



Newsletter

July - August 2007

INTERNATIONAL REGULATORY DEVELOPMENTS

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EUROPE

Public Consultation on Heavy-duty Euro VI Emissions

The European Commission has issued a public consultation on Euro VI for Heavy-duty engines. The consultation provides 4 different scenarios, each having separate limits for compression-ignition engines and for positive-ignition engines.

Table	Euro VI scenarios							
	A		B		C		D	
g/kWh	CI ²⁾	PI ³⁾	CI ²⁾	PI ³⁾	CI ²⁾	PI ³⁾	CI ²⁾	PI ³⁾
PM	0.01	0.01	0.02	0.02	0.015	0.02	0.015	0.01
NOx	0.4	0.4	0.2	2.0	1.0	2.0	0.5	1.0
THC	0.16	0.66	0.55	1.05	0.55	1.05	0.55	1.05
CO	4.0	4.0	4.0	3.0	4.0	3.0	4.0	3.0
NH ₃ ⁴⁾	10 ppm	10 ppm	10 ppm	10 ppm	10 ppm	10 ppm	10 ppm	10 ppm
Increased CO ₂ ⁴⁾	2-3 %	-	5-6%	-	Neutral	-	Neutral	-

1) To be applicable to vehicles using SCR

2) Engines fuelled with diesel and ethanol

3) Engines fuelled with natural gas (NG) and LPG

4) Anticipated additional CO₂ emissions

As part of the consultation the Commission asks whether the public would prefer a proposal for Euro VI before the end of 2007 or a proposal on the two next stages (Euro VI and Euro VII) "even if this would mean delaying the proposal and possibly the entry into force of the new emissions limits by several months".

The Commission identifies Scenario A as being equivalent to the future US standards. The Commission says that in addition to the use of a more efficient SCR system, Scenario A would require a higher rate of cooled EGR and this would lead to the 2-3% higher fuel consumption shown. Scenario B is stricter than scenario A in terms of NOx for diesel engines but less stringent in terms of PM. The Commission says that this scenario requires a rate of cooled EGR that is considerably higher than that of scenario A, and that in order to achieve this, an improved cooling system will be required. As a result, higher fuel consumption and thus higher CO₂ emissions of around 5% to 6% are anticipated.

Progress on the Euro 5 and Euro 6 Technical Regulation

Following a series of stakeholder discussions in the European Commission's Motor Vehicle Emissions Group (MVEG), EU Member States considered the latest draft of the Euro 5 and Euro 6 Technical

Regulation at a meeting of the Committee on Adaptation to Technical Progress (CATP-MV) on 12 July 2007. This regulation will, when approved by the Committee, provide the test methods, reference fuel specifications and technical detail for the Euro 5 and 6 regulation (EC 715/2007), including OBD Threshold Limit Values and Deterioration Factors.

The latest draft introduces a 'Euro 5+' step:

- Particle number limits and the revised PM limit (3mg/km) will be introduced for new Type Approvals from 1 September 2011 and for all registrations from 1 September 2012.
- Some Euro 5 requirements that need new developments are also to be introduced at the same time. These are the low temperature (-7°C) test for flex-fuelled vehicles; the requirement for the operation of the OBD system "under all foreseeable driving conditions"; and the requirement for the OBD system to monitor NOx reduction efficiency of the Three Way Catalyst.

In addition to this 'Euro 5+' step there are significant revisions to the detail of the requirements for in-use performance monitoring of the OBD system, some detail changes to the reference fuel specifications and revised wording that requires manufacturers to show that the performance of the NOx aftertreatment device reaches its full efficiency within 3 minutes after a cold start at -7°C. There will be Commission reviews on the extension of the -7°C test to Euro 6 diesel vehicles; the technical feasibility of the proposed Euro 6 diesel OBD thresholds; and the particulate OBD thresholds for positive ignition vehicles.

Public Hearing on CO₂ from Cars

The European Commission held a Public Hearing, attended by over 300 delegates, on "Reducing CO₂ from Passenger Cars and Light-Commercial Vehicles" on 11 July 2007 in Brussels. The Commission has already proposed legislative targets for fleet average CO₂ emissions of 130g/km to be achieved by technical measures by 2012, with a further 10g/km to be achieved through other measures including biofuels, tyres etc. The Commission said at the hearing that they have now defined which of a variety of implementation methods they should focus on. The motor industry association, ACEA, said that 2015 is the earliest possible date to meet the target, not 2012. They believe that vehicle weight appears to be the most suitable factor on which to base targets.

Study on NOx from Aircraft Engines

The European Commission's Directorate-General for Energy & Transport (DG-TREN) has issued a tender for a study to identify and evaluate measures to reduce emissions of NOx from aircraft.

The study must identify all options for measures to address aircraft NO_x emissions, review and assess the impacts and relative cost-effectiveness of the measures, and make recommendations on which measures or combination of measures are most promising. The tender document notes that ambient NO₂ air quality limit values become mandatory in 2010. Although they do not apply specifically to aircraft, there are indications that busy airports will have difficulty in ensuring that the limit values are met.

