



# Newsletter

September - October 2007

## INTERNATIONAL REGULATORY DEVELOPMENTS

### Table of Contents

<b>EUROPE</b> .....	<b>2</b>
Progress on the Euro 5 & Euro 6 Technical Regulation.....	2
1 <sup>st</sup> Heavy-duty Euro VI Proposal.....	2
Revised EU 'Framework Directive' and Proposal on Hydrogen Vehicles.....	2
AECC Technical Seminar on Heavy-duty Engine Emissions.....	3
EU Presidency's "Greening the Seas" Conference.....	3
European Environment Agency Assessment Report.....	3
German Court ruling on Fine Particles.....	3
Italian Regional Incentives Schemes.....	4
Norway and UK announce Incentives.....	4
German concerns on Retrofit Filters.....	4
Dutch Report on Particulate Filters.....	4
Dutch Parliament approves Law on Local Air Quality.....	4
Auditors criticise Stockholm for Air Pollution Levels.....	5
French President announces Environmental Policy Initiatives.....	5
Swiss Air Pollution Report for 2006.....	5
Spain will not meet 2010 Pollutant Limits.....	5
Dutch and Austrian Reports on Measures to improve Air Quality.....	5
Study of PM10 in Greater Athens.....	5
Norwegian Power Station with Selective Catalytic Reduction of NOx.....	6
<b>NORTH AMERICA</b> .....	<b>6</b>
US EPA asked to study the 'Weekend Effect' on Ambient Ozone.....	6
Mexico City "Green Plan".....	6
California adopts revised Rules for Aftermarket Catalysts.....	6
California issues Proposal for In-Use, On-Road Private Fleets.....	7
California proposes Regulations for Commercial Harbour Craft.....	7
CARB releases proposed Shore Power Regulation.....	7
US Draft Assessment of NO <sub>2</sub> .....	7
US Hearing on the Climate Change Impact of Black Carbon Emissions.....	7
New US Retrofit Programmes.....	8
US EPA sued over Emissions from Ocean-Going Vessels.....	8
Court Ruling on Auxiliary Ship Engine Emissions.....	8
California Clean Air Projects.....	8
The "Magic School Bus".....	8
<b>SOUTH AMERICA</b> .....	<b>8</b>
Santiago Air Quality Worst in Seven Years.....	8
Brazil starts work on New Refinery with Low-sulfur Capability.....	8
<b>ASIA-PACIFIC</b> .....	<b>9</b>
Japan proposes Emissions Limits for Farm and Construction Vehicles.....	9
South Korea to toughen Auto Emissions Standards.....	9
Hong Kong Emissions and Fuels Regulations.....	9
Beijing Euro IV Buses with SCR.....	9
Sri Lanka to introduce Mandatory Vehicle Emissions Tests.....	9
India to move to 10% Biofuels by 2017.....	10
Beijing adopts Low Sulfur Fuel and restricts Manganese.....	10
<b>MIDDLE EAST</b> .....	<b>10</b>
Israeli Ministers approve Plan to Reduce Pollution by Vehicles.....	10
<b>GENERAL</b> .....	<b>10</b>
ICCT Report on Emissions Impacts of Two- and Three-Wheel Vehicles.....	10
Mercedes launches BlueTec® in Europe.....	10
Researchers identify Diesel Exhaust Links to Heart Attacks and Blood Clots.....	10
Study on Associations between Hospitalisations and PM10, NO <sub>2</sub> , Ozone.....	11
French Study links Particulate Matter in Urban Air to Increased Health Risks.....	11
The Role of Lubricating Oil in Particulate Emissions.....	11
Mandatory Catalysts for UK Motorsport.....	11
<b>FORTHCOMING CONFERENCES</b> .....	<b>12</b>

## EUROPE

### Progress on the Euro 5 & Euro 6 Technical Regulation

The latest draft of the technical part of the Light-duty Euro 5 and Euro 6 Regulation was discussed and agreed at a meeting of the Committee on Adaptation to Technical Progress (CATP) on 1 October 2007. CATP involves the Commission and Member States, but without participation of other stakeholders.

The proposal includes a 'Euro 5+' stage which will introduce the UN/ECE-developed PMP procedures for particulate mass and particle number measurement, with particle number limits of  $6 \times 10^{11}/\text{km}$  and revised particulate mass limits of  $4.5\text{mg}/\text{km}$  (compared to  $5\text{mg}/\text{km}$  at Euro 5). Euro 5+ will be introduced on 1/9/2011 for new Type Approvals, 1/1/2013 for all registrations. There are also some changes to deterioration factors and OBD threshold limits.

The modified text will now go for legal checking, translation and the 3-month scrutiny period by the European Parliament and Council before it is formally published. Publication in the Official Journal is, at the earliest, expected at the beginning of 2008.

### 1<sup>st</sup> Heavy-duty Euro VI Proposal

The European Commission has published an initial proposal for a Euro VI Regulation for discussion at an MVEG stakeholders meeting on 6 November 2007. It has, says the Commission, been developed "with the sole view of consulting stakeholders. It does not constitute a Commission proposal and does not commit the Commission in any way".

The limit values proposed are in line with 'Scenario A' from the Commission's internet consultation, although they now include ESC (steady state cycle) limits for CI engines as well as ETC (transient cycle) limits for both compression-ignition (CI) and spark ignition (SI) engines. The total hydrocarbon (THC) limit remains as  $160\text{mg}/\text{kWh}$  for CI engines, but the limit of  $660\text{mg}/\text{kWh}$  THC for SI engines proposed in the consultation has been altered to  $160\text{mg}/\text{kWh}$  NMHC (non-methane hydrocarbons) +  $500\text{mg}/\text{kWh}$  methane.

The application dates shown are 1 October 2013 for new Type Approvals and 1 October 2014 for all registrations. Financial incentives may be applied by Member States until the 2014 date. Member States may also grant incentives for retrofitting and for scrapping non-complying vehicles, providing the amount does not exceed the additional cost of the technical devices introduced to ensure compliance, including the cost of installation on the vehicle.

Table 1: Euro VI Emission Limits

	Limit values							
	CO (mg/kWh)	THC (mg/kWh)	NMHC (mg/kWh)	CH <sub>4</sub> (mg/kWh)	NO <sub>x</sub> (mg/kWh)	NH <sub>3</sub> (ppm)	PM mass (mg/kWh)	PM (1) number (#/kWh)
ESC (CI)	1500	130			400	10	10	
ETC (CI)	4000	160			400	10	10	
ETC (PI)	4000		160	500	400	10	10	
WHSC (2)								
WHTC (2)								

Key: PI = Positive Ignition, CI = Compression Ignition

(1) A number standard is to be defined at a later stage

(2) The limit values relating to WHSC and WHTC will be introduced, at a later stage, once correlation factors with respect to the current cycles (ESC and ETC) have been established

Durability requirements are increased compared to Euro V. Engines for M1, N1 and M2 vehicles will have to meet a requirement of 160 000km, in line with the light-duty regulations. The 200 000km for N2 & N3 vehicles  $\leq 16$  tonnes and M3  $\leq 7.5$  tonnes is increased to 300 000km, and the requirement for N3  $> 16$  tonnes and M3  $> 7.5$  tonnes rises from 500 000 to 700 000km.

