of 227 days but has fallen well short of this, with 40 more days of clean air still needed. A notice issued by the Beijing Environment Protection Bureau is quoted as urging companies and factories to "strive hard to grab blue skies". At the beginning of October, there was smog so thick that it forced the rescheduling of two shows by a visiting French aerobatics team.

## **GENERAL**

## **26. Paediatricians say Protection of Children needs tighter Standards**

The American Academy of Paediatrics' Committee on Environmental Health has published an important new policy statement on "Ambient Air Pollution: Health Hazards to Children" which finds that there are adverse health effects at levels near or below the current standards for ozone, particulate matter, and nitrogen dioxide, and concludes that the 1997 National Ambient Air Quality Standards (NAAQS) may not adequately protect children.

Specifically, the Policy Statement finds that the current annual and 24-hour NAAQS for PM2.5 and PM10 should be lowered to

protect public health, based on recent scientific studies. In addition, the policy statement cites several studies demonstrating that ozone may be toxic at concentrations lower than the current 8-hour NAAQS, and suggests that the ozone standards may need to be revised if these studies are confirmed.

## **27. Study links Deaths in Urban Areas to Ozone Increases**

A study by the Yale School of Forestry and Environmental Studies published in the Journal of the American Medical Association suggests that ozone causes far more harm than previously realised, with elevated ozone levels in urban areas causing an increase in premature deaths.

According to the EPA-sponsored study which tracked deaths over a 14 year period, increases in ozone levels were associated with spikes in the numbers of deaths in 95 urban areas around the country. The spikes did not correlate with particularly high levels of ozone, but with increases in the concentration of ozone. Many of the deaths were from cardiovascular and respiratory complications. Based on their analysis, the researchers project that an increase of 10 parts per billion (ppb) of daily ozone in a week would result in at least 3767 premature deaths in the 95 cities.

These new findings are likely to place increased emphasis on reducing ozone. In a statement, EPA officials said the study supports the need for continued state and federal efforts to reduce ozone levels.

## **28. European Study finds more Deaths when Ozone Levels are Higher**

A new study from the University of Athens Medical School, reported in the American Journal of Respiratory and Critical Care Medicine, shows that winter brings a break from ozone-related deaths.

The new study collected the environmental daily ozone concentration and tracked the

daily number of deaths in 22 European cities and Tel Aviv, Israel, for at least three years since 1990. Data showed an increase in deaths during warm months, when ozone levels were higher. However, daily ozone concentrations didn't affect mortality during winter in any of the cities.

During the warm season an increase in the one-hour ozone concentration of 10 units was associated with a 0.33% increase in daily death rates. That increase in ozone concentration was associated with significant increases of 0.45% in daily cardiovascular deaths and a 1.13% in daily respiratory deaths. Ozone's impact on mortality was strongest in the study's southern cities, which have larger concentrations of ozone. Daily ozone concentrations had a greater effect on deaths from respiratory problems than on deaths from heart disease.

### **29. Air Pollution may narrow Arteries**

Initial results from research by a team from California's Keck School of Medicine shows that living in polluted areas may accelerate the narrowing of arteries.

They found that artery wall thickness rose as levels of particles with a diameter of 2.5µm or less (PM2.5) increased. Particulate levels varied from 5.2 micrograms per cubic meter (µg/m<sup>3</sup>) to 26.9µg/m<sup>3</sup>, depending on the neighbourhood. After adjusting for age, demographic, lifestyle (including active and passive smoking) and physiologic factors, researchers found that each 10µg/m<sup>3</sup> increase in particulates accounted for a 3.9 to 4.3% rise in carotid artery thickness.

The Director of the National Institute of Environmental Health Sciences (NIEHS), a federal agency that funded the project, said that "These findings suggest that exposure to air pollutants may play an important role in the development of cardiovascular disease."

### **30. Life Expectancy reduced by up to Two Years by PM2.5**

Delegates to a meeting on the UN

Convention on Long-range Transboundary Air Pollution, meeting in Geneva have been told that fine particles, emitted in particular by cars, reduce the life expectancy of people in Europe by up to two years.

One of the authors of a new report from the International Institute for Applied Systems Analysis (IIASA), told a press conference that more urbanised areas of the continent, such as the Benelux countries, northern Italy, Ukraine and Russia are exposed to much higher levels of pollution that reduces the life expectancy of inhabitants by two years.

He explained that due to their minute size, the particles can remain in the air for 40 to 50 hours and travel distances of some 3000 kilometres on the wind.

### **31. Heavy-Duty Manufacturers Meeting on Harmonisation**

Chief Executives of heavy-duty vehicle and engine manufacturers from Japan, Europe and the US have agreed to work together to promote global harmonization of emissions standards and testing methods.

Participants agreed that "government authorities should recognize the importance of internationally harmonized regulations and test procedures as a means to promote the rapid introduction and deployment of cost-effective new technologies to reduce emissions, increase energy efficiency and promote safer vehicles in the future".