European Court of Justice rejects Dutch Appeal on Particulate Limits

The European Court of Justice (ECJ) has rejected a legal challenge by the Dutch Government to a European Commission ruling that the Netherlands could not introduce tougher limits on fine particle emissions from new diesel cars and light vans.

In 2005, the Netherlands had proposed introducing the Euro 5 diesel PM limit of 5mg/km from 1 January 2007, earlier than will be required by Euro 5. The Commission rejected the proposal, saying that it was not warranted on environmental grounds and it would exclude certain diesel cars or manufacturers, leading to unfair competition. The ECJ judges backed the Commission. They ruled that the Dutch government had failed to prove that it had a nationally-specific problem with vehicle emissions that would justify stricter rules than are agreed for EU-wide application.

Dutch Environment Minister Jacqueline Cramer said the Netherlands will continue to stimulate the use of particulate filters. She said that VROM, the Dutch Environment Ministry, is running a successful campaign to persuade motorists to voluntarily fit a filter. Six out of ten cars now leave the showroom with a particulate filter. In addition more and more Dutch citizens are installing filters on existing cars, for which they get a rebate of €500. Those who buy a new diesel car with a filter get a €600 rebate.

Commission opinion on Austrian Measures for NO_x Emissions Reduction

The European Commission has issued a formal opinion on a number of traffic-related measures put forward by the government of Tyrol, Austria, to reduce NO_x emissions from cars and heavy goods vehicles. The Commission welcomed Austria's efforts to reach EU air quality targets for 2010, but concluded that the proposed "sectoral driving ban" for heavy goods vehicles is not compatible with Community rules.

The Commission concluded that most of the measures, such as speed limits for passenger cars and driving bans for older or more polluting trucks, promote Community environmental policy effectively

and do not hinder the free movement of goods. However, the Commission concluded that the proposal to ban trucks from a section of the A12 motorway if they are carrying a number of specific goods, regardless of the vehicle's emissions level, is not compatible with European law. The Commission has asked the Austrian government to consider replacing the proposal with "other, less restrictive measures" such as lower speed limits.

Environmental Zone planned for Cologne

The German Government has formally notified the EU of plans for an environmental zone in the city centre of Köln (Cologne). Within the zone, a ban will apply year-round to passenger cars and commercial vehicles with high pollutant emissions. In the first stage, the ban will apply to vehicles in German pollutant class 1, starting 1 January 2008. If monitoring during 2009 shows the 2010 immissions limit for NO₂ is still not being met, a second stage banning vehicles in pollutant classes 1 & 2 will apply from 1 January 2010.

Milan to impose Pollution Charge

Milan will impose a 'pollution charge' on vehicles entering its historic centre to try to halve exhaust emissions, the mayor's office said on its web site. The €10 daily charge will be aimed at the 89 000 vehicles which enter the centre during weekday daytime hours. The charge, expected to start later this year, has been approved by city council leaders and will be carried out on a trial basis for a year.

Revised Dutch Subsidy Plan for Soot Filters

The 2007 Dutch subsidy plan for soot filters for passenger cars and commercial vans has been increased from €20 million to €40 million.

SenterNovem figures indicate that some 27 000 soot filters have been retrofitted to cars up to end of July 2007.

London Congestion Report shows Improvements in NO_x and PM

Transport for London (TfL) has published its latest impact assessment of the London congestion charge. It shows that congestion within the zone fell by 8% in 2006, compared to the 2002 baseline, but the improvements in air quality were even greater. TfL says that NO_x emissions have come down by 17% within the zone, while particulate emissions (PM₁₀) have fallen by 24%. The report says that the dominant influence on emissions of key air pollutants has been vehicle technology improvements."

Heavy-duty Emissions Incentives in Germany

The German Upper House of Parliament has approved legislation to support the purchase of low-emissions commercial vehicles by lowering the motor vehicle tax for trucks registered in Germany to the minimum permitted under EU legislation. In addition German hauliers will be supported in the acquisition of such vehicles under a programme with funding of €100 million. The motorway toll law (MAUT tax) for heavy commercial motor vehicles will also be adapted to favour low-emissions vehicles. On 1 October 2008 the promotion of Euro V trucks ends. The Federal Government say they intend to promote Euro VI trucks as soon as this standard is defined.

Italian Council of Ministers approves Incentives for Low-Emissions Trucks

The Italian Council of Ministers has approved a proposal from minister Bianchi for a Presidential decree giving €70 million support to the road haulage industry for the purchase of 'ecological' vehicles. The draft of the incentive scheme would give incentives in 2007 and 2008 for the purchase or leasing of heavy goods vehicles of 11.5 tonnes or over, that meet Euro 5 or EEV standards. The incentive will be between €2550 and €4250.

Alpine Regions are expected to Exceed EU Air Quality Limits

EU targets for reducing the concentration of NO_x, particulates and ozone in air by 2010 are "unlikely to be attained" in Europe's alpine regions, according to the transport and mobility chapter of the first "Report on the state of the Alps". Drawn up under the 1991 Alpine convention, the report concludes that new measures to reduce emissions from road traffic, particularly freight, are "inevitable". Analyses of air quality show that the 2010 EU annual mean limit values for NO₂ are exceeded at up to 32% of stations, as well as for short term peaks.

