



Newsletter

May - June 2006

INTERNATIONAL REGULATORY DEVELOPMENTS

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EUROPE

Development of Light-Duty Euro 5

On 13 July 2006, the report of the European Parliament's Rapporteur on the proposed light-duty Euro 5 Regulation will be considered by the Parliament's lead committee (Environment) together with committee members' proposed amendments and opinions from the Transport and Industry Committees.

The draft report recommends a further lowering of the proposed Euro 5 Diesel NOx limit to 180mg/km and a further Euro 6 step with a Diesel NOx limit of 75mg/km. Durability requirements are modified to 200000km instead of the 160000km proposed by the Commission. The Rapporteur recommends that Euro 5 should come into force on 1 June 2009 and Euro 6 on 1 June 2014. To assist natural gas vehicles the Rapporteur is proposing the retention of the Euro 4 standard for total hydrocarbons (100mg/km), but with an additional requirement of a non-methane hydrocarbon (NMHC) standard of 68mg/km for all vehicles. The report also foresees a further step (Euro 7), where the Commission should consider introducing limit values for CO₂ emissions.

Once agreed by the Environment Committee, the report is expected to be considered by a plenary session of Parliament in September or October.

For the Council of Ministers an Environmental working group has been reviewing the proposals and has held two seminars on the subject with key stakeholders. It is believed that a majority of Member States also favour the inclusion of a Euro 6 stage, with tighter diesel NOx limits, in the proposal.

French Motor Industry says Emissions Standards should not go beyond Euro 5

The president of the Comité des Constructeurs d'Automobiles Français (CCFA), the French car manufacturers' association, says in the 1 May 2006 issue of Automotive News Europe that it would be pointless to replace Euro 5 vehicle emissions standards with further standards, since in five years' time the noxious emissions produced by new diesel and petrol vehicles will be close to zero, and "zero can't be divided by zero".

Mr Gomez underlined the fact that vehicles produced in 2005 were ten times less polluting than those built in 1990, and claimed the cost of adhering to yet more stringent limits than those now set for Euro 5 would be completely disproportionate to the expected benefits. Improvements in air quality, according to the CCFA, are primarily attributable to the renewal of the vehicle fleet.

European Commission rejects Proposed Dutch 5mg/km PM Limit

The European Commission has rejected a Dutch proposal to implement a 5mg/km PM limit for new diesel cars and light commercial vehicles entering service from 1 January 2007.

The measure was framed as an amendment to the in-service, rather than Type Approval, requirements. Vehicles type-approved to current EU emissions requirements would not have been refused registration by the Dutch authorities, but the first time the vehicles went through a technical inspection or police check, they would be found to be non-compliant. The measure therefore effectively imposed a ban on the use (but not registration) of new vehicles emitting more than 5 mg/km PM.

The Dutch Government had to show that the requirement was based on new scientific evidence relating to protection of the environment on the grounds of a problem specific to that Member State arising after the adoption of the harmonisation measure (i.e. the emissions Directives). The Commission agreed that there is, since the publication of the current emissions Directive, new evidence to show that fine particles are more hazardous than larger ones. However, the Commission considered that the Netherlands has failed to prove the existence of a specific national problem and considered that the proposed measure was "relatively inefficient compared to other possible (and already implemented) measures."

Heavy-Duty Emissions Directive amended

Commission Directive 2006/51/EC was published in the Official Journal on 7 June 2006. This amends the Directives on emissions from heavy-duty engines (2005/55/EC and 2005/78/EC). The amendments introduce some changes to the wording on the requirements for the emissions control monitoring system, specifically regarding control of NOx and dosing systems for consumable reagents such as urea. In addition, it exempts gas engines from the requirements to ensure correct operation of NOx control measures as they do not currently use EGR or exhaust gas aftertreatment for NOx.

Tackling Climate Change will deliver Better Air Quality for Europe

A new report from the European Environment Agency says that tackling climate change will improve Europe's air quality, cut premature deaths and could save €12 billion annually in air pollution control costs by 2030. Reducing greenhouse gas emissions, by

burning smaller amounts of fossil fuels, will mean less air pollution. As a result the cost of tackling air pollution will be cut significantly.

The report, 'Air quality and ancillary benefits from climate change policies' says that existing air pollution abatement policies should lead to cleaner air in 2030 but are unlikely to meet the EU's objective of attaining levels of air quality that do not give rise to significant negative impacts on human health. But stringent EU climate change policies (aimed at limiting temperature rise to 2°C above pre-industrial levels by 2030) will offer extra benefits on air quality. The report says that specific air pollution policy will still be needed.

European Commission Study on NO₂

The European Commission's Environment Directorate has provided details of a proposed 13-month service contract on "The impact of changes in vehicle fleet composition and exhaust treatment technology on the attainment of the ambient air quality limit value for NO₂". The selected contractor will have to compile and review publicly available information on measured NO₂ emissions and total NO_x from the various vehicle categories across the EU. They will have to assess expected annual average air quality NO₂ exceedences for 2010 and 2015 and assess the sensitivity of conclusions to changes in the proportions of directly emitted exhaust NO₂.

European Summer Smog increases again in 2005

Ozone pollution across some 30 European countries rose again in summer 2005 after dipping in 2004, according to new figures from the European Environment Agency (EEA). The data show a general increase in breaches of concentration thresholds and objectives set in the EU's 2002 ozone directive.