Details of the test procedures for emissions, power, CO<sub>2</sub> and fuel consumption will be established through the 'comitology' process. This requires a second Regulation which will be developed by the Commission and Member States with scrutiny by Parliament, rather than through co-decision of the Council and Parliament. Particle number limits, recalibrated PM limits and revised procedures for their measurement will be included on completion of the PMP programme. The regulation will also cover details of OBD requirements, off-cycle emissions, and reference fuels, amongst other requirements. Limit values for the World-harmonised cycles (WHSC and WHTC) will be introduced once correlation factors have been established. From the 2013/2014 dates only the WHSC and WHTC will be used for type-approval of Euro VI engines and vehicles.

### Revised EU 'Framework Directive' and Proposal on Hydrogen Vehicles

A revised EU 'Framework Directive' for the Type Approval of motor vehicles and components has been issued as Directive 2007/46/EC. This sets the basis for other Directives including those on emissions.

The original Framework Directive (70/156/EEC) has been 're-cast' to extend Community type-approval to all categories of vehicles except tractors and quadricycles. The new Directive also covers vehicles designed and constructed in one or more stages, and replacement components. Type approval under this

Directive is optional for mobile machinery, vehicles for use principally on construction sites or in quarries, port or airport facilities, and those for use by the armed services, fire services and police.

In addition, the Commission has issued a proposal to extend Whole-Vehicle Type Approval to hydrogen-powered vehicles. The Commission says that currently even if a hydrogen vehicle obtains type approval in one Member State, it is not guaranteed that the registration of this vehicle will be authorised in all the other Member States, who may have different requirements. The proposal means that hydrogen vehicles will be treated the same way as conventional vehicles and a single approval (including emissions) will be sufficient for the entire EU.

## **AECC Technical Seminar on Heavy-duty Engine Emissions**

---

On 25 October 2007 AECC hosted a technical seminar on Heavy-duty engine emissions for an invited audience of legislators and stakeholders. Some 80 participants registered for the event including representatives of the European Commission, EU Member States, technical institutes, NGOs and the motor industry.

The morning session, covering Policy and Air Quality, featured 4 speakers from 3 key Directorates-General of the European Commission (DGs Enterprise and Industry, Environment and Joint Research Centre), and speakers from the Dutch Environment Ministry VROM, ACEA and German modelling specialists Ifeu. The Commission presentations covered the expectations for Euro VI, air quality needs and progress on the HD-PMP particulates programme. Following these, there were presentations giving a view from a Member State, the results of modelling air quality in urban areas, and motor industry views on Euro VI. The afternoon session concentrated on technologies, strategies and solutions, with presentations from Ricardo on heavy-duty diesel engine trends, AECC's overview of the emissions treatment technologies available for heavy-duty engines, and three papers presenting data from the AECC Euro VI heavy-duty test programme.

Presentations given at the seminar are available on the AECC website at <http://www.aecc.eu/en/Publications/HD%20Technical%20Seminar.html>

## **EU Presidency's "Greening the Seas" Conference**

---

The Portuguese Presidency of the EU, the German Environment Agency UBA, the International Council on Clean Transportation (ICCT) and Environmental NGO Transport and Environment (T&E) organised a

seminar in Brussels on 17 October 2007 on air pollution and emissions of climate-changing gases from maritime transport. Presentations covered the increasing importance of maritime emissions of NOx, SOx and particulate to European air quality, the competing effects of CO<sub>2</sub> and other substances on the 'greenhouse effect', the role of the International Maritime Organisation, policy options to reduce ship emissions, and options to be considered by the European Commission if the IMO does not make progress in setting new standards. Participants were told that if current trends continue, by 2020 NOx and SOx from maritime sources will be as large as all land-based sources combined.

## **European Environment Agency Assessment Report**

---

The European Environment Agency (EEA) has issued the fourth in a series of reports on progress on environmental issues in Europe as a whole, covering not only the EU but also Eastern Europe, the Caucasus and the Balkans.

The report says that "Air pollution, mainly by fine particles and ground-level ozone, continues to pose a significant threat to health: it shortens average life expectancy in Western and Central Europe by almost one year and affects the healthy development of children. Most air pollutants have increased in Eastern Europe, Caucasus and Central Asia by more than 10% as a result of economic recovery, increases in transport, and the lack of effectiveness of air pollution protection policies. The poor quality of the data from this region precludes an in-depth assessment of air quality and its consequences. However, the limited data available indicates that the main health threat in the area and in South Eastern Europe is, as in Western and Central Europe, from small particles and their toxic constituents". The report is available at [http://reports.eea.europa.eu/state\\_of\\_environment\\_report\\_2007\\_2/en/Summary\\_Belgrade\\_EN.pdf](http://reports.eea.europa.eu/state_of_environment_report_2007_2/en/Summary_Belgrade_EN.pdf)

## **German Court ruling on Fine Particles**

---

The German Federal Administrative Court has confirmed for the first time a citizen's "right to clean air". As a result, citizens can now take legal action against their city authorities and force them to take action to improve air quality if they do not meet legislative requirements on air quality standards. In effect, according to Deutsche Umwelthilfe (DUH), the German environmental action group, this may cause the cities to enforce driving bans for cars not fitted with particulate filters. The decision of the court was based on a complaint by a resident of Munich which was supported by DUH.

## **Italian Regional Incentives Schemes**

---

The European Commission has approved investment aid to the Italian company 'Fercam' to help it replace parts of its lorry fleet with new clean vehicles. Tractors for trucks over 3.5t will be replaced by new models complying with Euro V. The aid will amount to a maximum of 30% of the extra costs incurred for the purchase of a Euro V compatible tractor as compared to a traditional one. Even though Fercam is the only beneficiary of the present measure, other companies established in the Italian province of Alto Adige may also apply for such aid. The allowable budget is €6225 per lorry. Italy foresaw a total budget of €184800.

In Val d'Aosta, northern Italy, the regional 1 million Euro incentives scheme came into force from September 2007. The incentives are offered for scrapping older more polluting motor vehicles and replacing them with new ones or vehicles fitted with particulate filters or powered by alternative fuels. To gain the incentive, the applicant must have been the registered owner for at least twelve months, new cars must meet Euro 4 or Euro 5 and must have CO<sub>2</sub> emissions not greater than 140g/km, while the trucks must have a total weight not greater than 3.5 tonnes.

## **Norway and UK announce Incentives**

---

The Norwegian government's budget for 2008 includes tax incentives to fit particle filters on vehicles, an increase in diesel tax to reduce differentials with petrol and an Nkr5000 (approximately €640) bonus for scrapping older diesel vehicles.