Over Fifty Cities in Spain Exceed Air Pollution Limits

Fifty Spanish cities exceed government guidelines for air pollution, a study shows. Madrid, Barcelona, Valencia and Seville are the worst offenders on the list compiled by the Environmental Ministry. The survey showed that 89% of Spanish cities with more than 100000 inhabitants exceed the legal pollution limits. More than 17 million people are affected.

Mid-term Assessment of French Health-Environment Plan

The French government has issued a mid-term review of a national five-year plan to reduce health risks from environmental pollution. The report says that delays in reducing emissions of particulate matter from diesel engines are particularly "preoccupying". In addition, it says, the risks of deterioration of air quality related to the increased use of biofuels (VOCs) or to the acceleration of heating with wood (emissions of particles and dioxins) deserves detailed attention.

The recommendations to reduce air emissions by mobile sources include speeding the introduction of anti-pollution devices for urban buses; quickly setting up financial incentives or equivalent measures aimed at supporting the purchase of vehicles equipped with the most environmentally-respectful diesel engines and equipping heavy lorries with anti-pollution devices; and increasing the share of the non-polluting modes of transport.

Dutch Roadside Assistance Cars get Soot Filters

After a vast sustainability test, the Dutch roadside assistance organisation ANWB became so enthusiastic about retrofit soot filters that the company decided to equip nearly all their "wegenwacht" vehicles with a retrofit filter. ANWB has said that the effectiveness of the filters has been assessed and that the filters are not damaging the cars.

Stockholm makes Congestion Charge Permanent

Stockholm has adopted a permanent congestion charge more than a year after the end of a six-month trial and despite opposition from a number of districts surrounding the capital. The charge will apply to taxis and disabled transport services and will be tax-deductible for some companies and commuters.

North Sea Low-Sulfur Shipping Zone enters Force

An EU limit of 1.5% sulfur content in marine fuels used by vessels in the North Sea entered force on 11 August 2007. A similar limit for the Baltic Sea was introduced a year ago. The measure is intended to cut air pollution from the shipping sector, whose share of the overall pollution load has been rising as emissions from land-based sources have fallen. The Dutch Transport Ministry said that a study by TNO showed the new limit would cut SO_x emissions by 40% and particulate emissions by 10%.

Mercedes Bluetec[®] European Launch brought forward

Mercedes has announced that it will offer diesels with its Bluetec[®] NOx aftertreatment systems to Europe as from the end of this year. Initially the system will be available on the V6 E-class, using the version of Bluetec[®] which does not require urea. Mercedes says the earlier launch in Europe has been made possible by greater availability of ultra-low sulfur diesel. Germany, Austria, Switzerland and the Netherlands - the areas where ultra low sulfur diesel is widely available - will be the first to get the Bluetec[®].

NORTH AMERICA

California adopts Emissions Requirements for Off-Road Diesels

Following some amendments to the proposals, the California Air Resources Board has adopted an off-road diesel regulation. The requirements cover existing vehicles used in construction, mining, and airport ground support applications. Amendments to the original proposal include provisions allowing non-attainment areas to opt in to stricter regional NOx fleet requirements if incentive funds are available. The small fleet horsepower limit is also increased to 2500 hp. At the end of 2008 the Board will review the availability of verified retrofit technologies, and in 2012 it will review the status of Tier IV engines.

Landmark Settlement on 'Defeat Devices'

The US Department of Justice and the Environmental Protection Agency (EPA) have announced a landmark settlement requiring an Illinois company to pay a penalty and stop selling devices that allow cars to emit excess levels of pollution into the environment.

The settlement requires Casper's Electronics to stop selling oxygen sensor simulators or 'O2 Sims', recall the devices, and pay more than \$74 000 (around 127 thousand euros) in civil penalties. An 'O2 Sim' tricks the car's electronic control unit into sensing a properly functioning emissions control system, even when the catalytic converter is missing or faulty. EPA estimates that the increased lifetime emissions from installation of the 44 000 devices sold is equivalent to the emissions produced by half a million cars with fully operational emissions control systems.

US EPA releases new Health Assessment of NOx

On 31 August 2007 the US Environmental Protection Agency (EPA) released a draft document entitled 'Integrated Science Assessment for Oxides of

Nitrogen-Health Criteria'. The draft was prepared as part of the review of the primary National Air Quality Standard for NOx. Once finalised, the assessment will provide the scientific bases for EPA's review and possible revision of the air quality standard for NOx.

EPA says there are significant new data, particularly epidemiological studies, that strengthen the evidence for adverse health effects since the last scientific review document was released in 1993. The strongest new epidemiological evidence shows an association between ambient air concentrations of NO₂ and increased visits to hospital emergency rooms and hospital admissions for respiratory illness, especially asthma and chronic obstructive pulmonary disease, according to the assessment.

Toronto Proposes to Ban Leaf Blowers and Gasoline-powered Lawn Mowers

Included in the City of Toronto's proposals to fight climate change are plans to ban leaf blowers and gasoline-powered lawn mowers. The potential ban on two-stroke engines, such as leaf blowers, could take effect by 2010. Other proposals to combat climate change include one for all taxis and limousines to switch to low-emission or hybrid technology by 2015.