According to EEA, the EU air quality "alert" threshold of 240µg/m³ was exceeded on 127 occasions, compared with 99 the previous year. Breaches of the threshold lasted an average of 2.4 hours, and the highest hourly ozone concentrations were reported across the Mediterranean region, in Portugal, Greece, Italy, France and Spain, but also in Romania. However, this level was breached in fewer countries than in the previous year and the highest peak concentration of the year was 361µg/m³ compared to 419µg/m³ in 2004.

Another key threshold, the 180µg/m³ "public information" threshold, was exceeded in most countries, and at 42% of all monitoring sites against 35% the year before. Increases in breaches of the directive's non-binding long-term concentration objectives were also observed. All countries that

provided data exceeded a 120µg/m³ limit over eight days. Moreover, 30% of monitoring sites breached this limit more than 25 times during that year, up by 11 percentage points compared with 2004.

Lifestyle Choices affect Personal Exposure to Air Pollutants

A recent Joint Research Centre study¹, under the EU-funded PEOPLE project, has assessed and compared outdoor, indoor and personal exposure to air pollutant levels in 6 European cities. Benzene was selected for the study as it is the first known carcinogen to be controlled by a European air quality directive (Directive 2000/69/EC), and it is also an indicator for traffic emissions. Personal exposure was measured using a portable exposure sampler device during a one-day campaign. For each city, 125 samplers were placed in different environments, and 150 samplers were used for human exposure.

The main findings of the study were:

- Human exposure to benzene was higher than concentrations reported at urban background monitoring sites such as parks or large squares.
- In all the six cities the major benzene source was traffic emissions.
- Of all the commuting groups, car users presented the highest exposure levels.
- The highest indoor concentrations were measured inside bars and motor vehicles.

¹ Pérez Ballesta P. et al; Population exposure to benzene: One day cross-sections in six European cities; Atmospheric Environment 40(18): 3355-3366 (2006)

Sweden proposes Tax Incentives for Diesel Cars with Low Particle Emissions

Sweden has notified the European Commission of a proposal to amend the Road Tax Act to allow a financial incentive for diesel-powered cars with low particle emissions. Tax relief of SEK 6000 will be given to diesel-powered cars in environment class 2005 PM, which is formulated in accordance with the Commission's recommendations.

Swiss Federal Council agrees Action Plan on Fine Particles

The Swiss Federal Council has approved an action plan on fine particles, with five new measures designed to reduce diesel particulate emissions.

One measure is to notify the EU and the World Trade Organisation of the anticipated introduction of the future Euro 5 particulate standard for light-duty vehicles to all new imports into Switzerland from 2007. A second notification will require diesel tractors to meet the EU's Stage IIIB standard, which will also

force fitment of particulate traps from 2009. In this case, incentives are being considered for fitment of particulate filters to older vehicles. This legislation is not due to come into force in the EU until 2011-2013.

The other measures are that from 2007, Switzerland will only purchase cars, delivery vehicles, diesel trucks and military vehicles that are equipped with particulate filters, in so far as they are available on the market; the reimbursement of mineral oil tax will be reduced for buses which are not fitted with a particulate filter or equivalent systems; and the Swiss Federal Council will negotiate with the EU on differential charges for heavy vehicles with particulate filters.

Denmark reports Booming Sales of Diesels with DPFs

The Danish Environment Ministry reports that the number of diesel cars sold with a particulate filter is booming since the tax on these cars was reduced.

On 1 January 2006, the registration tax on private cars with particulate filters was reduced, saving owners DKK 7200 or about €1000. The new figures show that the number of car models marketed with a particulate filter has increased from 58 in 2005 to 255 after the tax reduction came into effect at the turn of the year. The Danish Ministry of Taxation expects that 17500 extra passenger cars with particulate filter will be sold in Denmark within the next four years.

Russia bans Import of non-Euro 2 Second-Hand Cars

Russia's federal customs service has banned imports of second-hand cars, which do not comply with Euro 2 emissions regulations. The ban particularly affects Ukrainian second-hand cars. Vehicles manufactured in the Ukraine prior to 2005 (M category, cars) and 2006 (N category, light commercial vehicles) do not comply with the Euro 2 standard and so will not be admitted to the Russian Federation.

North Sea Ministers aim for Emissions Reductions from Ships

The North Sea Conference, a Ministerial working group of eight nations bordering the North Sea plus the European Commission, has called for a 40% cut in NOx emissions in the long-term and a reduction in the permitted sulfur content of fuel from 1.5% to 1%.

The Ministerial declaration notes concerns that if no further measures are introduced, by 2020 emissions of SOx and NOx from international shipping around Europe may surpass the total emissions from all land-based sources in the 25 EU Member States combined. Ministers agreed to cooperate to

strengthen international standards in the review of Annex VI of MARPOL 73/78 and the NOx Technical Code. The declaration states that special attention should be given to "reviewing the relevant technologies and the potential for reduction of NOx, and to recommending future limits of NOx emissions; to reviewing the technology and potential for reduction of VOC from volatile cargo in tankers and to studying and estimating the level of particulate matter as well as the reduction level in the future".

Ministers also agreed on the launch of the "Clean Ship approach", defined as "criteria for evaluating environmental performance of ships... as an incentive to encourage sustainable shipping". The aim is to submit proposals to the IMO (International Maritime Organisation) in 2006/07. Accreditation schemes, use of economic incentives and indexing systems, increased research and efficient monitoring are essential elements of the Clean Ship approach. Tax incentives to encourage the use of shore-side electricity for ships in ports were also agreed.

