



Newsletter

May - June 2007

INTERNATIONAL REGULATORY DEVELOPMENTS

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EUROPE

European Council of Ministers adopts Euro 5 and 6 Regulation

On 30 May 2007 the Council of Ministers of the European Union formally adopted the 'political' part of the Regulation which will introduce Euro 5 and Euro 6 for light-duty vehicles. The Council adopted all the amendments that had been suggested by the European Parliament in its first reading opinion agreed last December. The finalised text was published in the Official Journal on 29 June as Regulation (EC) 715/2007.

The Council's press release says that "achieving EU air quality objectives requires a continuing effort to reduce vehicle emissions. The industry should be provided with clear information on future limit values. For that reason, the regulation includes, in addition to Euro 5, the Euro 6 stage of emissions limit values. A considerable reduction in nitrogen oxide emissions from diesel vehicles is necessary to improve air quality and comply with limit values for pollution. This requires reaching ambitious limit values at the Euro 6 stage, without foregoing the advantages of diesel engines in terms of fuel consumption and hydrocarbon and carbon monoxide emissions".

The effective dates for Euro 5 and 6 are unchanged:
Euro 5

- M1 & N1 class I: new Types from 1 September 2009, all registrations from 1 January 2011.
- N1 Class II and III (and 'vehicles meeting special social needs'): new Types from 1 September 2010, all registrations from 1 January 2012.

Euro 6

- M1 & N1 class I: new Types from 1 September 2014, all registrations from 1 September 2015.
- N1 Class II and III: new Types from 1 September 2015, all registrations from 1 September 2016.

Approvals may be granted from 2 July 2007 and incentives are permitted from the same date.

This 'political' part of the Regulation does not include the particle number limits and revised (PMP-based) particulate mass limits, because these are contained in the implementing Regulation. This implementing Regulation will amend the 'political' Regulation to include test procedures, deterioration factors and (if agreed by Member States) the revised particulates requirements. This complementary regulation will be adopted through the process for adaptation to technical progress, which requires only scrutiny by the Parliament, rather than a plenary vote. It is expected to be debated by the Member States in early July. The formal publication of the Regulation 715/2007 sets the

deadline for adoption of the technical regulation as 2 July 2008.

Type-Approval Framework Directive agreed by European Parliament

On 10 May 2007 the European Parliament voted to accept the Commission's proposal for a fundamental re-work of the Framework Directive on Car Type-Approval. The proposal extends the scope of the Directive to trucks, vans, buses, and trailers. Previously, European Community Type-Approval was restricted to passenger cars, motorbikes, mopeds and agricultural tractors. The new Framework Directive will now be examined by Member States for a vote in the Council of Ministers.

The Commission says the new procedures will reduce the administrative burden on EU manufacturers and improve their competitiveness. Manufacturers of trucks, vans, buses, and trailers will no longer need to get approval for the same vehicle in 27 different countries before placing it on the market. The Commission statement says it will also open a new possibility for small and medium-sized enterprises to access the internal market by creating a European small-series Type-Approval system.

The Directive will introduce the mandatory application of United Nations ECE Regulations, which will replace 38 EC Directives. The directive will also prohibit the sale and fitting of parts or equipment which can impair the functioning of essential devices, including those to effectively treat tailpipe pollutant emissions.

Study says Ship Emissions "Key to EU Air Quality Targets"

A new study from the International Institute for Applied Systems Analysis (IIASA) in Austria for the European Commission, says that limiting air pollution from ships is a more cost-effective way of meeting EU air quality targets than tightening controls on land-based sources. If ship emissions are not further restricted, the study warns, the industry's growth will negate land-based emissions control efforts by 2020.

The study identifies measures that could reduce ship SO₂ emissions by 80% and NO_x emissions by nearly 90% by 2020. It puts the cost of implementing these measures at €5.5bn per year, compared with an estimated €7.1bn annually to meet air quality targets under the EU's thematic strategy on air pollution for land-based sources. Emissions abatement options explored in the study include seawater sulphur scrubbing, lower sulphur-content fuels, the use of "humid air" engines in new ships, slide valve retrofitting in existing ship engines and Selective Catalytic Reduction (SCR).

Commission Report on Emissions from Recreational Watercraft

On 11 June 2007 the European Commission published a "Report on the possibilities of further improving the environmental characteristics of recreational craft engines" as a communication to the Council and Parliament. The report is in response to review requirements in Directive 2003/44/EC.

The report notes the already-published study which considered four options for further emissions control, but which identified that the social cost of any further emissions reduction measures would seriously endanger the future of EU outboard engine manufacturers. The report confirms that the Commission intends to assess further scenarios "based upon the most stringent and technology driving emission rules already applied or envisaged in other parts of the world, in particular in the US". The report concludes that the divergences in political objectives and legislative approaches between the US and the EU considerably reduce the possibilities of harmonising future emissions legislation for recreational craft. Nevertheless, the Commission considers it important to continue monitoring future developments in the US and to assess to what extent these could "serve as a basis for a more ambitious approach towards minimising the impact of recreational marine exhaust emissions". The Commission intends to assess the impact of such an approach in further detail and will report back on the outcome at a later stage.