California issues Engine-Shutdown Protocol

The California Air resources Board has issued a Manufacturers Advisory Correspondence (MAC #2007-03) which is a "Protocol for the engine Shutdown System on New California Certified Heavy Duty Diesel Engines for 2008 and Subsequent Model Years". An Engine Shutdown System (ESS) is required on all new California-certified heavy-duty diesel engines intended for a Gross Vehicle Weight Rating greater than 14000 pounds.

Proposed Smoke Test for California

California's Department of Consumer Affairs/Bureau of Automotive Repair is adding a visible smoke test to in-use testing requirements. The Bureau is the State agency charged with implementing the Smog Check Programme to reduce emissions from mobile sources by requiring periodic inspections to ensure that vehicles meet in-use emissions.

The current Smog Check inspection measures gaseous emissions of hydrocarbons, carbon monoxide, and oxides of nitrogen, but does not test for particulate matter or for tailpipe smoke that results from a vehicle burning excessive amounts of motor oil. California's review committee says that the vehicle's catalytic converter could eliminate or reduce the hydrocarbons but still allow the smoke particles to

pass through. It is therefore possible for a smoking vehicle to pass the smog check inspection. According to the Bay Area Air Quality Management District, smoking vehicles emit roughly 1.6 million tons annually of fine particle pollution. The smoke inspection procedure proposed will not require additional equipment but will rely on the technician's observations of the exhaust.

California to examine Evaporative Emissions from Pleasure Craft

The California Air Resources Board is discussing with stakeholders a test plan to evaluate technology to control evaporative emissions from spark-ignited marine engines with permanently mounted fuel tanks. The objective is to generate data to support the setting of evaporative emissions standards.

US EPA to evaluate Emissions Impacts of Higher Alcohol Blends

The US Environmental Protection Agency (EPA) has announced that it plans to examine the emissions impacts of higher levels of ethanol blends in gasoline.

A maximum of 10% ethanol in gasoline (E10) is currently allowed in the US, but some States have already asked for waivers to allow up to 20% ethanol. Engine and vehicle manufacturers say they have little experience with ethanol blends above E10 and are concerned that higher blends may lead to engine damage. Environmentalists have also expressed fears that higher blends would result in significant increases in ozone and other pollutants. EPA will test 15% and 20% ethanol blends (E15 & E20, respectively) and will measure CO₂, NO_x and particulate emissions from engines operating on E15 and E20 gasoline blends. Results are expected by the end of 2008.

Oregon introduces Incentives for Retrofitting Diesel Engines

The US State of Oregon has finalised legislation to provide incentives for replacing and retrofitting in-use diesel engines used in school buses, trucks, construction equipment, and farm vehicles. The programme will provide grants, loans, and tax credits to retrofit, rebuild, or replace older diesel engines, and to reduce diesel idling.

California requires CO₂ Reporting

The California Air Resources Board has issued a new requirement for vehicle and engine manufacturers to report CO₂ emissions. The new requirements apply to all off-road and on-road engine and vehicle categories for 2008 and subsequent model years. A letter

detailing the reporting requirements has been sent to manufacturers of passenger cars, trucks, motorcycles, recreational vehicles, and on-road, off-road, and marine engines.

US Renewable Fuels Standard enters force on 1 September 2007

From 1 September 2007 major fuel refiners, blenders, and importers in the US must meet reporting and registration requirements under the Renewable Fuels Standard (RFS). The RFS programme requires a minimum volume of renewable fuel be blended into motor fuel sold in the US each year between 2007 and 2012, and that at least 7.5 billion gallons (28.4 billion litres) be blended by 2012. For 2007, 4.02% of the fuel sold or dispensed to US motorists will have to come from renewable sources.

SOUTH AMERICA

Brazilian Environmental Agency splits into Two Units

Brazil's Senate has passed a provisional measure (MPV 336) that splits IBAMA, Brazil's environmental enforcement agency, into two autonomous units. The new structure maintains IBAMA as an enforcement and licensing agency and establishes the Chico Mendes Institute, which will handle biodiversity conservation. Both units are under the guidance of the Environment Ministry.

ASIA-PACIFIC

Taiwan sets Stricter Motorcycle Emissions Standards

Taiwan has promulgated stricter motorcycle emissions standards covering CO, hydrocarbons, and NO_x. The standard for CO emissions was reduced from 7.0g/km to 2.0g/km, while standards for HC and NO_x, both previously 2 g/km, were reduced to 0.8g/km and 0.15g/km respectively. According to the Taiwan Environmental Protection Administration (TEPA), the standards are now stricter than in Europe.

Old and Diesel-fuelled Cars fail Mandatory Emissions Testing in Jakarta

According to tests supervised by the Jakarta Environment Management Board (BPLHD) in June, 178 cars out of 512 tested produced excessive emissions. Over half of these cars were diesel-fuelled. BPLHD's air pollution control unit says that they are still trying to establish whether or not the higher emissions are caused by poor diesel quality. Diesel sold around the country has a sulfur content of 3500

ppm according to data from the State Ministry for the Environment. This is far higher than the maximum level of 500 ppm for Euro II, which was adopted in Jakarta early this year. Twice-yearly emissions testing is mandatory for all private cars in Jakarta and public transportation vehicles including trucks and buses must also be tested under the regulation.