EU 2004 Fuel Quality Review

The European Commission has published its third annual report on the quality of petrol and diesel fuel used for road transport in the European Union. The report covers fuels on the market in 2004 and is based on required reports from each Member State.

The share of 'zero sulfur' (<10ppm) and 'low sulfur' (<50ppm) fuels increased significantly from 2001 to 2004 for the existing 15 Member States, but in the 10 new Member States the sulfur content was significantly higher. 'Zero sulfur' petrol and diesel was the overwhelming majority of fuel in Germany and Austria as was diesel (only) in Sweden. One or both of these zero sulfur fuels was also available to some extent in Slovakia, Ireland, Lithuania and Greece.

UK Department for Transport pushes for Sulfur-Free Diesel by 2007

The UK Department for Transport (DfT) wants sulfur-free diesel (maximum 10ppm sulfur) available throughout the UK by January 2007, two years ahead of the EU deadline. DfT has issued a consultation document aimed at making all large fuel outlets serve only sulfur-free fuel from that date. The Government believes that setting a 3 million litres per year throughput threshold will force oil refineries to switch quickly to the fuel (which the Government says will have a 'negligible' effect on the cost) and will prevent suppliers from having to cope with both current and sulfur-free fuels at the same time, thus reducing their costs.

NORTH AMERICA

EPA proposes Regulations on Emissions from Stationary Engines

The US Environmental Protection Agency (EPA) has finalised emissions standards for stationary diesel engines (such as those used to generate electricity and power compressors or pumps) and has proposed new regulations for stationary spark-ignition engines.

The New Source Performance Standards for stationary diesel engines will take effect in three increasingly stringent stages. The first, transitional stage will cover engines built after the rule was proposed but before 2007 model year and gives operators the option of purchasing a certified engine or demonstrating compliance of a non-certified engine. From 2007, engine manufacturers will have to certify that all new, modified or reconstructed stationary diesel engines meet the equivalent non-road NO_x, PM, CO and HC limits. This will not require add-on controls. From 2011 model year, add-on controls will be required to achieve the emissions limits for non-emergency engines. The full set of standards and implementation dates, which vary depending on power output, are available at: http://www.epa.gov/ttn/oarpg/t3/fr_notices/ci_nsps_fnl.pdf

The proposals for spark-ignition internal combustion engines include two rules: New Source Performance Standards that would apply to new stationary spark-ignition engines; and a technology-based air toxics standard that would apply to certain existing, new and reconstructed stationary reciprocating engines. Both rules are primarily targeted at NO_x but would also limit emissions of CO, non-methane hydrocarbons and air toxics. As for diesel engines, limits and dates vary depending on power output. EPA must issue a final rule by 20 December 2007. Details of the proposals are available at:

http://www.epa.gov/ttn/oarpg/t3/fr_notices/siandricefnlpr.pdf

California Emissions Standards for Large, Spark-Ignited Off-Road Engines

The California Air Resources Board (ARB) has approved new emissions regulations for large, spark-ignited (LSI) off-road engines. The regulations cover engines of over 25hp with engine displacement greater than 1 litre. The largest category of applications affected by these new regulations is LPG-fuelled forklift trucks.

The requirement includes harmonisation with EPA's 2007 HC+NO_x emissions standard of 2.0g/bhp-hr. Beginning in 2007, engine manufacturers may also certify engines to a range of optional low emissions standards ranging from 0.1 to 1.5g/bhp-hr HC+NO_x.

From 2010 the HC+NO_x limit will be reduced to 0.6g/bhp-hr for new LSI engines.

From 1 January 2009, there will also be a fleet average HC+NO_x emissions standard which will be tightened on 1 January 2011 and again on 1 January 2013. The fleet average emissions standard will depend on fleet size and equipment type with large forklift fleets required to meet the lowest fleet average emissions standard for HC+NO_x. Fleet owners may choose to use verified three-way catalyst-based retrofits as an option for complying with the fleet average emissions requirements.

California Proposals on Off-Highway Recreational Vehicles and Engines

The California Air Resources Board (ARB) has put forward proposals for changes to the off-highway recreational vehicle (OHRV) regulation which sets emissions standards for off-road motorcycles and all-terrain vehicles (ATV). Vehicles not meeting the standards can only be used for recreational purposes on public land at times and places unlikely to impact ozone levels. The proposal would harmonise with EPA on which utility vehicles may certify using ATV test procedures and would harmonise the evaporative emissions standards with EPA. It would also revise the riding seasons for non-complying OHRVs.

California Proposals for State NO₂ Air Quality Standards

The California Air Resources Board (ARB) has issued a draft report and a draft Technical Support Document on the "Review of the California Ambient Air Quality Standard for Nitrogen Dioxide." This follows a review of the scientific literature on nitrogen dioxide (NO₂) and its human health effects by ARB staff and the Office of Environmental Health Hazard Assessment (OEHHA).

Based on the results of that review, OEHHA has recommended revising the California Ambient Air Quality Standards (AAQS) by:

- lowering the 1-hour average standard from 0.25ppm to 0.18ppm, not to be exceeded, and
- setting a new annual average standard of 0.030ppm, not to be exceeded.

The final recommendations to revise the AAQS will be presented to the ARB Board in October 2006.

Oregon adopts California GHG Standards

The State of Oregon has adopted California's standards for light-truck and car greenhouse gas emissions. The new standards will take effect with the 2009 model year.