The UK Department for Transport has announced tax incentives to encourage hauliers and bus operators to buy vehicles that meet the full Euro V emissions standard before it becomes mandatory. The country's Reduced Pollution Certificate (RPC) scheme will be extended so that hauliers and bus operators first registering a Euro V compliant vehicle before 1 October 2009 can claim a discount of up to £500 (approx. €750) per year on the annual circulation tax. A vehicle will only be eligible for the discount if it meets the Euro V emissions standard and is fitted with the on-board diagnostic systems and torque control mechanisms that check and control emissions of NOx.

## **German concerns on Retrofit Filters**

---

Following claims by German environmental organisations that certain retrofit particulate control systems do not fully meet the approval requirements, the Kraftfahrt-Bundesamt (KBA) - the German Federal Motor Transport Authority - has started testing at the TÜV Nord emissions laboratories to examine a number of systems. At least 30% of the particulate

must be captured by an aftermarket filter to qualify for the German government's €330 subsidy for retrofits.

KBA says that the final results from testing certain Bosal filters show that they did not meet the requirements defined in Appendix XXVI to Section 47 of the Road Traffic Act, which is the basis for the granting of a general operating permit for a retrofit particle reduction system. The performance of filters from GAT and Tenneco is still under review. However, GAT has returned its permits for five systems and has stopped selling them. Tenneco, has ceased production of 4 systems and KBA has deleted their authorisations. Operation of vehicles in which the affected particle reduction systems have already been installed will not be affected, says KBA.

## **Dutch Report on Particulate Filters**

---

The Dutch Environment Ministry VROM has released details of work carried out to examine the performance of retrofit particulate filters. Earlier this year there were negative reports in the Dutch media concerning retrofit particulate filters suggesting that their fitment resulted in increased toxic emissions and that the filters lead to increases in ultrafine particles. As a result of these reports, VROM commissioned two institutes, TNO and the RIVM, to examine retrofit filter emissions and any associated impacts on health.

The TNO research simulated three driving patterns (urban, extra-urban and motorway) with existing, representative diesel vehicles. Emissions measurements were made with and without retrofit filters, including partial filters. The tests showed no increase in emissions of oxo- and nitro-PAH's by the application of retrofit filters: no increase of reactive organic and/or mutagenic components was seen and there was no increase in the total number of particles. Measurements indicate that ultrafine particles as a proportion of the total number of particles are more or less constant.

VROM says that from the studies it is clear that there is no reason for concern: the results of the research show no increase of extra emissions of detrimental substances by the application of retrofit filters.

## **Dutch Parliament approves Law on Local Air Quality**

---

The upper chamber of the Dutch Parliament has supported a comprehensive new air quality law that mandates local authorities to establish remediation programmes for air pollution hot-spots. The law sets out how air pollution will be tackled in areas where EU norms are exceeded. It will enter force in spring 2009 but implementation has already begun. New infrastructure developments will be taken into account.

## **Auditors criticise Stockholm for Air Pollution Levels**

---

City of Stockholm auditors have criticised local politicians for doing too little to reduce levels of particulate matter pollution and NO<sub>2</sub> emissions in the Swedish capital. A review by the auditors has found that some 10 to 20 streets in the city still have emissions levels that exceed air quality standards. The report proposes measures to reduce through-traffic on roads with heavy emissions, and calls for more park-and-ride car parks. It also proposes a fee to reduce studded tyre use and higher fees for parking in central Stockholm.

## **French President announces Environmental Policy Initiatives**

---

French President Nicolas Sarkozy has announced proposals to reshape French environmental policy. Many of the measures proposed focus on road transport, with the aim of cutting greenhouse gas emissions from the roads by 22% by 2020.

M. Sarkozy pledged to tax trucks crossing France and revived an idea floated by his predecessor Jacques Chirac that would impose higher taxes on products imported from countries that did not respect the Kyoto Protocol on global warming. Tramway and TGV high-speed train networks are to be extended, and drivers coaxed into buying lower-CO<sub>2</sub> cars through bonuses and penalties. He committed the French government to investing one billion Euros over four years for the development of the fuels and engines of the future. Further consultations will be held before the end of the year and Parliament is expected to legislate in the first half of next year.

## **Swiss Air Pollution Report for 2006**

---

The Swiss Environment Ministry has published their country's annual report for 2006 on air pollution.

The report says that as in previous years, the limit values for NO<sub>2</sub> were sometimes exceeded in large cities and along the principal roads. In suburban zones, air quality was close to the limiting value or below and in rural zones levels were clearly below the limiting value. At places with high traffic volumes the NO<sub>x</sub> figures decreased more clearly than the values of NO<sub>2</sub>. That means, says the report, that the relationship between NO and NO<sub>2</sub> has systematically changed during these latter years, but with a reduction of NO<sub>x</sub> emissions and a potential of oxidation of the atmosphere which remains constant, one could, however, expect such an evolution.

On fine particles, the report says that in suburban areas the measured annual averages ranged between

23 and 38µg/m<sup>3</sup> compared to the limit value of 20µg/m<sup>3</sup>. In rural zones along motorways, figures were between 26 and 27µg/m<sup>3</sup>. The daily limit value of 50µg/m<sup>3</sup> was exceeded on up to 66 days.

## **Spain will not meet 2010 Pollutant Limits**

---

According to a revised national implementation programme presented on 6 September 2007, Spain will exceed two of four national air pollutant emissions ceilings set for 2010. The new projections predict that Spain will exceed the caps on NO<sub>x</sub> by 37.5% and on volatile organic compounds by 33.9%. The plan says that imminent national air quality legislation will reduce emissions further, but "urgent additional measures" may still be needed. The government blames unpredicted economic and population growth for persistently high NO<sub>x</sub> and VOC emissions.

## **Dutch and Austrian Reports on Measures to improve Air Quality**

---

Air quality in the Netherlands must be improved by new national measures rather than EU policies, the Dutch environmental assessment agency (MNP) says in a new report. It recommends new national policies to meet PM<sub>10</sub> and NO<sub>2</sub> air quality limits for 2015, as these measures can be implemented relatively quickly. Road pricing is highlighted as the most cost-effective option, but soot filters and de-NO<sub>x</sub> technology for inland shipping and advanced dust abatement techniques in industry are also listed. The agency says EU policies are more important for longer-term air quality improvements.

Meanwhile Austria's environmental assessment agency has reported that emissions of particulate matter (PM<sub>10</sub>) and nitrogen dioxide (NO<sub>2</sub>) exceeded limit values laid down in EU ambient air quality legislation "numerous" times in 2006. Average PM<sub>10</sub> values broke legal limits at 70 of 111 measuring stations, against 58 last year and 28 the year before. NO<sub>2</sub> also continued a rising trend since 2000, with road traffic the main culprit. Ozone levels were "slightly above average" in 2006 and the EU's 2010 target value for ozone was exceeded at 57% of measuring stations.