Nearly 60% of Hanoi Motorbikes fail Emissions Tests

A study conducted by the Hanoi Department of Natural Resources and Environment and the Department of Housing with support from the World Bank has concluded that nearly 60% of motorbikes in Hanoi do not meet emissions standards. Motorbikes in use for longer than 15 years were found to have emissions many times higher than those permitted by law. The study also showed that only one model met the Euro 2 standard for exhaust emissions.

The study inspected 1675 motorbikes in Vietnam's capital city. The Vietnam Registration Department (VRD) said they are developing a plan to control motorbike and vehicle emissions in major cities and will soon begin a programme of inspecting all motorbikes in Ho Chi Minh City. They also plan to issue new emissions regulations by 2010. VRD said that work with the University of Technology showed that installing a catalytic converter into motorcycles was a proven technology that could help reduce 50-80% of toxic emissions. A VRD survey found that 96% of drivers would agree to install the converters on their motorbikes if they received support for the cost.

Researchers say Diesel Soot in Tokyo Air has dropped by Half

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

The centre's researchers originally measured the level of diesel soot in the atmosphere in Komaba, Meguro Ward, Tokyo, near the centre, between May 2003 and August 2005. The research showed that the monthly average of diesel soot was between 1.71 and 2.99 $\mu\text{g}/\text{m}^3$. The average amount of diesel soot during the entire monitoring period was 2.3 $\mu\text{g}/\text{m}^3$. When the team re-examined the level of diesel soot between January and March this year, however, they discovered that the monthly average was far lower than before, standing between 0.86 and 1.33 $\mu\text{g}/\text{m}^3$. The average level of diesel soot measured during the three-month period was 1.1 $\mu\text{g}/\text{m}^3$, less than half the level in the previous survey.

The researchers link the findings to controls on diesel particulate matter. Starting in October 2003, the Tokyo metropolitan government banned the use of diesel vehicles (excluding passenger cars) that emit particulate matter above its standard; and in October 2005, the central government introduced a new standard, aiming to cut particulate emissions from new diesel truck and bus models by about 85%.

Australian Expert calls for Strict Diesel Emissions Regulations

An Australian expert on alternative energy has called on the Federal Government to introduce tighter controls on diesel vehicles as a result of increasing sales. The latest figures released by the Australian Federal Chamber of Automobile Industries show diesel car sales up 90% on the previous 12 months.

Associate Professor Vishy Karri, from the University of Tasmania's School of Engineering, said technology to reduce dangerous diesel particulates was progressing at a rapid rate in the USA and Europe, but Australia was lagging years behind. He said that Australian diesel fuel has to contain a maximum of 50ppm sulfur, but in California the figure is 15ppm. The Federal Department of Transport and Roads is planning to adopt a standard of 10ppm sulfur by 2009, ahead of the introduction of Euro 5 emissions standards in 2010, but a recent report by the National Environment Protection Council (NEPC), which advises the Federal Government on diesel vehicle emissions standards, says that the biggest problem is the country's ageing diesel truck fleet, on average between 10 and 15 years old. The NEPC report said it was up to the States to enforce initiatives such as audited maintenance programmes, engine rebuilds and retrofitting of particulate filters and oxidisation catalysts.

Delhi High Court may ban Diesel Cars

In 2001, the Delhi Supreme Court banned the use of diesel in public transportation and ordered that buses, taxis and auto-rickshaws change to the use of compressed natural gas (CNG) as a measure to control air pollution in the city. However, the proportion of diesel cars in Delhi is rapidly increasing.

The Delhi High Court is now concerned that diesel cars might be defeating the intent of this order. The court has asked the Delhi government to report to it by 10 September 2007 on the feasibility of banning diesel cars or getting them to use natural gas. The Indian automotive industry is currently investing heavily in diesel engines and says that the move should not be to discourage new diesel cars but to introduce better technology.

Smog increases in Japan

Photochemical smog is reported to have returned to Japanese cities for the first time in 30 years and is also appearing in rural areas for the first time ever. Warnings for high levels of smog have been issued in a record 28 prefectures so far this year.

While the Japanese government is cautious about placing blame, experts from the National Institute of Environmental Studies say much of the rise in pollution is coming from China. However, other experts say research is complicated because domestic factors are also to blame for the rise. For example, whilst emissions from cars have been restricted, those from gasoline vapours and paint, which also contribute to smog, have been harder to control. The Environment Ministry asked a group of academics and local health officials last month to carry out a study on pollution trends, but detailed research into the causes could take several years.

Vietnam moves to Low Sulfur Diesel for Road Vehicles

Vietnam's Trade Ministry has ordered oil product importers to sell only 0.05% sulfur diesel to road vehicles from 1 July 2007, but will still allow industrial use of 0.25% sulfur fuel, according to local media. All 11 State importers will have to list the sulfur contents of diesel at pump stations and only sell the 0.25% grade to ships, trains and other industrial users.

South Korea may advance 5% Biodiesel Requirements

Local press reports say that South Korea may bring forward to 2008 its planned increase in the biodiesel content of diesel fuel to 5%. South Korea decreed last year that all domestic diesel must contain at least 0.5% biodiesel and plans to reach 5% by 2010.