Final Rule on Diesel PM Exposure Limits for Mines

The US Mine Safety and Health Administration (MSHA) has strengthened the protection level for exposure to particulate matter from diesel exhaust in underground mines. MSHA's final rule for "Diesel Particulate Matter Exposure of Underground Metal and Non-metal Miners" will phase in over a two-year period a diesel PM limit of $160\mu\text{g}/\text{m}^3$ total carbon (TC) in air. The first phase, an elemental carbon (EC) final limit of $308\mu\text{g}/\text{m}^3$ became effective on 20 May 2006. The diesel PM limit will be reduced to $350\mu\text{g}/\text{m}^3$ TC on 20 January 2007 and the final limit of $160\mu\text{g}/\text{m}^3$ TC will come into force on 20 May 2008.

New York to require Diesel Retrofits for State-Owned Vehicles

The New York State legislature has passed a bill which will require State-owned diesel vehicles and those working on state contracts to use ultra-low sulfur diesel (ULSD) and to be equipped with best available diesel retrofit technology. The legislation will affect some 20000 vehicles over the next three years. Adopting the legislation will give New York access to federal funds that could pay for up to 80% of the cost of installing the retrofit systems.

Conference on Ultrafine Particles

An international conference on ultrafine particles organised by the South Coast Air Quality Management District (SCAQMD) considered the science, technology, and policy issues related to ultrafine particles in Los Angeles.

The conference was told that solid particles may be nearly completely eliminated with a Diesel Particulate Filter (DPF), but filtration cannot directly remove the gas phase precursors that can lead to the formation of volatile nuclei mode particles. Particulate Mass (PM) control does not automatically imply that ultrafine particles will be controlled and hence the European Union is considering a solid particle number standard following the development of measurement methodology in the United Nations' PMP (Particulate Measurement Programme) working group.

EPA Guidance on Air Quality Benefits of Retrofit Technologies

EPA has issued guidance to States on how retrofit projects can be used in state plans to meet Federal air quality standards and conformity determinations.

The guidance says that diesel retrofit technologies can reduce pollution from the existing diesel engine fleet by up to 50% for nitrogen oxides and up to 90%

for both particulate matter and volatile organic compounds. "Diesel Retrofits: Quantifying and Using Their Benefits in SIPs and Conformity – Guidance for State and Local Air and Transportation Agencies" is available on the EPA website.

EPA releases Model for State Idling Laws

The US Environmental Protection Agency has issued a 14-page "Model State Idling Law" to give guidance for States in developing their own idle regulations. The model is based on existing regulations in several States and generally limits idling of heavy-duty truck engines to 5 minutes. EPA said it is not developing Federal regulations on vehicle idling.

Oxygenate Rule for Reformulated Gasoline is ended

On 5 May 2006 the US Environmental Protection Agency (EPA) removed the requirement for Reformulated Gasoline (RFG) to include a 2% oxygen content.

Although oxygenates can be used to produce RFG, other gasoline components can be used to ensure that RFG continues to meet its clean air requirements. RFG is required by the Clean Air Act in large metropolitan areas with the greatest ozone pollution, but other areas may choose to use RFG to take advantage of its clean air benefits. EPA estimates that RFG reduces emissions of ozone-forming pollutants by 105000 tons per year, the equivalent of eliminating the ozone pollution from 16 million cars. RFG also reduces toxic pollutants by about 24000 tons per year, the equivalent of eliminating the toxic emissions from over 13 million vehicles.

Report on PM Emissions at Ports

The California Air Resources Board (ARB) has issued a study on particulate emissions from diesel engines associated with activities at two Californian ports.

The study evaluated the relative contribution of diesel PM sources at the ports to the cancer risks of people in the neighbouring communities. It considered emissions from cargo handling equipment and harbour craft as well as from locomotives and heavy-duty trucks while on port property and from the main and auxiliary engines of ocean-going vessels. The study concluded that port emissions are a major contributor of diesel PM to the South Coast Air Basin and pose a significant health risk to the area surrounding the ports. The major contribution was from ship activities (73%). In-port locomotives and trucks contributed only 3%, with the balance coming from harbour craft and cargo-handling equipment.

Emissions of Regulated Pollutants from In-Use Diesel Back-Up Generators

An article in press² for the journal 'Atmospheric Environment' reports regulated emissions for US diesel back-up generators of varying model year, engine technology and manufacturer in the 60–2000kW size. The average emissions factors for oxides of nitrogen (NOx) were determined to be approximately 41% and 47% lower than EPA's estimates for small and large generators respectively and the average particulate matter (PM) emissions factors were approximately 83% and 50% lower. All generators tested had lower emissions than used in EPA's AP-42 emissions inventory for NOx and PM. Results indicate that decreases in NOx emission rates for generators paralleled the non-road and on-road emissions standards.

² Sandip D. Shah et al; University of California, Bourns College of Engineering, and California Air Resources Board

Freightliner, Mack and Volvo to use SCR

Dr. Dieter Zetsche, the DaimlerChrysler CEO, has confirmed that the first of the company's new family of engines to be produced in the US will use a combination of cooled EGR and urea-SCR to meet the US's 2007 NOx emission limits. The new 14.8 litre 6 cylinder HPEP diesel engines will be produced at the Redford plant of Detroit Diesel, primarily for Freightliner applications. It will be followed in 2008 by a 12.8 litre unit and, by 2011, by 9.9 and 15.6 litre versions. All are expected to use Bosch common rail fuel systems with nozzle pressures up to 2400 bar.