Commission Research Plan for Clean Aircraft Engines

The European Commission has proposed a Joint Technology Initiative (JTI) to improve EU research into cleaner aircraft. The plan will consolidate public and private research efforts under the CLEAN SKY programme. It aims to cut emissions of CO₂ by 40%, NO_x by 60% and noise by 50%. An €800m contribution from the EU's Framework 7 research budget will be matched by industry. The initiative will apply to three main aircraft categories (long range, regional and rotorcraft) and will include both engines and systems. CLEAN SKY will create various technology demonstrators, including flight test vehicles.

Switzerland to adopt Euro 5 instead of Diesel Particulate Filter Obligation

The Upper House of the Swiss Parliament has decided that the introduction of the obligation to fit particulate filters for diesel-engined vehicles should be

delayed for 2 years and that Euro 5 should apply at the same dates as for the European Union.

A year ago the Parliament announced its plan of action to introduce this year an obligation to fit particulate filters to new diesel-engined vehicles. Both the European Union and the World Trade Organization members Japan and Korea objected to this measure as being a technical barrier to trade. They also objected to the short transition period before the requirements came into effect. The Upper House of Parliament has now decided not to go against this opinion and to only set the EU Euro 5 standards as specified in September 2009. If the introduction of the Euro 5 is delayed in the EU, Parliament would retain the possibility of promoting particle filters by means of taxation incentives. Already 80% of light-duty diesel vehicles imported into Switzerland are equipped with filters, according to the Swiss Federal section for environment, traffic, energy and communication (Uvek).

Parliament also decided to postpone a decision on the introduction of the proposed Stage IIIB requirements for new standards for tractors.

Details of Berlin Environmental Zone

Germany's Bundesministerium für Wirtschaft und Technologie has formally notified the European Commission of details of the proposed Berlin environmental zone.

The document says that in 2005 and 2006, EU limit values for fine particulate pollution were exceeded at all traffic measuring stations in Berlin. It says that particulate emissions from diesel vehicles are a major contributing factor to this and Berlin has therefore drawn up a Clean Air and Action Plan. In order to reduce limit value exceedances on streets, the plan includes road-use bans for high-emission motor vehicles within the inner tram circuit, which is the worst affected area of Berlin. The ban will be introduced in two stages, on 1 January 2008 and 1 January 2010.

As of 1 January 2008, motor vehicles of Classes M and N (in other words, cars, vans, trucks and buses) may only enter the zone if they bear a coloured sticker indicating pollutant group 2, 3 or 4, effectively banning 'Euro 0' vehicles. With effect from 1 January 2010, Class M and N motor vehicles will only be permitted to enter this area if they are marked with a sticker indicating group 4, the cleanest category.

Guide to German Environmental Zones

The German Federal Office for Environment Protection (UmweltBundesAmt, UBA) has introduced a new website giving guidance on planned

environmental zones. The UBA has co-operated with regional governments to provide up-to-date details of planned environmental zones in Germany aimed at controlling particulate matter. The site gives details of the introduction date on the proposed zones, the environmental classes of vehicles which are allowed into the zone, and maps showing the perimeter of the zones. Details of some 20 zones, including Berlin, Heidelberg, Karlsruhe, Köln, München and Stuttgart are included.

The site is available at <http://www.env-it.de/luftdaten/download/public/html/Umweltzonen/index.htm>

France combines Ecology, Energy and Transport in a Single Ministry

New French President Nicolas Sarkozy and Prime Minister François Fillon have unveiled a government spearheaded by a 'super-minister' in charge of ecology, energy and transport. The brief includes energy, transport and climate change. The new Ministry of Environment and Sustainable Development was to have been headed by Alain Juppé, a former Prime Minister. However, he failed to be re-elected in the national elections on 17 June and has been replaced by Jean-Louis Borloo, the former Economy Minister.

Particulate Pollution in Milan

Northern Italy is now reported to have the worst air pollution in Europe. By mid-May, Milan had already exceeded EU and World Health Organization limits for particulate pollution on 80 days.

A coalition of parents and scientists, Genitori Antismog (Parents against Pollution), have fitted teenagers with portable monitors that measure ultrafine particles, and found very high results. Tommaso Abbate, 16, whose home is along a busy thoroughfare, found that the pollution levels at night in his room were up to 200 $\mu\text{g}/\text{m}^3$. During his 24 hours wearing the monitor, his average exposure was 127 $\mu\text{g}/\text{m}^3$. The World Health Organization says a safe target for such particles is 10 $\mu\text{g}/\text{m}^3$. Emile De Saeger of DG-JRC in Ispra, Italy, who analysed the students' data, said the children's monitors showed that their actual exposure to small particles was often higher than that gauged at monitoring stations.