## **Study of PM<sub>10</sub> in Greater Athens**

---

A study from the National Technical University of Athens and the University of Ioannina, analyses PM<sub>10</sub> concentration data collected by the Greek air quality monitoring network at 8 sites over the Greater Athens Area, for the period of 2001-2004.

The four-year average concentration of PM<sub>10</sub> at five sites exceeded the annual limit value of 40µg/m<sup>3</sup>, while most of the sites surpassed the allowed

percentage of exceedances of the daily limit value ( $50\mu\text{g}/\text{m}^3$ ), for each of the four years. The group including urban sites was mainly affected by primary, combustion-related processes and especially vehicular traffic. Suburban background sites seemed more affected by particle transport from more polluted neighbouring areas and secondary particle formation through gaseous precursors, both processes aided by favourable meteorological conditions.

*Source:* G. Grivas et al, An overview of the PM10 pollution problem, in the Metropolitan Area of Athens, Greece. Assessment of controlling factors and potential impact of long range transport; Science of the Total Environment, <http://dx.doi.org/10.1016/j.scitotenv.2007.08.048>

## **Norwegian Power Station with Selective Catalytic Reduction of NOx**

Norway's first large scale gas fired power plant, which is expected to be in commercial operation from November 2007, claims to be the cleanest fossil fuel power plant in Europe. It will have NOx emissions of only 2ppm as a result of its SCR deNOx system. The catalyst is designed so that at base load operation it will reduce the flue gas NOx concentration by 90% from approximately 20ppm down to around 2ppm. Ammonia injection is controlled by a computer that continuously monitors the NOx concentration of the untreated flue gas. The plant will use 25% aqueous ammonia, consumed at a rate of approximately  $25\text{m}^3$  per week. It is estimated that the catalyst will last for at least ten years without servicing or renewal.

## **NORTH AMERICA**

### **US EPA asked to study the 'Weekend Effect' on Ambient Ozone**

A former head of the US Environmental Protection Agency's Scientific Advisory Board who is now a representative of the International Truck & Engine Corp., is urging the EPA to study the 'weekend effect' which occurs when dramatic drops in nitrogen oxide (NOx) emissions due to less traffic congestion on weekends cause increases in ambient ozone levels.

The intent is for EPA to make the study within the next 18 months so that the results could influence the implementation rules that the agency will have to issue after it finalises its new ozone national ambient air quality standard (NAAQS). Some scientists see the weekend effect as a warning that further study is necessary to ensure the viability of the agency's ozone implementation strategy, which focuses more on cutting NOx than other precursors to ozone formation, such as volatile organic compounds (VOCs) or hydrocarbons. Weekend NOx levels represent what would be achieved by EPA regulatory programmes in 10 to 20 years and these observers

say it may mean that EPA should focus more on reducing the other precursors rather than on NOx.

California's air quality officials have strongly opposed the veracity of the weekend effect, saying that simply correlating NOx emissions and ozone levels in metropolitan areas does not account for the complicated chemical interactions that lead to ground-level ozone formation.

## **Mexico City "Green Plan"**

The government of Mexico City has published a wide-ranging "Green Plan" including a number of transport-related proposals for addressing air quality in the city.

The plan includes requiring that all metropolitan buses meet Euro IV emissions requirements and that ultra-low sulfur diesel fuel (15ppm S max.) be used in all public transport vehicles by 2008-2009. It will also require renovation of the taxi fleet with cleaner vehicles, the replacement of thousands of micro-buses with cleaner, larger buses, and the introduction of mandatory emissions testing for heavy-duty trucks. Further proposals would involve replacing the government fleet with cleaner, more efficient vehicles by 2012, extending license plate-based driving restrictions to Saturdays (they currently apply only on weekdays) and mandatory bussing for school pupils.

## **California adopts revised Rules for Aftermarket Catalysts**

The California Air Resources Board (CARB) has adopted amendments to the State's regulations on aftermarket catalytic converters. CARB's current requirements were adopted in 1988. CARB says that, with the significant advances in the emissions control performance and durability of motor vehicles since 1988, improvements to the requirements for aftermarket catalysts are needed to keep pace.

The current procedures require at least 70% conversion efficiency for HC and CO and 60% efficiency for NOx, for a period of 25 000 miles. The amendments would replace these requirements with performance standards based on reducing engine-out emissions to levels which would allow the vehicles to comply with certification emissions standards for 5 years or 50 000 miles. The proposals would apply to all new aftermarket catalytic converters sold, advertised, or installed on or after 1 January 2009. The amendments would also require manufacturers to demonstrate that their aftermarket converters are compatible with the catalyst malfunction detection monitoring that is part of the OBD II system.

The proposed amendments would also end the provisions allowing the sale of used original equipment catalytic converters.

## **California issues Proposal for In-Use, On-Road Private Fleets**

---

The California Air Resources Board (CARB) has issued regulatory proposals for private fleets of in-use heavy-duty, on-road vehicles. It proposes bringing the entire in-use truck fleet up to equivalent of 2007 model year levels by 2014.

Fleet owners must comply through any combination of fitting Best Available Control Technology (BACT) and fleet averaging rules. Options include re-powering, retrofitting, or replacing vehicles. Early action credits are offered for vehicles that have had the highest level of Verified Diesel Emissions Control System (VDECS) installed by the end of 2009 and further action on those vehicles will be delayed until 2013.

The Best Available Control Technology requirements are introduced in two phases. Phase 1 requires that all pre-2004 vehicles meet or exceed 2007 model year NO<sub>x</sub> emissions limits by 2013 (phased in by year) and must install highest level VDECS for PM. All 2005 and newer vehicles must meet this requirement by 2014. Phase 2 requires that pre-2004 vehicles meet or exceed 2010 model year NO<sub>x</sub> limits by 2017.

## **California proposes Regulations for Commercial Harbour Craft**

---

The California Air Resources Board (CARB) has released its proposed Commercial Harbour Craft regulation for public comment. The proposal includes requirements for both new and in-use engines in commercial harbour craft operating within 24 nautical miles of the California coastline. The proposal would establish in-use emissions limits for both auxiliary and propulsion diesel engines on ferries, excursion vessels, tugboats, and towboats. The requirements would be consistent with those of the US EPA.

CARB proposes that existing harbour craft with Tier 0 and Tier 1 marine engines must meet EPA Tier 2 or Tier 3 (or better) emissions standards. All new harbour craft engines and replacement engines would have to meet emissions limits at least equal to the EPA marine engine standards in effect at the time the new vessel or engine is purchased. Propulsion engines on new ferries would also have to install best available control technology, which CARB recommends be determined on a case-by-case basis. Existing vessels would have a phase-in compliance schedule starting in 2009 for pre-1975 vessels and ending with 2007 model year vessels in 2022. There would be some allowances in the schedule for retrofitted and rebuilt engines.

The proposal was considered by the Board at the end of October, but CARB staff were asked to address some concerns and re-submit in November.