They recognized that manufacturers face a significant challenge to meet US, EU and Japanese accelerated emissions reductions over the next decade but believe that the use of advanced fuels integrated with electronic technology, advanced combustion techniques, exhaust gas recirculation (EGR) and after-treatment systems will result in meeting them, with different combinations of after-treatment systems, such as diesel particulate filters, selective catalytic reduction with urea as a reagent and NOx storage reduction. They also agreed to

investigate the prospects of establishing global fuel regulations to support the universal availability of high quality fuels.

The participants agreed to establish four joint Working Groups to focus on:

- Global fuel regulations,
- National application of WHDC procedures,
- After-treatment technology and
- Global Road Safety.

### **32. Consumer and Dealers' Views on Environment**

An automotive telephone survey conducted by Capgemini in Europe, North America and China found that 81% of consumers think that environmental issues are important, but this view is shared by only 48% of OEMs and 34% of dealers.

### **FORTHCOMING CONFERENCES**

#### **Esslingen 5th International Colloquium Fuels**

12-13 January 2005, Stuttgart/Ostfildern, Germany

*The colloquium aims to provide an exchange of ideas and the discussion of all aspects connected with the system 'engine/fuel environment'.*

#### **Symposium on International Automotive Technology**

19-22 January 2005, Pune, India

Details at:

<http://www.araiindia.com/html/siat2005/siatindex.htm>

*Topics will include Durability evaluation techniques, Powertrain, Engine, Emissions (EU3 and beyond), Fuel, Inspection & Maintenance Programmes, Global Harmonisation of Standards, Off-road vehicles, and Emissions inventory and ambient air quality.*

#### **International Conference on Sustainable Transportation in Developing Countries (ENVIRONMENT 2005 Exhibition & Conference)**

30 January - 2 February 2005, Abu Dhabi,

United Arab Emirates.

Details at: [www.ee-uae.com](http://www.ee-uae.com).

*Organized by the Environmental Research & Wildlife Development Agency (ERWDA) and the General Exhibitions Corporation (GEC). The conference marks the first part of a chain of international activities to promote sustainable transportation in developing countries. It will address policy issues related to sustainable transportation and the long term objective is to contribute to the promotion of awareness of environmentally sustainable transportation (EST) and its linkages to the socio-economic, health and environment issues.*

#### **Meeting the Challenge of Climate Change in the Road Transport Sector**

10 February 2005, Gaydon, UK

Details at [www.lowcvp.org.uk](http://www.lowcvp.org.uk)

*The Low Carbon Vehicle Partnership (LowCVP) annual conference will include the 'Green by Design' exhibition on environmental transport with a display of low carbon vehicles from various manufacturers.*

#### **6<sup>th</sup> International Downstream Technology Conference & Exhibition**

9-10 March 2005; Geneva, Switzerland

*Sessions include Response of refiners to Clean Fuels Challenges; update on Clean Fuel Challenges; Advanced Fuels & Lubricants Technologies; Direct production of 10ppm Diesel.*

#### **23rd Annual World Fuels Conference**

9-11 March, 2005, San Francisco, USA

Details at:

<http://www.worldfuelsconferences.com>

*Refining Focus: A new age of advanced catalysts; process technology, management and optimization; advanced system design and engineering; and maximizing operational efficiency, product quality, output and profitability.*

*Automotive Focus: Pushing the envelope in advanced engineering and future concepts for lower emissions, higher fuel economy,*

*consumer acceptance and functionality.*

## **VDA Technical Congress**

16-17 March 2005, Ingolstadt, Germany

*There will be parallel sessions on 'Environment and Energy' and 'Vehicle safety and Electronics'.*

## **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 exhaust emissions, fuel economy and vehicle recyclability.*

## **SAE 2005 World Congress**

11-14 April 2005, Detroit, USA

Details at [www.sae.org/congress](http://www.sae.org/congress)

## **3rd AVL International Commercial Powertrain Conference**

20-21 April 2005, Graz, Austria

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

## **26th International Vienna Motorsymposium**

28-29 April 2005, Vienna, Austria

Details at:

[http://www.oevk.at/symp\\_2005/ankuendigung/](http://www.oevk.at/symp_2005/ankuendigung/)

*Sessions include exhaust gas aftertreatment: "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 <http://www.sae.org/>

*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, and 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/2005/events.html>

## **Beograd 2005 EAEC European Automotive Congress**

30 May - 1 June 2005, Belgrade, Serbia & Montenegro. Details at

[www.jumv.org.yu/eaec2005/prog2.html](http://www.jumv.org.yu/eaec2005/prog2.html)

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

## **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? In addition there are requirements on safety and the introduction of toll systems.*

## **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 [www.ncgg4.nl](http://www.ncgg4.nl)

*The symposium will focus on the non-CO<sub>2</sub> 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.*

## **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.*

## **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.*

## **Ninth Grove Fuel Cell Symposium**

4-6 October 2005, London, UK

Details at [www.grofuelcell.com](http://www.grofuelcell.com)

*The conference will review the latest technological advances, new implementation experiences and market developments in the fuel cell industry.*

## **AECC's NEW OFFICES**

**AECC is now in new offices in the Diamant building in Brussels.**

**Please remember to update your address book:**

**Association for Emissions Control by Catalyst**

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