Politicians in Milan say they are making slow progress. In Milan, 50 to 60% of particulate pollution comes from transportation sources. Milan has a dense population, lots of industrial activity, traffic, a rich population and is surrounded by mountains so there is little air movement. Officials have begun a number of programmes to reduce emissions. On 1 July 2007, the city will replace 2000 old buses with more efficient

models. There are car-free Sundays and more efficient heating systems are being installed. In addition, the Italian government offers tax incentives for buying cleaner conventional cars.

Valle d'Aosta (Italy) proposes Car Scrappage Incentives

The northern Italian region of Valle d'Aosta will make grants of some €500 000 for scrapping old vehicles and purchasing new ones. The local authority is currently discussing a grant of between €1200 euro and €1500, which will be added to a state allocation and to possible offers from the car traders, the Regional Energy Councillor said. The initiative is part of a regional law, currently being discussed by the authority, which is part of a regional plan for air pollution protection. The number of vehicles in circulation in the region stands at 83 000. Some 500 run on LPG or methane and about 20% meet Euro 4 requirements.

UK Air Quality worsens in 2006

Air quality in the UK worsened last year after having improved over the past two years, according to government figures. The number of days with "moderate or higher" pollution increased to an average of 41 in urban areas (compared to 22 in 2005) and 56 in rural areas (40 in 2005). Ozone continued to contribute most to pollution, followed by fine particles (PM10). However, NO₂ levels, along with SO₂ and CO, now rarely if ever reach moderate or higher pollution levels. The UK air quality indicator measures annual levels of pollution from particulates and ozone, the two pollutants thought to have the greatest health impacts, as well as the number of days on which levels of any one of a basket of five pollutants were 'moderate or higher'.

Air Pollution Levels rising in Belarus

The head of the Belarus Environmental Protection Ministry's atmospheric air, ozone layer and climate protection monitoring department, has told reporters that air pollution levels are rising in the country.

Between 1999 and 2006, pollutants emitted into the air from fixed sources reportedly rose from 374 200 to 423 300 tonnes and those from mobile sources from 1.05 million to 1.14 million tonnes. At the same time, the proportion of road vehicles emitting more pollutants than allowed had dropped from 13.8 to 13.4%. But almost 107 000 vehicles over seven years old were imported in Belarus in 2005 compared to 87 000 in 2002. Among measures to tackle air pollution, the official cited an increase in vehicles equipped with engines that meet the European

Union's Euro 4 and 5 emissions standards, the introduction of tighter emissions requirements for boilers and pollution monitoring at large industrial enterprises.

NORTH AMERICA

EPA Brochure on the Cost-Effectiveness of Heavy-Duty Diesel Retrofit

The US Environmental Protection Agency (EPA) has issued a new brochure entitled "The Cost-Effectiveness of Heavy-Duty Diesel Retrofits and Other Mobile Source Emission Reduction Projects and Programs". This informal document gives estimates of the cost-effectiveness of diesel retrofit technologies and other projects and programmes.

To help stakeholders compare cost-effective strategies, EPA has included in the document an appendix with 4 tables containing estimates of the cost per ton of pollutant reduced. The estimates, says EPA, are derived from the best data available to EPA at the time the document was issued. The tables include cost-effectiveness estimates for reducing NOx and VOC precursor emissions for ozone and for PM emissions.

The document is on the EPA website at http://www.epa.gov/otaq/stateresources/policy/pag_transp.htm#420b07006

Report on reducing Emissions from Construction Equipment

The Associated General Contractors of America (AGC), in conjunction with the US Environmental Protection Agency, has released a report entitled "Cleaner Diesels: Low Cost Ways to Reduce Emissions from Construction Equipment". The report examines a variety of equipment, operation and maintenance measures, fuel strategies, and retrofit technologies. It documents the costs and benefits and discusses practical implementation issues.

The report is available at: www.agc.org/hottopics

British Columbia introduces Diesel Truck Retrofit Programme

The government of the Canadian Province of British Columbia has introduced measures that will require older commercial diesel trucks to install an emission control device (diesel oxidation catalyst or equivalent) by 2009. The regulation affects commercial and government-owned trucks built before 1993 and weighing 5000kg or more. Construction equipment, recreational vehicles and unlicensed non-road vehicles are not affected. Canada's Environment Ministry says that although these trucks represent just

over 7000 of the more than one million vehicles in the province, they account for 6.8% of all particulate matter. The Ministry expects the measure to reduce PM emissions by 60 million tons/year.