MIDDLE EAST

Low Sulfur Diesel introduced in United Arab Emirates

The Emirates National Oil Company (Enoc) says it has introduced 500ppm sulfur (max.) diesel at Enoc/Eppco service stations across Dubai, Sharjah and the Northern Emirates. The sulfur level was previously 2500ppm. The greener diesel is to be sourced from Abu Dhabi National Oil Company (Adnoc), Kuwait, Qatar, Saudi Arabia and India.

AFRICA

Zimbabwe, Mozambique and Malawi act on Fuel Sulfur and Vehicle Standards

At a one-day workshop organised by the Air Pollution Information Network for Africa, Zimbabwe's Secretary for Environment and Tourism said that the impact of air pollution is one of the major environmental and social issues facing the country and the region.

Air pollution has contributed significantly to global warming that had triggered climate change, she said, and "Air pollution continues to have a negative impact on our health, ecosystems, biodiversity, crops, infrastructural materials and our cultural heritage." In addition emissions from vehicles, bunker fuels within aircraft and ships are also contributing to air pollution and global warming worldwide. The Minister said that since a previous meeting last year, Zimbabwe, Mozambique and Malawi have initiated discussions on the reduction of sulfur levels in both petrol and diesel, in addition to restricting the age limit of imported second-hand vehicles. The three countries had also introduced catalytic converters and harmonization standards with the support of the UNEP. The Zimbabwe Government is also investing in developing clean biofuels, such as jatropha.

GENERAL

ICCT Report on Fuel Economy of Cars and Light Trucks

The International Council on Clean Transportation (ICCT) has issued a new report comparing worldwide car and light truck fuel efficiency standards.

The report incorporates changes to vehicle standards in Japan, Europe, and the US and identifies new policies to promote fuel-efficient vehicles in China and Canada. The report concludes that Japan's standards are expected to lead to the lowest fleet average greenhouse gas emissions for new passenger vehicles in the world in 2015, but California's standards for passenger vehicles should achieve the greatest per vehicle reductions.

"*Passenger Vehicle Greenhouse Gas and Fuel Economy Standards: A Global Update*" is available at: www.theicct.org/documents/ICCT_GlobalStandards_2007.pdf.

New Study finds link between Diesel Particulate and Cholesterol

Researchers at America's UCLA have identified a synergistic interaction between diesel particulate matter (PM) and low-density lipoprotein (LDL) cholesterol, which enhances vascular inflammation

and atherosclerosis and significantly increases the risk of heart attack and stroke. The study examined how oxidative cell and tissue damage resulting from exposure to free radicals contributes to inflammation and artery disease. The researchers found that diesel PM and oxidised fats work in tandem to activate genes that promote cellular inflammation.

Paper on Health Mechanisms of Particulate Matter

A new paper to be published in the journal *Environmental Research* examines the chemical and biological effects of ambient air particles.

The researchers analysed PM in air from downtown Buenos Aires and evaluated its biological impact on normal airways. They studied the inflammatory response to intranasal instillation of the PM in a short-term-exposure mouse model and the morphology and chemical composition of the PM. Regarding size, surface area and distribution, the ambient particulate matter from Buenos Aires proved to be small spherical ultrafine particles; either free, in clusters and associated to a matrix. The particles contained polycyclic aromatic hydrocarbons, polychlorinated biphenyls and almost no metal traces. Histologically, the particulate matter induced the recruitment of phagocytes, a reduction in air spaces, an increase in mucous PAS positive cells and weak incomplete elastic fibre network. The authors say that their results demonstrate that the material causes adverse biological effects on the respiratory tract generating inflammation that, in turn, may cause tissue injury or organ dysfunction and may contribute to the pathogenesis of lung diseases.

Source: Martin et al, Characterization and biological effect of Buenos Aires urban air particles on mice lungs; *Environmental Research*, doi:10.1016/j.envres.2007.04.009

UK Study links Air Pollution to Early Death

Even comparatively low levels of air pollution boost the chances of an early death, suggests research to be published in *Thorax*. The researchers base their findings on long term monitoring of air quality in different electoral wards around Britain during different time periods, and national data on causes of death.

To assess more closely the impact of pollution on health, they divided the data into four groups, spanning a total of 16 years each, starting in 1966-70 and ending in 1994-8. Black smoke and sulfur dioxide were strongly linked to the chances of an early death, the findings showed. But despite a fall in air pollutants over the study period, as measured by the air quality readings, the risk of an early death remained, even at the comparatively low levels of air pollutants during

the most recent time frame. This was especially true for deaths from respiratory illness. Their findings confirm the enduring legacy of air pollution on health, say the authors. And they point to "continuing public health risks even at the relatively low levels of black smoke and sulfur dioxide that now occur."

Effect of Particles on the Elderly

A new paper from Hanyang University, Korea, investigates the association between particulate matter and the peak expiratory flow rate (PEFR) in the elderly and compares estimated risks using PM10 or PM2.5 levels as a measure of exposure. These results suggest that fine particles have a more adverse respiratory health impact for sensitive individuals such as the elderly. The authors say that more research and control strategies should focus on the smaller particles associated with air pollution.