## **CARB releases proposed Shore Power Regulation**

---

The California Air Resources Board (CARB) has released its proposed regulation to reduce the emissions from the auxiliary engines of ocean-going vessels when at berths in port. The goal of the regulation is to reduce such emissions by 80%.

CARB has proposed two compliance options:

- a) Limiting auxiliary engine operation option for container, passenger, or refrigerated cargo vessels using shore power. This would set a maximum period of operation for auxiliary engines.
- b) An emissions reduction option under which operators would be required to reduce their auxiliary engine emissions at a port by specific amounts and by specific dates which would vary depending on the type of emissions reduction techniques applied.

Until 1 January 2014, generation equipment providing distributed power at the ports must satisfy the emissions standards applying to new spark-ignited off-road engines. After 1/1/2014 the equipment must satisfy a more stringent emission standard that is equivalent to a spark-ignited engine using Best Available Control Technology (BACT). Additionally, the source of electrical power must emit no more CO<sub>2</sub> emissions than a combined-cycle gas turbine.

## **US Draft Assessment of NO<sub>2</sub>**

---

The US Environmental Protection Agency (EPA) has released for comment a draft assessment of the health effects of nitrogen dioxide (NO<sub>2</sub>). The draft paper, *Integrated Science Assessment for Oxides of Nitrogen - Health Criteria* represents EPA's evaluation of the latest scientific literature. EPA's Clean Air Scientific Advisory Committee (CASAC) will review the new assessment at a meeting later this year and a second draft will be released some time next year, at the same time as EPA will consider whether to tighten its National Ambient Air Quality Standard for NO<sub>2</sub>.

## **US Hearing on the Climate Change Impact of Black Carbon Emissions**

---

On 18 October 2007, five experts on the effect of black carbon emissions in climate change testified before a US Congressional Committee. Members heard that evidence is mounting that black carbon emissions, which largely result from fuel combustion, have a significant impact on global warming. It has been suggested that the impact of black carbon emissions may be second only to CO<sub>2</sub> in terms of climate change effects. A video of the hearing along with copies of the experts' testimony are available at <http://oversight.house.gov/story.asp?ID=1550>.

## **New US Retrofit Programmes**

---

The US city of Boston has announced a new diesel retrofit grant programme for Boston-based commercial diesel truck fleets to retrofit their vehicles with pollution control technologies. Boston has already retrofitted over 600 municipal vehicles with diesel oxidation catalysts and switched its fuel to a biodiesel blend. The Air Pollution Control Commission will administer the grant programme and eligible projects will be funded over two years.

The Ohio Environmental Protection Agency has received recommendations to reduce diesel vehicle emissions in the region. They include a voluntary diesel retrofit programme for part of the region.

## **US EPA sued over Emissions from Ocean-Going Vessels**

---

Environmental organisation Earthjustice has filed a lawsuit against the US Environmental Protection Agency (EPA) for not taking action to reduce emissions from ocean-going vessels that call on ports within the US. In their lawsuit, Earthjustice cited a Court of Appeals decision in 2003 that required EPA to issue regulations governing ships by April 2007. EPA responded to the lawsuit indicating that it was working within the International Maritime Organization (IMO) to develop new international agreements covering these emissions and negotiations on these are expected to be completed in 2008.

## **Court Ruling on Auxiliary Ship Engine Emissions**

---

A District Court in the US has ruled that the California Air Resources Board (CARB) does not have the authority to support its rule on auxiliary engines of ocean-going ships, introduced on 1 January 2007. The rule requires ocean-going vessels to use low sulfur gas oil or diesel fuel for their auxiliary diesel engines when they are operating within 24 nautical miles of the California coast line. The rule was challenged in court by the Pacific Merchant Shipping Association. CARB must now get authorisation from the US Environmental Protection Agency before it can enforce these regulations.

## **California Clean Air Projects**

---

The California Air Resources Board has released a draft concept paper on the first phase of \$1 billion of funding for projects to reduce air pollution associated with the movement of goods by trucks, trains, ships and harbour craft. CARB will convert the concept into guidelines, to be approved by the end of this year.

Projects expected to be supported include the replacement, retrofitting or re-powering of older trucks used to serve ports and inter-modal rail yards, as well as to transport goods and farm produce throughout the state. In addition, support would be provided for the replacement of older 'switch' (shunting) engines and other locomotives by new models meeting ultra-low emissions levels; for the replacement of existing diesel engines on harbour craft; for the replacement of cargo handling equipment; and for provision of electric power at truck stops to reduce diesel idling.

## **The "Magic School Bus"**

---

The US Environmental Protection Agency (EPA) has teamed up with Scholastic - a children's publishing, education and media company - on an innovative new book to show children what can be done to protect their lungs and their world from air pollution. 'The Magic School Bus' has for decades entertained American children and educated them about innovation and science. Now 'The Magic School Bus Gets Cleaned Up' shows how it can become more environmentally friendly at the same time. Scholastic's travelling Magic School Bus, which is an interactive science experience for children now has a new diesel particulate filter installed which reduces its PM emissions by up to 90%.

## **SOUTH AMERICA**

### **Santiago Air Quality Worst in Seven Years**

---

Air quality in Santiago is at its worst level for seven years, according to a preliminary report published by Chile's National Environment Centre (CENMA). Between April and August this year, 28 days were categorised as critical episodes, the highest number since 2000. Located in a steep basin with little wind, Santiago is naturally susceptible to atmospheric pollution. Air quality had improved markedly over the last decade, helped by improvements in fuel quality, the spread of catalytic converters, and the arrival of cleaner-burning natural gas, but the improvements have been curtailed by the city's continued population growth. The situation was aggravated this year by an especially cold winter, which led to a greater use of wood-burning stoves, problems implementing a new public transport system, and caused industry to revert to dirtier fuels.

### **Brazil starts work on New Refinery with Low-sulfur Capability**

---

Brazil has initiated work on a new refinery at Abreu de Lima in Pernambuco state. The project is the first after 27 years with no new refineries built in the country. The new unit will use heavy oil from Brazil and

Venezuela and its main production focus will be on diesel fuel, particularly aimed at supplying the increased demand from the northeast of the country. It will be capable of producing low-sulfur derivatives including 10ppm sulfur diesel to European standards. The legislation currently in effect in Brazil allows sulfur contents of up to 500ppm in metropolitan regions, but will be changed in 2009 to 5ppm, for metropolitan diesel. The refinery will start its operations producing diesel fuel with 50ppm sulfur.

## ASIA-PACIFIC

### Japan proposes Emissions Limits for Farm and Construction Vehicles

---

The Japanese Ministry of the Environment's key policy panel has released draft regulations intended to reduce emissions of particulate matter and NOx from construction, farming, and other off-road specialty vehicles by approximately 90% from current levels by the middle of the next decade. The standards would be implemented in phases beginning in 2009.