US Legislation proposed on Air Pollution from Marine Vessels

Two US Senators have introduced legislation to reduce air pollution from marine vessels by establishing new standards for fuel and engines. Their Marine Vessel Emissions Reduction Act would require ships entering and leaving US ports to use lower-sulfur fuel and cleaner engines. The Environmental Protection Agency would have to establish a maximum sulfur content of 1000ppm for marine fuel by the end of 2010, unless EPA determines that it is technically infeasible. A 2000 ppm standard would be imposed until the lower level is feasible. Currently, marine fuel has an average sulfur content of 27000 ppm. EPA would also have to set new engine standards by 1 January 2012.

California proposes Clean Construction Equipment for Funded Projects

California's Senate budget committee has proposed requiring contractors to use "clean" construction equipment for construction projects receiving funding under their 'transportation bond' scheme. Under the proposal, any construction equipment with Tier 0 or Tier 1 engines would have to be retrofitted with Level 3 verified retrofit technologies such as diesel particulate filters. Contractors could only obtain an exemption from these requirements from the Air Resources Board if they demonstrate that retrofits cannot be applied safely or feasibly.

EPA releases Study on School Bus Idling

The US Environmental Protection Agency (EPA) has announced the results of a study that examined exhaust emissions levels from school buses when idling. In the study, EPA analysed school bus exhaust levels when the buses were idling and calculated the benefits from turning them off for various periods and then restarting them. The study concluded that idling for more than three minutes generates more pollution than stopping and re-starting the engine. The level of pollution from buses that idled for more than three minutes was 66% higher in fine particles than pollution generated from shutting off the buses and then re-starting them. EPA measured the pollution from six buses owned and operated by the Katonah-Lewisboro School District of New York.

California Motorcycle Review

The California Air Resources Board has released the results of the technical review that was required by the 1998 amendments to the on-road motorcycle regulations. Staff found that all major manufacturers had been able to meet the Tier I requirement of 1.4g/km 'HC+NOx' by the 2004 model year as required. They also found that manufacturers are on track to provide motorcycles in 2008 that meet the Tier II standard of 0.8g/km 'HC+NOx' on a corporate-average basis. The average emissions of motorcycles from major manufacturers certified in California in 2006 was 0.87g/km 'HC+NOx'. These manufacturers are currently using fuel injection, oxidation catalysts, three-way catalysts, and/or various sensors to achieve this emissions level.

The report also found that tampering, including removal of the catalytic converter, is a major concern for the on-road motorcycle fleet, with one-third of machines being modified.

US Initiatives on Retrofit

In addition to the continuing initiatives across the US to retrofit school buses with emissions control systems, two new initiatives are targeting refuse collection vehicles and emergency-response vehicles.

In Memphis, 85 solid waste trucks purchased between 2000 and 2005 (36% of the fleet) are to be retrofitted with Diesel Oxidation Catalysts (DOCs) by December 2007. Older trucks will be replaced over the next six years. The project is being funded by Cargill Corporation, as part of an agreement with the EPA to resolve alleged environmental violations.

Meanwhile Maryland has announced that it is working to retrofit fire trucks, ambulances, and other diesel vehicles with DOCs using national and state funding.

EPA proposes Stronger Standards for Ground-level Ozone

The US Environmental Protection Agency (EPA) is proposing to strengthen the nation's air quality standards for ground-level ozone, based on the most recent scientific evidence about the health effects of ozone, which is the primary component of smog. Ozone is created through a reaction of nitrogen oxides and volatile organic compound emissions in the presence of sunlight. Emissions from industrial facilities, electric utilities, motor vehicle exhaust, gasoline vapours, and chemical solvents are the major man-made sources of these ozone precursors.

The proposal recommends an ozone standard within a range of 0.070 to 0.075ppm. EPA also is taking comments on alternative standards within a range

from 0.060ppm up to 0.08ppm, the level of the current 8-hour ozone standard. The EPA staff report had recommended a standard between 0.06 and 0.08ppm. EPA also is proposing to revise the "secondary" standard for ozone to improve protection for plants, trees and crops during the growing season. The secondary standard is based on scientific evidence indicating that exposure to even low levels of ozone can damage vegetation.

US President issues Order for Automotive Greenhouse Gas Regulations

In response to the US Supreme Court's ruling that the Environmental Protection Agency (EPA) has the authority to regulate CO₂, President Bush has signed an executive order directing EPA to draft regulations for automobile greenhouse gas emissions. The regulations must consider "sound science, analysis of benefits and costs, public safety, and economic growth." The executive order calls for regulations to be proposed this fall and finalised by the end of 2008.

US Senate passes Fuel Economy Bill

If it becomes law, the US Senate's Energy Bill, which passed in Committee by 65 to 27 votes on 22 June 2007, will raise the US Corporate Average Fuel Economy (CAFE) standards for all passenger cars and light trucks by roughly 40% to 35 mpg by 2020. The bill's provisions would assess fuel economy based on vehicles' size, requiring cars of similar attributes to have similar fuel economy. It would therefore not allow US manufacturers to offset their larger SUVs' fuel figures with those of their smaller vehicles produced overseas. The House of Representatives' Energy and Commerce Committee is expected to examine the proposal in September.