At the end of June, the North American division of the Volvo Group, which includes Mack Trucks, also announced that it has selected SCR as the technology to achieve EPA's 2010 heavy-duty NOx standards. The base engines for 2010 will be the MP series, which will include EGR technology introduced in 2002 and DPF technology being introduced in 2007.

US DoE predicts 75% Increase in CO₂ Emissions by 2030

The US Department of Energy's statistical publication 'Energy Outlook' predicts that world energy consumption will grow on average by 2% per year from 2003 to 2030. The most rapid growth is in non-OECD countries. The publication says that the growth of energy use in the transport sector will slow down as a result of higher oil prices and the industrial sector will have the highest energy use growth. Global use of renewable fuels will only grow from 8% in 2003 to 9% in 2030; and global CO₂ emissions will increase by 75% from 25 billion metric tons in 2003 to 43.7 billion metric tons in 2030.

Quebec plans to adopt California Greenhouse Gas Emissions Regulations

Quebec has included the adoption of California's light-duty vehicle greenhouse gas emissions limits into its 6-year action plan to reduce greenhouse gas emissions. The proposal forms the second largest reduction in the Canadian province's cross-sectoral plan.

Quebec's plan also calls for new vehicles sold after 2010 to produce less greenhouse gases; standards similar to those enforced in California will apply to cars and trucks sold in the province which between 2009 and 2016 will reduce greenhouse gas emissions produced by new cars and light trucks by 25 to 30%.

DaimlerChrysler sponsors an EcoZoneTM

DaimlerChrysler is to sponsor the US's first EcoZoneTM - a public/private partnership designed to fund solutions that can measurably improve the local environment at no cost to taxpayers - in the District of Columbia. The initiative is funded solely through corporate sponsorships, with half of all revenues generated from educational outdoor signage going to fund the District's environmental and clean energy projects. At the sponsorship launch, DaimlerChrysler displayed Orion VII diesel-electric hybrid buses and GEM neighbourhood electric vehicles.

SOUTH AMERICA

Bogotá moves to cut Pollution from Diesel Vehicles

The mayor of Colombia's capital city has announced several measures to restrict the use of older diesel vehicles and to limit emissions from coal-burning industries within the city. Diesel trucks and buses more than 10 years old are to be banned from driving in four smoggy districts of the city between 7 a.m. and 11 a.m., the hours in which pollution levels are highest. The measures will be in effect from 22 May to 15 December 2006 and their effectiveness will be evaluated in November 2006.

The Colombian government is also studying importing low-sulfur diesel fuel to reduce the pollution in its capital city. Under the proposal, Colombia's state-owned oil company Ecopetrol would import diesel with less than 30ppm sulfur to mix with products produced domestically. Colombian refineries will begin to produce better quality diesel by 2010 at the latest, according to the Environment Ministry. Colombian diesel currently has 4500ppm of sulfur. By 2007 it should be 4000, in 2008 it will be 3000 and 500ppm by 2010.

Brazil sets Criteria for Low-Sulfur Fuel Distribution

Brazil's National Environmental Council (CONAMA) has issued a resolution setting criteria for determining which cities will receive low-sulfur diesel fuel. The resolution states that the fuel should first go to cities with the most severe air pollution, and then to cities with over 200000 inhabitants with the most pollution. Such criteria are needed because only 27% of all the diesel fuel available in Brazil is low-sulfur. Until now, the government has distributed the fuel only in major metropolitan regions without regard to pollution levels.

Volkswagen Brazil goes 100% Flex-Fuel

Volkswagen has announced that it is halting production of gasoline-only models in Brazil. All vehicles with gasoline engines will now have flex-fuel (gasoline/ethanol) capability.

ASIA-PACIFIC

Hong Kong adopts Euro IV Heavy-Duty and Euro 3 Motorcycle Standards

The Hong Kong Environmental Protection Department has published a regulation to require that newly registered heavy-duty vehicles meet Euro IV emissions standards from 1 October 2006 - the same date as the Euro IV deadline in the European Union. The new regulation will also require all newly registered motorcycles to comply with Euro 3 emissions standards from 1 January 2007. Japanese and US standards will be accepted whenever they have the same effectiveness in reducing emissions. For light-duty vehicles, Hong Kong has been implementing Euro 4 standards in phases, beginning on 1 January 2006.

Jakarta emissions-tests 'Bajaj' Mini-Taxis

In commemoration of World Environment Day, the Jakarta Environmental Management Agency (BPLHD) together with the Bajaj Initiative for Natural Resources and the Institute for Transportation Study (Instran) offered free testing of emissions from bajaj - three-wheeled diesel-fuelled motorised taxis.

Bajaj were first imported from India in the 1970s. They can easily navigate the narrow streets that are typical of Jakarta's kampongs and are mostly used to travel short distances. Data from the Jakarta Transportation Agency show there are about 14000 bajaj operating legally in Jakarta, with about 6000 more operating without legal documentation.

A study showed bajaj to be a major contributor to air pollution. The use of cheaper fuel blends causes bajaj

to release up to 12 times more pollutants than a car without a catalytic converter. The Instran programme officer said that bajaj produce hydrocarbons of up to 6464ppm, compared to the accepted level of 1200ppm. In response, the Jakarta administration plans to import 250 compressed natural gas-fuelled bajaj from India to replace the old vehicles.

Shanghai Buses will use DME Fuels

Before the end of 2006 Shanghai will have a demonstration bus route with the buses fuelled with dimethyl ether (DME), and by 2010 there will be more than 1000 of these vehicles in use during the Shanghai International Exposition.