According to the Environment Ministry specialty vehicles account for as much as 18% of Japan's total particulate emissions and 31% of NOx emissions. The proposals would cut particulate emissions from these vehicles by 88% to 93% between 2011 and 2013 by requiring the use of diesel particulate filters. For nitrogen oxides, emissions from diesel specialty vehicles with power output exceeding 56kW would be cut by 80% to 88% between 2014 and 2015.

### South Korea to toughen Auto Emissions Standards

---

The South Korean Ministry of Environment has announced a set of revised automotive emissions standards aimed at closing South Korea's "one-to-two-year gap" with the EU and US in the area of vehicle emissions control. The tougher requirements will be incorporated into rules under the Air Quality Preservation Act for phased enforcement from January 2009, beginning with the same requirements as California's fleet average emissions targets for new gasoline cars. New diesel passenger cars should meet the European Union's Euro 5 emissions requirements, starting in September 2009. Euro V compliance will be required for diesel trucks and buses, effective from January 2009.

### Hong Kong Emissions and Fuels Regulations

---

Under a new bill to be introduced early next year, Hong Kong is to ban Industrial diesel fuel for all applications except ferries and will cut the duty on

ultra-low sulfur diesel (ULSD) for 2 years. There will be a HK\$1 billion Environment and Conservation Fund to be used for educational, research and technology demonstration projects, and the administration will also launch a public consultation soon on whether to ban idling engines, and will re-examine road pricing based on new technology.

Hong Kong's principal environmental protection officer has also said that the government is considering bringing in tougher standards for new light vehicles within two years, and that new vans, light buses and trucks may be required to meet the Euro V standards in 2011. Euro IV has applied to new trucks and buses registered in Hong Kong since 1 October 2006.

### Beijing Euro IV Buses with SCR

---

Beijing's transport authorities are phasing out thousands of older diesel buses and replacing most of them with buses meeting Euro IV emissions standards before the 2008 Olympic Games. About 450 of the SCR-equipped buses will be on Beijing streets by the end of 2007, with an additional 600 buses scheduled for 2008. The SCR catalysts are currently being incorporated into 6.5-litre and 8.4-litre diesel engines made by Yuchai Machinery Corporation, the largest engine manufacturer in China.

### Sri Lanka to introduce Mandatory Vehicle Emissions Tests

---

Sri Lanka's Environment Ministry says that 200 independent Vehicle Emissions Testing Centres are expected to go into operation next year. No vehicle will be able to renew its annual revenue licence after April 2008 without passing an emissions test conducted by one of these centres. These computerised centres will be linked to data banks of the authorities which renew revenue licences annually and police are empowered to carry out random checks.

Preliminary surveys have revealed that 10 to 20% of the vehicles on Lankan roads are expected to fail the emissions tests. Though most people are concerned about air pollution in Colombo, the Ministry says that the problem in Kandy is far worse as Kandy is situated in a valley surrounded by hills. Air quality measurements made by Peradeniya University in Kandy found that 66% of the time the air quality exceeded health standards. Among the four pollutants analysed, particulate matter is the dominant pollutant, while sulphur dioxide is the second pollutant that exceeds stipulated air quality standards, the survey revealed. The country's sole Ambient Air Quality Testing Centre is situated in Colombo.

## **India to move to 10% Biofuels by 2017**

Speaking at the International Symposium on Biofuels in New Delhi, the Indian Petroleum Secretary announced that India plans to replace 10% of its transport fuels by biofuels in the next 10 years. Currently India uses a 5% ethanol/petrol blend.

## **Beijing adopts Low Sulfur Fuel and restricts Manganese**

Beijing's new fuels specifications, to be put into use from 1 January 2008, have been approved by the State Council. The key parameters are a maximum sulfur content of 0.005% for both diesel and gasoline and a maximum manganese concentration of 0.006g/litre for gasoline.

## **MIDDLE EAST**

### **Israeli Ministers approve Plan to Reduce Pollution by Vehicles**

Israel's Ministerial Committee on the Environment and Hazardous Materials has approved a plan to reduce vehicle pollution. It is intended to significantly decrease dangerous levels of air pollution as well as decreasing fuel consumption and reducing traffic. The plan includes new, severe standards for automobile exhaust gases. It includes rules limiting pollutants from diesel vehicles as well as carbon dioxide emissions levels for gasoline-powered cars.

The green police will be allowed to remove from the roads vehicles that exceed the limits. In addition, all government and public transport will gradually switch to fuel-saving and environmentally friendly vehicles. Starting in January 2008 entry of diesel vehicles more than five-years old to Tel Aviv city centre will be restricted unless they have emissions controls installed. Also included in the plan is the disposal of old cars in return for payments to their owners. Roadside emissions tests will also be reinstated. Employees will be encouraged to travel to work on public transport. Vehicle taxes will take into account an environmental rating. Also, financial incentives for non-petroleum alternative fuels will be set.

## **GENERAL**

### **ICCT Report on Emissions Impacts of Two- and Three-Wheel Vehicles**

The International Council on Clean Transportation (ICCT) has released a new report that discusses the air quality impacts of two- and three-wheel vehicles that are a primary transportation mode in many cities throughout Asia. It includes a summary of the current

regulatory environment for these types of vehicles and a summary of available control measures.

China, India, Indonesia, Thailand, Taiwan and Vietnam all have substantial population of bikes and many have annual growth rates in excess of 10% for motorcycles. In cities like Delhi, Bangkok, and Ho Chi Minh City, motorcycles are estimated to produce 70% or more of the total transportation related volatile organic compound (VOC) emissions.

The report is available at: [www.theicct.org/reports\\_live.cfm](http://www.theicct.org/reports_live.cfm)

## **Mercedes launches BlueTec® in Europe**

Mercedes staged a major effort on 'environmental' products at the Frankfurt International Motor Show, including the launch of BlueTec for the European market. Most of the main floor in DaimlerChrysler's



hall was taken up with a display of green technologies, including the E300 BlueTec due for European launch this

year, R320 BlueTec and C-class versions including a BlueTec hybrid, and an S-300 Hybrid intended for launch by 2010.

## **Researchers identify Diesel Exhaust Links to Heart Attacks and Blood Clots**

A study conducted by researchers at the University of Edinburgh in Scotland and Umea University in Sweden has indicated how air pollution may be associated with heart attacks. In the test work, 20 men with stable coronary heart disease inhaled dilute diesel exhaust or filtered air whilst riding a bicycle in the laboratory. The researchers found that inhaling the exhaust reduced the amount of oxygen available to the heart during exercise and resulted in a three-fold increase in stress on the heart by altering its electrical activity. The risk of blood clots was also increased. Whilst it was not possible to determine from the tests which constituents of diesel exhaust were responsible for the observed effects, the researchers suggest that the effect may be linked to particle emissions and they plan to repeat the test with a particulate filter installed.

*Source:* Mills et al, Ischemic and Thrombotic Effects of Dilute Diesel-Exhaust Inhalation in Men with Coronary Heart Disease; The New England Journal of Medicine, Vol. 356, 1075-1082, 13 September 2007.