California Report on Proposed Changes to Reformulated Gasoline

The California Air Resources Board (ARB) has released a staff report on its proposal to update the California reformulated gasoline (RFG) regulations.

In 1999 the RFG3 standard removed the oxygenate MTBE (methyl tertiary-butyl ether) from gasoline and substituted ethanol. ARB estimates a 7% increase in evaporative emissions due to the presence of ethanol and an overall HC emissions increase of 4%. ARB is therefore proposing amendments to ensure that RFG3 at least maintains the emissions benefits of previous standards. The proposals include decreasing the sulfur cap from 30ppm to 20ppm to allow the introduction of lean-burn gasoline technology; allowing emissions averaging for low level sulfur blends; setting a vapour pressure (RVP) limit of 7.00psi for

ethanol blends and 6.90psi for non-oxygenated fuels; amending the Predictive Model that fuel producers must use; and allowing refiners to balance any emissions increase from permeation against emission reductions from combustion.

US reduces Diesel Sulfur for Trains, Ships, and Non-Road Equipment

From 1 June 2007, new standards for sulfur content in diesel fuel in the US took effect, helping to reduce diesel emissions from locomotives, most marine vessels, and land-based non-road engines. Refineries are now mandated to reduce sulfur from the previous levels of about 3000ppm in non-road diesel fuel to a maximum of 500ppm. In 2010, sulfur levels in most non-road diesel fuel will be reduced to maximum 15ppm in line with on-road diesel, making it possible for engine manufacturers to use advanced emissions control devices. For locomotive and marine fuel, the 15ppm sulfur cap will take effect in 2012.

Children's Study may lead US to Review Air Standards

It is reported that a recently-released study showing a connection between air pollution and children's health concerns could push some US States to reconsider whether their air standards are sufficiently protective of public health. As the ambient levels measured in the study were below the current regulatory limits, it may also push EPA to consider tightening standards. This revision would be based on treating babies as a sensitive subpopulation subject to increased risks.

The study looked at a variety of emissions from transportation and power plant sources. It showed that air pollution, even at concentrations within legal limits, may be connected to an increased incidence of low birth-weight babies. It did not conclusively link a single pollutant to low birth-weight outcomes. The Northeast study is not yet in print but has been released online by the journal 'Environmental Health Perspectives'.

New York Proposes Congestion Charging

New York Mayor Michael Bloomberg proposes charging cars and trucks to enter Manhattan. The Mayor says this will help reduce air pollution and improve the health of some New Yorkers. Opponents claim that the proposal will lead to more traffic in neighbouring districts, because drivers will be looking for parking near subways there. They claim that truck traffic coming into the city will continue unabated and trucks crossing Manhattan will detour through poorer neighbourhoods. The consequence of all this will, they say, be increased air pollution in those areas.

EPA launches New Chinese Web Site

The US Environmental Protection Agency (EPA) has launched a new Chinese-language web site as part of its effort to provide environmental information in various languages. The new site compiles Chinese-language information on a wide variety of issues. EPA says it should also enhance environmental cooperation between the United States and China. EPA's Chinese site is at <http://www.epa.gov/chinese>, the Spanish site is at <http://www.epa.gov/espanol> and the English site at <http://www.epa.gov>.

ASIA-PACIFIC

New Zealand Consultation on New Vehicle Emissions Standards

New Zealand has issued a public consultation on proposals for new vehicle emissions standards, planned to take effect on 1 January 2008. Ministers said that they want to make sure that New Zealand benefits from advances in technology and emissions standards introduced overseas.

The "Land Transport Rule: Vehicle Exhaust Emissions Revision [2007]" (Rule 33001/2) updates existing minimum standards for new vehicles imported into New Zealand, requires tighter emissions standards for imported used vehicles and proposes emissions testing of used vehicles at entry to the New Zealand vehicle fleet. In addition, the proposals clarify that vehicles must be fitted with on-board diagnostic equipment if required by the emissions standard to which they have been manufactured and prohibit the removal of, or tampering with, a vehicle's emissions control equipment "if such an action would adversely affect the vehicle's emissions". There are exemptions for defence and emergency vehicles and for pre-1990 vehicles. The new standards would apply to vehicles when they are first registered for use on New Zealand roads. New vehicle imports would require a documentation check and used vehicle imports would be tested to ensure they meet the required standard.

The new standards allow certification to a variety of Australian, European, US and Japanese standards, with some variations in implementation dates. For new light-duty vehicles, the European standards are Euro 4 for vehicles manufactured from 1 January 2008, and Euro 5 for new models from 1 January 2011 (1 year later for existing models). For new heavy-duty vehicles, Euro IV applies from 1 January 2008 and, for diesel vehicles, Euro V from 1 January 2011 for new models and 1 year later for existing models. For used vehicles the new limits are also ramped from Euro 3 (light-duty) / Euro III (heavy-duty) in 1 January 2008 to Euro 5 / Euro V on 1 January 2013.