Source: Jong-Tae Lee et al, The adverse effects of fine particle air pollution on respiratory function in the elderly; *Science of The Total Environment*, doi:10.1016/j.scitotenv.2007.07.005

FORTHCOMING CONFERENCES

19th International AVL Conference "Engine & Environment"

6-7 September 2007, Graz, Austria

Engine & Environment 2007 will focus on the concept definition, development and release of production of hybrid vehicles.

KONES 2007: International Scientific Congress on Powertrain and Transport Means

9-12 September 2007, Warsaw, Poland

Details at www.ilot.edu.pl/STRANG/kones2007.html

The latest achievements in research, development and design of CI, SI and other combustion engines with special attention to biofuels, ecology, injection and spray, fuel economy, combustion processes, mixture preparation, exhaust aftertreatment, particulate filters, durability and reliability.

11th EuCheMS International Conference on Chemistry and the Environment

9-12 September 2007, Toruń, Poland

Details at www.50zjazd.ptchem.pl

The lectures and poster sessions deal with topics including adsorption and catalysis, analytical and environmental chemistry, material & nanomaterials chemistry, and chemical technology & engineering.

SAE Heavy Duty Diesel Emissions Control Symposium

10-12 September 2007, Gothenburg, Sweden

Details at:

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

Presentations from leading global technology and policy experts will highlight routes to emissions compliance and outline technologies that are under development, being demonstrated, and set to be applied on current and future generations of diesel engines for trucks, buses and mobile machinery.

SAE 2007 Homogeneous Charge Compression Ignition Symposium (HCCI)

12-14 September 2007, Lund, Sweden

Details at

<http://www.sae.org/events/training/symposia/hcci/index.htm>

Technical sessions exploring the state of HCCI, including the latest research being conducted and findings, OE engine suppliers developments, fuel requirements necessary for HCCI, and the challenges of going from laboratory to the vehicles.

Euromat 2007: European Congress and Exhibition on Advanced Materials and Processes

10-13 September 2007, Nürnberg, Germany

Details at <http://www.euromat2007.fems.org/>

Themes in the conference include advanced structural ceramics, nanostructures, ceramic composite concepts, the reliability of ceramic components, modelling ceramic processing, microstructure, and properties, coatings and surface engineering, microstructural characterisation techniques and automotive applications.

8th International Conference on Engines for Automobile ICE2007

16-20 September 2007, Capri, Italy

Details at <http://www.sae-na.it/ice2007.html>

The session on emissions of diesel, spark ignition and advanced power sources will include the topics of aftertreatment technologies, catalyst and converter technologies, emissions modelling and control, emissions testing and measurements, and sensors.

3rd International Automotive Workshop Direct Injection for Gasoline Engines

17-18 September, Spa, Belgium

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

The conference covers component technology, development methodology, combustion systems and vehicle calibration.

Techniken zur Reduktion der Abgasemissionen von Kraftfahrzeugen

19-20 September 2007, München, Germany

Details at www.hdt-essen.de

Biofuels for Future Transport and Mobility

20 September 2007, Norwich, UK

The seminar will examine the business case drivers, investment decisions and key subject areas surrounding the choices and technologies for biofuels,

future transport and mobility. It will highlight the constraints in bringing new biofuels to the market and the technologies available to realise the potential, as well as the readiness of automotive OEMs.

Bus Propres (ADEME): 6^{èmes} journées d'études

24-25 September 2007, Lille, France

Details at: <http://www2.ademe.fr/servlet/getDoc?id=40298&ref=17205&p1=1&p2=>

The studies "Bus Propre" will present a complete assessment of the evolution of the various options evaluated since 2004: Natural Gas, LPG, Diesel with particle filter - DeNOx systems (SCR, EGR) and electric vehicles.

Selective Catalytic Reduction 2007

24-26 September 2007, Frankfurt/Main, Germany

Details at www.igpc.com/de/SCR/MM

The conference on 24-25 September will cover case studies and expert knowledge from key companies and institutions. On 26 September there will be a choice of 4 interactive workshops on sensor systems for exhaust aftertreatment systems; combining SCR-systems & DPF; SCRi - Integrated function of continuous PM and NOx Reduction; and low-temperature SCR by hydrogen.

Nanocatalysts 2007

25-26 September 2007, Vienna, Austria

The conference will include a clear and concise breakdown of the global nanocatalyst market from QinetiQ, the most recent developments in the regulation of nanomaterials, and research on nanoparticle production process, morphology control and 3D structural design.

Particles and Photo-oxidants in Europe

25-26 September 2007, Prague, Czech Republic

The conference includes presentations from UBA on Clean Air for Europe (CAFE) and the Thematic Strategy on Air Pollution, from DG Environment on the new Air Quality Directive, from WHO on the Health Effects of Air Pollution, and from Leeds University on the Importance of Primary NO₂.

European Road Transport and Climate Change – ETRAC Conference

26 September 2007, Brussels, Belgium

SENSACT 2007: Sensors & Actuators for Advanced Powertrain Applications

4 October 2007, Paris, France

Details at <http://www.sia.fr/files/evenement/onglet/1957/programme%20sensact.pdf>

Session 2 covers papers on sensors for exhaust automotive applications.