A second study, from researchers at Northwestern University, the University of Illinois and the US Environmental Protection Agency identifies a mechanism by which PM10 can trigger clotting in the blood, thus helping to explain how air pollution causes heart attacks and strokes. The researchers found higher levels of several proteins linked to blood

clotting in the lungs of mice exposed to diesel exhaust particulate. The evidence suggested that an immune response to particles in the lungs caused the inflammation that led to clots. Clots in turn can lead to heart attacks and strokes.

*Source:* Mutlu et al, Ambient particulate matter accelerates coagulation via an IL-6-dependent pathway; J. Clin. Invest. doi:10.1172/JCI30639.

## **Study on Associations between Hospitalisations and PM10, NO<sub>2</sub>, Ozone**

A new study from France, to be published in Science of the Total Environment, aims at estimating the association between PM10, NO<sub>2</sub> and ozone and hospitalisations for cardiovascular diseases in eight French cities during the period 1998-2003.

The daily number of hospitalisations in each city was extracted from the French hospital information system for cardiovascular diseases, cardiac diseases, ischemic heart diseases and stroke. Excess relative risks of hospitalisation associated with a 10µg/m<sup>3</sup> increase in pollutant levels were estimated in each city. The results show that the daily number of hospitalisations for cardiovascular diseases was associated with PM10 levels and with NO<sub>2</sub> but not with ozone. Associations were stronger in people aged 65 years and over, and when only hospitalisations for ischemic heart diseases were considered. No association was found between strokes and air pollution levels.

The authors say that their study suggests that the ambient levels of air pollutants currently experienced in the 8 French cities, which are close to European air quality guidelines, are still linked to a short term increase of hospitalisations for cardiovascular diseases. These results are, they say, consistent with epidemiological and toxicological data on the cardiovascular effects of air pollution.

*Source:* Larrieu et al, Short term effects of air pollution on hospitalizations for cardiovascular diseases in eight French cities: The PSAS programme; Science of the Total Environment doi:10.1016/j.scitotenv.2007.07.025.

## **French Study links Particulate Matter in Urban Air to Increased Health Risks**

A 25% reduction in urban air pollution concentrations could drastically reduce premature deaths and hospitalisations, according to a study by the French National Institute for Public Health Surveillance (InVS). The study, *Health Impact Assessment of Urban Air Pollution - Area of Dijon Short and Long-term Impacts*, assessed the health impacts of exposure to urban air pollutants among residents of the central French city of Dijon.

Researchers assessed average exposure to sulfur dioxide, nitrogen dioxide, ozone, and small particles (PM10) and then extrapolated health impacts across the region, which is home to 190 000 people. The results show that air pollution contributed to premature deaths of 24 residents of the survey area and was the principal cause of an estimated 95 hospitalisations linked to cardiovascular disorders as well as eight hospitalisations for respiratory reasons in adults aged 65 years and over. A 25% decrease in contaminant levels would help avoid more than one-third of the premature deaths and hospitalisations attributable to air pollution, while a major long-term reduction in small particle levels could help avoid most of the deaths, according to the study.

InVS encouraged policymakers to take preventive action to reduce problematic air pollution conditions like ozone, which develop under specific conditions, rather than only taking action "when atmospheric pollution exceeds the standard levels."

*Source:* Évaluation de l'impact sanitaire de la pollution atmosphérique urbaine. Agglomération de Dijon - Impact à court et long terme; [http://www.invs.sante.fr/publications/2007/eis\\_pollution\\_dijon/index.html](http://www.invs.sante.fr/publications/2007/eis_pollution_dijon/index.html)

## **The Role of Lubricating Oil in Particulate Emissions**

US researchers have investigated the contribution of lube oil to particulate emissions by characterising the emissions from a modified CAT 3304 diesel engine fuelled with hydrogen. The engine produced exhaust aerosol with a geometric mean particle size diameter ranging from 18 to 31nm. The particles contained organic carbon, little or no elemental carbon, and a much larger percentage of metals than particles from diesel engines. The maximum total carbon emission rate was estimated at 1.08g/h, which is much lower than the emission rate of the original diesel engine. There was also evidence that less volatile elements, such as iron, self-nucleated to form nanoparticles, some of which survive the coagulation process.

*Source:* A.L. Miller et al, Role of Lubrication Oil in Particulate Emissions from a Hydrogen-Powered Internal Combustion Engine; Environ. Sci. Technol., 41 (19), 6828 -6835, 2007

## **Mandatory Catalysts for UK Motorsport**

The governing body of UK motor sport, the Council of the Motor Sport Association, has confirmed that amongst a number of regulation changes that will be adopted for the 2008 season is a requirement to fit catalytic converters. Catalytic converters will be required for all production based touring, saloon and sports cars, including specialist production and kit cars, from January 1 2009 and for newly registered championships from January 1 2008.

## FORTHCOMING CONFERENCES

### **3<sup>rd</sup> International Environmentally-Friendly Vehicles Conference**

19-20 November 2007, Dresden, Germany

*The conference basis will be targets for CO<sub>2</sub> reduction, fuel efficiency and reduction of pollutant emissions, EF vehicles (including biofuels, CNG/LPG and existing technologies) and measures, including tax incentives and regulations.*

### **Spark Ignition Engine Emissions Short Course**

19-23 November 2007, Leeds, UK

Details at <http://www.engineering.leeds.ac.uk/cpd/AutoSparkEmissions.shtml>

### **4th ACEM Annual Conference Urban Mobility: the Powered Two-Wheeler contribution to better quality of life in cities**

20 November 2007, Brussels, Belgium

*For many urban trips powered two-wheelers are an alternative to the use of cars. How to achieve free-flowing mobility while at the same time reducing congestion, pollution and accidents is a challenge ACEM is determined to pursue together with EU legislators, city authorities and citizens organisations.*

### **Materials in Exhaust Gas Technology**

21-22 November 2007, Stuttgart, Germany

*The main topics include materials in the catalytic area, lightweight construction in exhaust gas systems, matting for ideal mounting and material requirements for built-in components.*

### **The Spark Ignition Engine of the Future: Technologies To Meet The CO<sub>2</sub> Challenge**

28-29 November 2007, Strasbourg, France

Details at [http://www.sia.fr/evenement\\_detail\\_the\\_spark\\_ignition\\_engine\\_870.htm](http://www.sia.fr/evenement_detail_the_spark_ignition_engine_870.htm)

*This new SIA international Congress is intended to provide the opportunity for experts from the automotive industry, the oil industry, research laboratories and universities to exchange opinions and information on the potential of the future spark ignition engine to meet the low CO<sub>2</sub> challenge.*

### **Danish Development Research Network workshop on Urban Environmental Management and Air Quality in Less Developed Countries**