An in-service test equivalent to the Japanese tests and test limits is proposed as more than 95% of vehicles imported to New Zealand are from Japan. For four-stroke petrol and LPG vehicles this will be an idle-test for CO and hydrocarbons, with limits of 1% CO and 300ppm hydrocarbons. For two-stroke petrol and LPG vehicles the limits will be 4.5% CO or 7800ppm HC. For diesel vehicles there will be a snap acceleration test, with a requirement on smoke levels.

The public consultation will close on 9 July 2007. Further information is available at <http://www.landtransport.govt.nz/consultation/vehicle-exhaust-emissions>.

Confusion over China's introduction of Euro 3

China's National Development and Reform Commission has said they want to delay nationwide enforcement of Euro 3 emissions and fuels standard. In effect, the Commission has overruled the country's State Environmental Protection Administration (SEPA). The Commission says the 1 July 2007 deadline for tighter emissions controls is impractical and that enforcement of the new standard should instead be phased in over the next years.

A commission official said that oil refiners could not produce enough low-sulfur gasoline to enable the standards to be rolled out across the country by 1 July. Euro 3 would most likely be imposed first in big cities. It is already in place in Beijing. However, a spokesman for the environmental protection agency said it plans to go ahead with enforcing its rules nationwide on 1 July. To add to the confusion, officials at the two largest oil refiners, Sinopec Corp. and PetroChina Co., which together produce about 90% of China's gasoline, say they already have the capacity to make the cleaner fuel and are prepared to roll it out as soon as the government tells them to.

Japanese Initiative on Clean Vehicles and Fuels

Japan's Ministry of Economy, Trade and Industry has announced a new initiative to promote fuel cell and electric vehicles and to develop next-generation clean diesel engines and biofuels. The initiative is part of a push to reduce Japan's dependence on fossil fuels for vehicles from nearly 100% to below 80%.

The Ministry aims to implement a pilot hydrogen/fuel cell project over the coming years. The only timing mentioned is that 2030 is seen as the target for lowering the fuel cell vehicle price to make it comparable with gasoline-powered vehicles. On clean diesel engines, the Ministry plans to spend €150 million over five years. This will support the

development of next-generation diesel fuels and private sector research and development of clean diesel engines in or after 2009. The biofuel project features the development of higher quality fuels and aims to lower the price to about one-third of the current biofuel price by 2015.

Thai Cabinet endorses Tax Incentives for Environmentally Friendly Cars

Thailand's Cabinet has approved a tax incentive for manufacturers of environmentally friendly vehicles. Following the Cabinet session, the Deputy Prime Minister said legislators had endorsed a concessionary excise tax rate of 17% for vehicles meeting the government's "eco-car" criteria. Excise taxes applied to most cars range from 30 to 50%.

According to the Ministry of Finance, which first proposed the eco-car programme, the special rate should apply only to cars that meet Euro 4 emissions standards and consume no more than one litre of fuel every 20 kilometres. They also must have engine capacities of 1300cc or less for standard cars, or below 1400cc for diesel models. The Minister of Finance said the tax cut would not take effect until 2009, giving local companies time to adjust their manufacturing strategies.

New South Wales to buy Euro V Buses and Retrofit to Reduce Particulates

The Government of New South Wales, Australia, is to spend more than A\$120 million on green transport projects including buying 265 Euro V buses and refitting older models to reduce particle emissions. Under new contracts with private bus companies, any new bus purchased by the private networks will meet Euro V. The New South Transport Minister said there will be an environmental saving in a full year of 190 tonnes of greenhouse gases, 170 tonnes of nitrogen oxides, and 7 tonnes of particulates.

New Zealand Bus goes to Euro V

Infratil's New Zealand Bus division is to introduce Euro V buses in Auckland during August this year. Twenty new Volvo chassis meeting Euro V emissions requirements are currently being bodied by South Island coachbuilders. They will be used on Auckland's Link bus service, replacing the existing fleet of vehicles built in 1996. The company says the new vehicles will create 70% to 90% less pollution.

Philippines Study on PM and CO

A new study to be published in the Journal 'Science of the Total Environment' examines "particulate matter and carbon monoxide multiple regression models

using environmental characteristics in a high diesel-use area of Baguio City, Philippines”.

The study, by researchers from six universities and colleges in Georgia, USA, was conducted in Baguio City, a mountainous city where 61% of motor vehicles use diesel fuel. Ambient particulate matter (PM_{2.5} and PM₁₀) and CO were measured at 30 street-level locations for 15min. a piece during the early morning (04:50–06:30), morning rush hour (06:30–09:10) and afternoon rush hour (15:40–17:40). Environmental observations (traffic-related variables, building and roadway designs, wind speed and direction, etc.) were noted during each monitoring event. Additionally, PM_{2.5}, PM₁₀, CO, NO₂ and selected volatile organic compounds (BTX) were continuously measured at a downtown, third-floor monitoring station along a busy roadway for 11 days.