Next Generation Biofuel Markets: Setting the Course for the Next Wave of Biofuels

4-5 October 2007, Amsterdam, Netherlands

This conference will consider the latest technical and commercial developments in cellulosic ethanol, butanol, BTL, next generation biodiesel, biomethanol and propane. It will help participants understand the policy drivers needed to drive the adoption of 2nd generation biofuels and the financial challenges in migrating to the next generation of biofuels.

Emissions-Related OBD Systems: A Design Overview Seminar

8 October, 2007 Lyon-Villeurbanne, France

Details at

http://www.sae.org/servlets/pdEvent?OBJECT_TYPE=PDEventInfo&PAGE=getPDEventInfo&EVT_NAME=C0708

This training seminar is designed for engineers involved in either the design or control of OBD systems for light and medium duty on-road vehicles. The examples will be geared towards spark ignition engines and light and medium duty regulations.

16. Aachener Kolloquium "Fahrzeug- und Motorentechnik" / 16th Aachen Colloquium "Automobile and Engine Technology"

8-10 October 2007, Aachen, Germany

On-Board Diagnostics Symposium: Light and Heavy-duty

9-11 October, 2007 Lyon-Villeurbanne, France

Details at

<http://www.sae.org/events/training/symposia/obd/index.htm>

This SAE Symposium will provide an opportunity to hear the latest developments and to explore the current engineering progress and the legislative actions due in the near future.

2nd International CTI Forum: SCR-Systems

15-16 October 2007, Stuttgart, Germany.

The main topics to be discussed include legislation on NO_x, dosing strategy and system approaches of current SCR concepts, the possibilities of a solid urea SCR systems, AdBlue[®] infrastructure, dosing unit, injection, ammonia preparation, and heating and mixer concepts

UFIPOLNET: Ultrafine Particle Size Distributions in Air Pollution Monitoring Networks

23-24 October 2007, Dresden, Germany

Details in the conference section of www.ufipolnet.eu

Presentations and posters on new UFP measuring instruments, measurements of ultrafine particles in urban air, particles and health, modelling fine and ultrafine particles, and air quality in directives and their implementation.

SAE 2007 Commercial Vehicle Engineering Congress and Exhibition

29 October - 1 November 2007, Chicago, USA

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

Hart's World Refining & Fuels Conference

6-8 November 2007, Beijing, China

Key topics include: renewable and fuel technology developments and challenges, marine fuels in Greater Asia, global octane outlook, clean fuels programmes - lessons learned from the EU, Japan and the USA, light- and heavy-duty vehicles trends and challenges and opportunities for the region's refinery sector.

5. FAD Konferenz: Herausforderung – Abgasnachbehandlung für Dieselmotoren

7-8 November 2007, Dresden, Germany

Details at <http://www.fad-diesel.de>

Clean Vehicles and Fuels European Symposium and Exhibition 2007

7-9 November 2007, Stockholm, Sweden.

Details at <http://www1.stocon.se/cleanvehicles/9/10620.asp>

The symposium and exhibition creates a meeting point where manufacturers and other promoters of clean vehicles and renewable fuels can meet decision makers and potential customers.

3rd International Environmentally-Friendly Vehicles Conference

19-20 November 2007, Dresden, Germany

The conference basis will be targets for CO₂ reduction, fuel efficiency and reduction of pollutant emissions, EF vehicles (including biofuels, CNG/LPG and developments of 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>

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 CO₂ Challenge

28-29 November 2007, Strasbourg, France

Details at <http://www.sia.fr>

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 CO₂ challenge.

Internal Combustion Engines: Performance, Fuel Economy and Emissions

11-12 December 2007, London, UK

Details at 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, with keynote speakers on each day. The conference will address challenges posed by climate change, regulations and market fragmentation. It will promote the dissemination and discussion of research on the latest developments in technology and the responses to market, regulatory and operational pressures.

6. International CTI Forum Exhaust Systems

18-20 January 2008, Nürtingen, Germany

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

5th International Exhaust Gas and Particulate Emissions Forum

19-20 February 2008, Ludwigsburg, Germany

Details at www.forum-emissions.com

6th 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.

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>

Deadline for Abstracts: 15 October 2007

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. The objective of TRA 2008 is to forge new, productive partnerships across all transport sectors. The road transport industry is an innovative force in Europe; it is one of the largest R&D investors in Europe. Climate change, urban congestion and the increasing demand for people and

freight transport challenge us to double our creativity to find adequate and innovative solutions.

4th Emission Control 2008

29-30 May 2008, Dresden, Germany

The main emphasis of this conference will be on internal combustion engines, 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.

Deadline for abstracts: 17 September 2007

Benefits and Risks of Inhaled Engineered Nanoparticles

11-14 June 2008, Hannover, Germany

Details at 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 relevant 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.

Deadline for abstracts: 1 November 2007

FISITA 2008 World Automotive Congress

14-19 September 2008, Munich Germany

Details at 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.

Deadline for abstracts: 26 October 2007

5th International Conference on Environmental Catalysis

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

Details at www.centacat.qub.ac.uk/5icec

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