In May 2005, China's first DME fuelled buses, jointly developed by Shanghai Jiaotong University, Shanghai Automotive Industry Corporation and Shanghai Huayi Company, were put in use. After almost one year's operation, inspection results from the National Vehicle Quality Supervision and Inspection Centres showed that the emissions of this bus are better than the Euro III emissions standard.

New Indonesian Cars need Cleaner Fuels

"Jakarta is the third most polluted city in the world, after Mexico City and Panama City. And vehicle emissions account for 80 percent of the pollution," Jakarta Governor Sutiyoso said last year.

In 2003, the State Minister for the environment issued Decree No. 41/2003 on the emissions thresholds for exhaust gases of new motorised vehicles, which requires car manufacturers to apply technology based on the Euro 2 emissions standard. Last year, the administration issued By-law No. 2/2005 on air pollution control, which amongst other things obliges all private car owners to carry out emissions tests on their vehicles twice a year and public transportation vehicles to use natural gas. However the type of fuel suitable for such vehicles is not yet widely available on the domestic market, so the ministerial decree on emissions thresholds cannot be properly implemented.

Beijing Drivers asked to leave their Cars at Home to improve Air Quality

Over 100 Beijing-based drivers' clubs have jointly launched a campaign asking their 200000 members to leave their cars at home at least one day a month to ease traffic jams, reduce noise and improve air quality in the Chinese capital.

There are more than 2.6 million motor vehicles in Beijing and the number is increasing by more than 1000 a day. According to research by the city's environment department, Beijing's vehicles emit 3600

tons of pollution each day and are the leading cause of air pollution. The city has this year replaced 4000 old, more polluting, buses and 30000 taxis with vehicles meeting tighter emissions standards.

Air Pollution in Pakistan is amongst the Highest in the World

The Economic Survey of Pakistan 2005-06 says that air pollution levels in Pakistan's most populated cities were among the highest in the world and were climbing, causing serious health issues. The levels of ambient particulates are generally twice the world average and more than five times as high as in industrial countries and Latin America.

The key factors contributing to air pollution in Pakistan are rapidly growing energy demand; increasing industrial and domestic demand; and a fast growing transport sector. In the cities, widespread use of low-quality fuel, combined with a dramatic expansion in the number of vehicles on roads, has led to significant air pollution problems. The number of vehicles has jumped from 0.8 million to about 4.0 million within 20 years, showing an overall increase of over 400%. Since 1980, the maximum growth has been seen in two-stroke vehicles, such as delivery vans, followed by motorcycles and rickshaws. Diesel trucks and buses have also increased at 200-300% since 1980.

Adelaide Air Quality improves due to Improved Vehicle Emissions

New figures from the Environment Protection Authority show that emissions levels in Adelaide have fallen significantly since records were first kept in 1979, but some pollution levels at the industrial cities of Port Pirie and Whyalla have increased and are yet to meet national standards.

The EPA monitors six pollutants - carbon monoxide, nitrogen dioxide, ozone, sulfur dioxide, lead and small particles - at 11 sites across Adelaide and the two Spencer Gulf cities. In Adelaide, CO levels fell from one-fifth of the national standard of 9ppm in 2002, to about one-tenth in 2004. Ozone statistics at all sites have remained steady at a quarter of the national standard. Sulfur and nitrogen dioxide levels also remained unchanged at a third of the standard. The figures show that in Whyalla, the amount of particles exceeded the national standard 23 times in 2004, compared to the national allowable limit of five.

Environment Minister Gail Gago said the results were very encouraging. "Air pollution in Adelaide has generally improved due to a combination of management of industry and improved vehicle emissions," she said.

NOx Pollution in Armenia

The Armenian National Statistics Service reports that so far in 2006 the average monthly concentration of NO₂ in the capital Yerevan has exceeded permitted limits by 2.8 times and NO by 1.2 times.

Study says Air Pollution kills 1600 in Hong Kong each Year

About 1600 people are killed each year in Hong Kong by illnesses related to air pollution, according to a new study released by Hong Kong universities. The study analysed records for hospital admissions and deaths from 1995 to 2000. The number of admissions and deaths rose as indicators showed that air quality worsened, according to the study's statistical analysis.

The study says Hong Kong has poor visibility 45% of the time. The city is worse than Los Angeles, London, New York and Paris in terms of respirable suspended particulate air pollution levels. Researchers said air quality improvements could bring benefits of more than HK\$20 billion a year. In addition, 64000 hospital "bed days" and 6.8 million family doctor visits could be avoided. The research was done by the University of Hong Kong, the Chinese University, the University of Science and Technology and Civic Exchange³.

³ "Air Pollution: costs and paths to a solution - Understanding the connection between visibility, air pollution and health cost, in pursuit of accountability, environmental justice and health protection"

BP commits to Australian Biofuels

BP Australia has signed contracts to provide over 200 million litres of biofuel per annum by 2008. This means that the company aims to deliver more than half of the Australian government's national target of 350 million litres of biofuel.

BP's Bulwer Refinery in Queensland will make 110 million litres per annum of biodiesel made from tallow, and market it from 2007. The company will also purchase the entire output (80 million litres per annum) of a new ethanol plant to be built by Primary Energy Pty Ltd in Kwinana, Western Australia, selling it across Australia from 2008. BP has also negotiated to buy 23 million litres of ethanol from the CSR Sarina distillery near Mackay, to be blended and sold in the Queensland markets from later this year. The company says it intends to 'invest in refining and distribution infrastructure and to secure product to enable biofuels to play a role in the future of Australia's petroleum supplies'.