30 November 2007, Valby, Denmark

*The workshop will address the complexity of air pollution management in the growing cities in the less developed countries. The workshops discussions and outlined recommendations will be debated and evaluated in a newly established working group under the Danish Development Research Network lead by the National Environmental Research Institute and this work will form the basis of an integrated Scandinavian working group.*

### **Maritime Air Emissions: Examining Ships and Ports**

11-12 December 2007, London, UK

Details at <http://www.lloydslistevents.com>

*The conference offers detailed insight into the latest developments regarding responses to national, regional and international regulations pertaining to SO<sub>x</sub>, NO<sub>x</sub>, CO<sub>2</sub> and particulates. Programmes include the pros and cons of a move to distillate fuel, developments in emissions abatement technology, and novel approaches to emissions reduction.*

### **Internal Combustion Engines: Performance, Fuel Economy and Emissions**

11-12 December 2007, London, UK

Details at [www.imeche.org.uk/events/ICE](http://www.imeche.org.uk/events/ICE)

*This conference will cover large and small engines for on and off highway applications. The four main themes will be performance, fuel economy, fuels and emissions. It will address the challenges of climate change, regulations and market fragmentation.*

### **Truck & Bus World Forum**

12-14 December 2007, Lyon, France

Details at [http://www.tnb2007.com/data/program\\_GB.pdf](http://www.tnb2007.com/data/program_GB.pdf)

*The forum will address subtopics related to goods distribution and first steps towards intelligent trucks, public transport in urban areas, paying for mobility, economics and strategies for sustainable transport solutions, and American and Asian markets.*

### **6. International CTI Forum Exhaust Systems**

28-31 January 2008, Nürtingen, Germany

*Developments on aftertreatment for diesel and SI engines, SCR, DPF, catalyst systems, sensors, in-engine measures and emissions legislation.*

### **5<sup>th</sup> International Exhaust Gas and Particulate Emissions Forum**

19-20 February 2008, Ludwigsburg, Germany

Details at [www.forum-emissions.com](http://www.forum-emissions.com)

### **6<sup>th</sup> International Symposium of Fuels and Lubricants**

9-12 March 2008, New Delhi, India

*Conference topics will include emissions regulations and control technologies, fuel additives and biofuels.*

### **3rd International Conference & Exhibition on Ecological Vehicles and Renewable Energies**

27-30 March 2008, Monte-Carlo, Monaco

Details at <http://www.conference.evermonaco.com/>

*EVER'08 is intended to be a forum of specialists coming from both universities and industries, involved in R&D projects in the area of ecologic vehicles and of renewable energies.*

## **Alternative Energies for the Automotive Industry**

2-3 April 2008, Poitiers, France

Details at

<http://www.sia.fr/files/evenement/onglet/1934/Call%20for%20Papers%20AEA.pdf>

## **2008 SAE World Congress**

14-17 April 2008, Detroit, Michigan, USA

## **Transport Research Arena 2008**

21-24 April 2008, Ljubljana, Slovenia

Details at <http://www.traconference.com/>

*The event is organised jointly by the Conference of European Directors of Roads, the European Commission and the European Road Transport Research Advisory Council.*

## **i-SUP 2008 Innovation for Sustainable Production 2008**

22-25 April 2008, Bruges, Belgium

Details at <http://www.i-sup2008.org/>

*Conference sessions include production and application of nanomaterials, urban growth and air pollution, and methods for toxicity screening.*

## **29<sup>th</sup> International Vienna Motor Symposium**

24-25 April 2008, Vienna, Austria

*The latest results in worldwide engine and powertrain development, future legislation and exhaust emissions control.*

## **Diesel Engines: The low CO<sub>2</sub> and Emissions Reduction Challenge**

28-29 May 2008, Rouen, France

Details at: [http://www.sia.fr/evenement\\_detail\\_diesel\\_engines\\_moteur\\_diesel\\_bienvenue\\_920.htm](http://www.sia.fr/evenement_detail_diesel_engines_moteur_diesel_bienvenue_920.htm)

*Topics to be addressed include diesel combustion and new combustion processes, injection systems, gas exchange, pollution control, engine design and performance, and specific features of industrial engines.*

## **International Congress of Heavy Vehicles, Roadtrains and Urban Transport**

28-31 May 2008, Minsk, Belarus

Details at <http://www.fisita.com/events/diary?id=327>

*The International Congress of Heavy Vehicles, Road Trains and Urban Transport is organized by Academic Automotive Association under FISITA patronage, and by the support of the Government of the Republic of Belarus, Belarusian National Technical University, and the Belarusian automotive industry.*

## **4<sup>th</sup> Emission Control 2008**

29-30 May 2008, Dresden, Germany

*The main emphasis of this conference will be on measures to reduce emissions and energy and heat management. The emissions topics will include engine internal methods, alternative combustion, new technologies of aftertreatment, and exhaust emissions test methods and equipment.*

## **World Powertrain**

10-11 June 2008, Vaals, Netherlands

Details at [http://www.gpc-icpem.org/pdfs/vaals\\_gpc.pdf](http://www.gpc-icpem.org/pdfs/vaals_gpc.pdf)

*The programme covers advanced engine design and performance, advanced powerplants and vehicles, and emissions and enabling Technology.*

## **Benefits and Risks of Inhaled Engineered Nanoparticles**

11-14 June 2008, Hannover, Germany

Details at [www.inis-symposium.com](http://www.inis-symposium.com)

*The symposium will cover the main areas of current concern and active research in the context of inhaled engineered nanoparticles, including physico-chemical characteristics, measuring methods, bioavailability and potential sources of human exposure.*

## **SAE International 2008 Powertrains, Fuels and Lubricants Congress**

23-25 June 2008, Shanghai, China

Details at: <http://www.sae.org/events/pfl/>

*Offers of papers are being solicited in the following technology areas: Advanced Power Systems, Combustion and Fuels, Control and Calibration, Exhaust Aftertreatment and Emissions, Lubricants and Powertrain Systems.*

## **5<sup>th</sup> International Conference on Environmental Catalysis**

31 August - 3 September 2008, Belfast, N.Ireland

Details at [www.centacat.qub.ac.uk/5icec](http://www.centacat.qub.ac.uk/5icec)

*Sessions cover automotive emissions control, catalysis for the production of clean fuels, catalysis for sustainable energy conversion and greener process intensification.*

## **FISITA 2008 World Automotive Congress**

14-19 September 2008, Munich Germany

Details at [www.fisita2008.com](http://www.fisita2008.com)

*The topic area on future powertrain solutions includes strategies for future ultra-low exhaust emissions limits and strategies and engines for future fuels. The simulation and testing topic includes harmonisation of international legislation.*

## **International conference 'Environment & Transport in different contexts'**

27-28 October 2008, Ghardaia, Algeria

Details at <http://www.inrets.fr/services/manif/ghardaia-oct08/index-EN.html>

*The conference deals with the environment issues related to transport in different areas with a particular focus on the Southern countries. The main topics to be dealt with are transportation systems and environmental impacts, evaluation methodology, control technology and transportation policy.*