Multiple regression models were formulated to determine which pollution sources and environmental factors significantly affect ground-level PM_{2.5}, PM₁₀ and CO concentrations. The models showed several statistically significant relationships. These were between traffic levels and early morning particulate air pollution; traffic and morning rush hour CO; traffic and afternoon rush hour CO; and wind and early morning CO. The mean early morning, street-level PM_{2.5} was not significantly different from either of the rush hour PM_{2.5} concentrations due to nocturnal inversions, despite of a 100% increase in automotive density.

Ambient PM_{2.5} levels measured were above US EPA daily limit of 65µg/m³ and the Filipino/US EPA annual standards of 15µg/m³ with concentrations described as being “of a magnitude rarely seen in most countries except in areas where local topography plays a significant role in air pollution entrapment”. The authors comment that the elevated pollution concentrations and the diesel-rich nature of motor vehicle emissions are important to human exposure and as such warrant public health concern.

Source: Cassidya et al, Particulate matter and carbon monoxide multiple regression models using environmental characteristics in a high diesel-use area of Baguio City, Philippines; [doi:10.1016/j.scitotenv.2007.03.010](https://doi.org/10.1016/j.scitotenv.2007.03.010)

Air Quality in Jakarta worsens

Despite aggressive campaigning for more eco-friendly fuel usage in the Indonesian capital Jakarta, the number of clean-air days has continued its downward spiral, an official air quality quarterly report reveals.

By 17 April 2007, Jakartans had enjoyed "good" air quality for only 23 days. Even these were reportedly to be largely due to frequent rains that swept the city's particulate matter (PM₁₀) from the air. Last year the city had 32 days of good air for the same period. The City Environmental Board's (BPLHD) says that despite

the number of exceedances, the PM₁₀ average for this year's first quarter was 43µg/m³, well below the tolerable standard of 150µg/m³. In January, the ozone level reached 43.59µg/m³.

Jakarta's 2005 bylaw on air pollution control requires all modes of public transportation to use compressed natural gas (CNG) and all private vehicles to undergo biannual emissions tests. Data from the administration shows that on weekdays some 2.5 million private cars and 3.8 million motorcycles are on the city's roads.

Rising Air Pollution in Ho Chi Minh City

A study conducted in District 1 by the Ho Chi Minh City (HCMC) Department of Natural Resources and Environment found the city's dust content was three times higher than permissible levels. The lead content measured in the city was 2.4 times higher than last year and benzene has risen to nearly twice the safety threshold. HCMC Pediatrics Hospitals have recorded soaring numbers of children hospitalised due to respiratory ailments.

There are around 2 million motorbikes and half a million cars registered in the city. In the short term, the Ministry of Natural Resources and Environment aims to introduce a scheme to test all motorbikes for emissions levels once every five years. Additionally, motorcycle owners would be encouraged to use clean fuel and asked to pay environmental levies.

Evaluation of Ambient Air Quality in Guangzhou, China

A project supported by the National Natural Science Foundation of China to evaluate trends in air quality in Guangzhou over the last twenty-five years is reported in the Journal of Environmental Sciences.

Results showed that total suspended particulate (TSP) was the prominent pollutant: TSP accounted for nearly 62% of pollution, SO₂ for 12.3% and NO_x for 6.4% respectively. The average Air Pollution Index of Guangzhou over 6 years was higher than that of Beijing, Tianjin, Nanjing, Hangzhou, Suzhou and Shanghai. Concentrations of air pollutants have shown a downward trend in recent years but they are generally worse than ambient air quality standards for the USA, Hong Kong and the EU. SO₂ and NO_x pollution were still serious implying that exhaust gas pollution from all kinds of vehicles had become a significant problem for environmental protection in Guangzhou. The possible causes of worsening air quality are also discussed in this paper.

Source: Zhou et al, Evaluation of ambient air quality in Guangzhou, China; Journal of Environmental Sciences [doi:10.1016/S1001-0742\(07\)60072-2](https://doi.org/10.1016/S1001-0742(07)60072-2)

Japan to settle Lawsuit on Health Effects of Traffic Emissions

The Japanese government is preparing to pay ¥6 billion (€36 million) to victims of air pollution in an out-of-court settlement of a Tokyo air pollution lawsuit. The lawsuit was initiated in May 1996 by a group living near major traffic arteries who suffered from various respiratory illnesses. By February 2006, a total of 633 plaintiffs had joined the lawsuit, suing Toyota Motor Corp., Nissan Motor Co., five other automakers, the Shuto Expressway Corporation, and the State. In October 2002, a local court confirmed the link between the illnesses and vehicle emissions and ordered the municipal government and the State to pay a total of ¥79.2 million to seven patients living within 50 metres of major roadways.