AFRICA

South Africa gets Cars with Particulate Filters and Low-Sulfur Fuel

South Africa has launched its first diesel vehicle fitted with a particulate filter. The National Association of Automobile Manufacturers of South Africa (NAAMSA) said that because European parent companies of vehicle manufacturers are increasingly producing only vehicles fitted with filters, it is only a matter of time before South Africa will have to follow suit. "In Europe there is no market for diesel vehicles without it. So our parent companies are not designing diesel vehicles without filters, because there is no demand for it in their major markets". Whilst initially only expensive passenger vehicles will be fitted with filters in South Africa, in future all diesel vehicles would have them. Fuel specifications would have to be adjusted as the 'new generation' diesel vehicles need fuel with less than 50ppm sulfur which is not widely available in South Africa. Sulfur in diesel was recently reduced from 3000ppm to 500ppm in South Africa.

The growing popularity for diesel vehicles in South Africa has prompted Shell to roll out its V-Power diesel fuel, which has less than 50ppm sulfur, across the country. The fuel will be available in over 100 of the company's largest stations around the country.

GENERAL

Global Technical Regulations for Heavy-Duty Engine Emissions

The United Nations' Working Party on Pollution and Energy (GRPE) has agreed to submit the proposed Global Technical Regulations (GTRs) on the World-wide Heavy-Duty Certification procedure (WHDC) and World-wide Harmonised Heavy-duty On-Board Diagnostics (WWH-OBD) for adoption by the UN, subject to final corrections and the completion of ISO voting on related standards. The group also agreed to submit documents transposing these GTRs into Regulation 49 for future use in Europe. The transposition will include definition of the 'optional' parameters in WHDC, i.e. cold start weighting, soak time between the cold and hot start, sampling filter material and size and reference fuel.

New Study links In-Utero Exposure to PAH to Developmental Delay

A new study by the Columbia Center for Children's Environmental Health (CCCEH) published in Environmental Health Perspectives shows that prenatal exposure to air pollutants can adversely impact child development. Previous studies have

shown that the same air pollutants can reduce foetal growth, but this study, which examined a group of the same children at three years of age, is said to be the first to reveal that those pollutants can also affect cognitive development during childhood.

Investigators studied a sample of 183 three-year-old children and found that exposure during pregnancy to combustion-related urban polycyclic aromatic hydrocarbons (PAHs) were linked to significantly lower scores on mental development tests and more than double the risk of developmental delay at age three. In the study, the mothers' exposure during pregnancy to varying levels of airborne PAHs was measured by personal air monitoring. In this study, the children who were exposed in the womb to the highest levels of PAHs scored on average 5.69 points (6.3%) lower on cognitive tests than the less exposed children; and their risk of being developmentally delayed was 2.89-times greater than that of children who had lower prenatal exposure; both statistically significant results. The investigators controlled for other exposures that might have contributed to developmental problems such as socio-economic factors, exposure to tobacco smoke, lead, and other environmental contaminants.

The authors note that "airborne PAH concentrations can be reduced by currently available pollution controls, greater energy efficiency, and the use of alternative energy sources." The study is available at <http://www.ehponline.org/docs/2006/9084/abstract.html>.

New Study links Air Pollution to Increased Death Risk in Short-Term

The Harvard School of Public Health has released a new study which finds that individuals with diabetes, heart failure, chronic obstructive pulmonary disease (COPD), and inflammatory diseases are at increased risk of death when exposed to particulate air pollution for one or more years. The study was presented at a recent conference of the American Thoracic Society.

The study examined hospital discharges for individuals with these four types of diseases living in 34 cities between 1985 and 1999. Researchers compared this data with 12-month averages of PM₁₀, finding that an increase of 10µg/m³ of PM₁₀ over this timeframe increased the risk of death by 32% for diabetics, 28% for individuals with COPD, 27% for those suffering from congestive heart failure, and 22% for individuals with inflammatory diseases. While previous studies have found that long-term exposure to air pollution is associated with increased risk of death, this study looked at the risk of death in the first three years after patients were discharged from the hospital and saw that the risk increased in the first couple of years.

FORTHCOMING CONFERENCES

Diesel Partikel Filter/Diesel Particulate Filter

11-12 July 2006, Munich, Germany

Details at <http://www.car-training-institute.com>

The main topics will be: The legal framework - what future ceilings can be expected?; Expectations of diesel particulate filters - how to guarantee reliability; Innovative filter materials - properties, uses and behaviour; Retrofitting particulate filters - experience, test results and developments; Experience with diesel particulate filter as a standard equipment in passenger cars.

Regional Conference on Better Air Quality in Sub-Saharan African Cities

25-28 July 2006, Nairobi, Kenya

Details at http://www.unep.org/dpdl/urban_environment/pdfs/regionalconference.pdf

This conference aims to bring the air quality impacts of human and economic activity to the forefront of decision making in Sub-Saharan Africa. With one of the highest rates of urbanisation worldwide, air quality in cities in the region is rapidly degenerating. Finding and implementing solutions early on is a cost-effective approach to minimising the effects of poor air quality on human health.

10th ETH Conference on Combustion Generated Nanoparticles

21-23 August 2006, Zurich, Switzerland

Details at www.nanoparticles.ethz.ch

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

CAPoC 7 – 7th International Congress on Catalysis and Automotive Pollution Control

30 August - 1 September 2006, Brussels, Belgium

Details at <http://www.ulb.ac.be/sciences/cpmct/capoc7/index.html>

All topics related to applications and requirements of catalysis in automotive emissions control will be considered: catalyst technologies (TWC, lean burn of gasoline and diesel, cold start emissions); fuel cell catalysis; materials for catalysts, washcoats and fuel-borne catalysts; particulate emissions control; NOx emissions control under lean conditions; modelling of aftertreatment systems; unregulated pollutants; integrated emissions control systems, on-board

diagnostics; alternative fuel technologies and innovative technologies (new materials, recovery of precious metals, sensors).

Air Pollution and Environmental Health, from Science to Action:

The Challenge of Particulate Matter

6-8 September 2006, Lille, France

Details at www.iuappa-lille2006.org

Sessions include source identification and apportionment of particulate matter; air pollution and environmental health policies, PM measurement and analysis; and PM emissions from road traffic and health impact assessment.

AVL Kongress: Motor und Umwelt / Engine and Environment – Gasoline versus Diesel

7-8 September 2006, Graz, Austria

Details at www.avl.com

What developments in diesel and gasoline engine technology, driven by higher fuel prices, demanding emissions standards and air pollution restrictions, are to be expected? Exhaust gas aftertreatment trends – market-specific solutions?

European KONES 2006: International Scientific Congress on Powertrain and Transport Means

10-13 September 2006, Nalezow, Poland

The latest achievements in engine research, development and design with special attention to biofuels, ecology, injection and spray, combustion processes, exhaust aftertreatment, particulate filters, durability and reliability, and catalysis.

Global Powertrain Congress 2006 World Powertrain Expo

19-21 September 2006, Novi, Michigan, USA

Technical programmes include combustion, emissions and performance; hybrids; and natural gas and biofuels.

AVECC 2006 Asian Vehicle Emissions Controls Conference

20-23 September 2006, Jaipur, India

'On invitation only' Conference jointly organised by [ECMA](#), [MECA](#) and [AVECC](#).

As with previous AVECCs in 2001 (Thailand) and 2004 (China), AVECC 2006 is a technical symposium that will bring together experts from regulatory agencies, industry, and academia in Asia and around the world to share information and ideas on motor vehicle emissions control technology developments and experience.

2nd Advanced Powertrain Control Symposium

September 2006, Birmingham, UK

Details at enquiries@tic.ac.uk

Aachen Colloquium

9-11 October 2006, Aachen, Germany

Details at www.aachener-kolloquium.de

Towards Fuel Neutral Standards: Diesel vs Gasoline Engine

18-20 October 2006, Isola di Ortigia, Siracusa, Italy

Details at http://www.ata.it/Convegna/2006_Next/

FISITA World Automotive Congress 2006

22-27 October 2006, Yokohama, Japan

Details at <http://www.fisita2006.com>

SAE 2006 Commercial Vehicle Engineering Congress and Exhibition

31 October - 2 November 2006, Chicago, USA

Details at www.sae.org/comvec

World Refining & Fuels Conference Asia 2006

7-9 November 2006, Beijing, China

Details at <http://www.worldfuelsconferences.com/index.php?area=details&confID=7>

4. FAD-Konferenz: Herausforderung – Abgasnachbehandlungstechnologien für Dieselmotoren

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

Small Engine Technology Conference

13-16 November 2006, San Antonio, Texas, USA

The conference theme is Future Trends in Small Engine Technology to Satisfy Long-Term Demands and topics include advanced combustion, environmental impacts and HCCI (Homogeneous Charge Compression Ignition).

IFQC Technology & Policy Briefing

16 November 2006, Paris, France

Spark Ignition Engine Emissions (short course)

20-24 November 2006, Leeds, UK

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

The course covers emissions and combustion fundamentals; sources of emissions in SI engines; catalytic control of emissions; fuel composition effects; and future engine design for low emissions.

Symposium on International Automotive Technology (SIAT2007)

17-20 January 2007, Pune, India

Details at <http://www.araiindia.com/html/SIAT2007.jsp>

Topics include engine and powertrain, emissions (Euro 3 and beyond), emissions inventory and ambient air quality, inspection and maintenance programmes and global harmonisation of standards.

SAE Fuels and Emissions Conference

23-25 January 2007, Cape Town, South Africa

Details at <http://www.sae.org/events/sfl/cfp.htm>

5th International CTI Forum Exhaust Systems

29-31 January 2007, Nürtingen, Germany

Details at www.abgastechnik-forum.com

The forum will cover exhaust aftertreatment for diesel engines and spark ignition, future emissions legislation, liquid and solid urea SCR-systems, diesel particulate filters, in-engine emissions reduction and particulate and soot measurement technology.

MinNOx - Minimisation of NOx Emissions through Exhaust Aftertreatment

1-2 February, 2007, Berlin, Germany

Details at

http://www.iav.de/eng/4_events/iav_conferences.php

A significant reduction in NOx emissions from light and heavy-duty diesel engines will be mandatory as a result of upcoming emissions limits in Europe, the US and Japan. The conference committee calls for papers focused on SCR for passenger cars and heavy-duty, Lean NOx traps; Diagnostics and Simulation of DeNOx systems.

SAE 2007 World Congress

16-19 April 2007, Detroit, Michigan, USA

Details at

<http://www.sae.org/congress/techprogram/cfp.htm>

EAEC 2007: 11th European Automotive Congress

30 May - 1 June 2007, Budapest, Hungary

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

The conference will include themes on powertrain technology, vehicle and laboratory procedures, homologation and regulation and harmonisation in Europe.