Vietnam approves Agreement with Brazil on Ethanol Fuel

The Vietnamese government has said that it has assigned the Minister of Industry to sign an agreement with Brazil, the world's top ethanol exporter, to share ethanol fuel technologies. The directive did not provide details of the plan.

Sinopec completes Beijing Facility for Low-Sulfur Fuels

China Petroleum & Chemical Corp (Sinopec) has completed a facility at a Beijing plant capable of producing low-sulfur fuel ahead of the launch of stricter city emissions regulations for the Olympic Games. Yanshan refinery, the main fuel supplier to Beijing, now has a new 1.2 million ton-per year desulfurisation facility capable of producing gasoline and diesel with 10ppm maximum sulfur content.

Fuel in most of the country meets a 500ppm sulfur requirement and some cities are at 150ppm. China's revised gasoline standard will, on 31 December 2009, lead to the withdrawal from the market of gasoline with sulfur levels greater than 500ppm.

UNITED NATIONS

Regulating Greenhouse Gas Emissions from International Aviation and Shipping

A recent report by the Netherlands Environmental Assessment Agency (MNP) explores options for dealing with greenhouse gas emissions from international aviation and shipping in the framework of the United Nations Framework Convention on Climate Change (UNFCCC) or the Kyoto Protocol.

The results show that due to the high expected growth rates of international transport, by 2050 the share of unabated emissions from international aviation and shipping in total greenhouse gas emissions may increase significantly. A significant fraction of the global warming impact of non-CO₂ aviation emissions originates from NO_x emissions. Their inclusion would further increase the share of international aviation emissions. The report suggests that alternative approaches to regulating international aviation and marine emissions would be sector-wide regulation or the inclusion of such emissions in an international emissions trading scheme.

Source: den Elzen et al, An analysis of options for including international aviation and marine emissions in a post-2012 climate mitigation regime; MNP-report 500114007/2007.

GENERAL

Proposed International Standard for Verification of Particulate Filters

The International Standards Organisation (ISO) has launched a vote on a proposal from the Swiss standardisation body SNV for a new standard on "Testing of particle filter systems for internal combustion engines".

The proposed project is to specify "a test procedure and measuring method for assessing the efficiency of systems for filtering the exhaust gas of internal combustion engines". The proposal says the focus will be on size-specific separation characteristics for solid ultrafine particles, and on secondary emissions. The proposed standard will cover testing of both retrofit filter systems and those for installation on new vehicles. It is proposed that the Swiss VERT system forms the basis of the standard. The voting deadline is 23 July 2007.

Particulates Exposure inside a Car

A new paper from the University of Sydney, Australia, to be published in the journal *Transportation Research* analyses fine particulates collected on a minute-by-minute basis inside a car. A time-series modelling approach is adapted to study the effects of various interventions (speed, traffic conditions, in-vehicle environment, time-of-day, etc.). Multivariate time-series models show that vent position, air-conditioning status, time-of-day, en-route traffic conditions, and travel speed are all significant factors in the explanation of PM_{2.5} exposure levels.

Source: Issarayangyuna and Greaves, Analysis of minute-by-minute exposure to fine particulates inside a car – A time-series modelling approach; *Transportation Research Part D: Transport and Environment*, [doi:10.1016/j.trd.2007.04.001](https://doi.org/10.1016/j.trd.2007.04.001)

FORTHCOMING CONFERENCES

Combustion Processes

9-10 July 2007, Stuttgart, Germany
Details at www.car-training-institute.com/combustion

4th International CTI Forum Diesel Particulate Filter

11-12 July 2007, Frankfurt, Germany
Details at www.car-training-institute.com/dpf

JSAE / SAE Fuels and Lubricants meeting

23-27 July 2007, Kyoto, Japan
Details at <http://www.jsae.or.jp/2007fl/>

Sessions are planned on combustion, emissions, fuels, lubricants, and measurements and testing.

14th Asia Pacific Automotive Engineering Conference

5-8 August 2007, Hollywood, California, USA
Offers of papers are being solicited in areas including powertrain technology, vehicle design, and transportation challenges in emerging markets.

11th ETH Particles Conference

12-15 August 2007, Zurich, Switzerland

2007 Diesel Engine-Efficiency and Emissions Research Conference (DEER)

12-16 August 2007, Detroit, Michigan, USA

Europacat VIII

26-31 August 2007, Turku/Åbo, Finland
Details at <http://www.europacat.org/>

Sessions at the symposium include catalysis for pollution control (stationary), catalysis for pollution control (mobile), catalyst deactivation, regeneration and recycling, surface science, nanotechnology and "Towards 100% Selectivity in Catalytic Oxidation over Nanostructured Metal Oxides".

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.

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-events.com/>

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

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.

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

8-10 October 2007, Aachen, Germany

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 programs - 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.

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.

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/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.

2008 SAE World Congress

14-17 April 2008, Detroit, Michigan, USA

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, catalysis for sustainable energy conversion and greener process intensification.