



Newsletter

January - February 2007

INTERNATIONAL REGULATORY DEVELOPMENTS

Table of Contents

| | |
|--|-----------|
| EUROPE | 2 |
| Commission announces Proposals for Car CO ₂ Reduction | 2 |
| European Commission proposes Energy and Climate Change Package | 2 |
| European Commission proposes Revised Fuel Quality Directive | 2 |
| European Commission agrees German Grants for Euro V and EEV Trucks | 2 |
| Analysis of Policy Measures to reduce Ship Emissions | 3 |
| Belarus introduces Euro IV & Euro V Fuel | 3 |
| Danish Aid for Particulate Filters on Trucks and Buses is Approved | 3 |
| French plans to link Motorway Tolls to Pollution | 3 |
| Spanish Parliament votes to continue Incentives for Car Scrappage | 3 |
| Poland plans new Environmental Agency | 3 |
| Report on Pollution Levels in Italy | 4 |
| UK 2006 Air Quality Indicators | 4 |
| PM10 in the Atmosphere of Paris | 4 |
| Athens Air Pollution Increases causing Premature Deaths | 4 |
| NORTH AMERICA | 4 |
| US President calls for an Increase in the use of Renewable Fuels | 4 |
| US EPA Budget for 2008 | 4 |
| EPA Rule on Mobile Source Air Toxics includes Cold HC Standard | 5 |
| More Tier 2 Bin 5 Diesels for the US | 5 |
| EPA Report on Ambient Ozone Standard | 5 |
| California Air Quality Standard for NO ₂ | 5 |
| Field Trial on Retrofit Oxidation Catalyst for Railway Locomotive | 5 |
| US Initiative on Reduction of Particle Emissions from Outdoor Wood Heaters | 5 |
| Canada to Regulate Fuel Economy | 6 |
| California proposes Low-Carbon Standard for Transportation Fuel | 6 |
| SOUTH AMERICA | 6 |
| Vehicle Fleet changes in Rio de Janeiro linked to Aldehydes and BTEX emissions | 6 |
| ASIA PACIFIC | 6 |
| China notifies Details of Stage 3 Motorcycle Emissions Requirements | 6 |
| Euro IV comes into force in Australia | 7 |
| New Zealand restricts Import of Older Vehicles to Reduce Air Pollution | 7 |
| Taiwan EPA unveils Plans for Vehicle Emissions and Fuel Standards | 7 |
| On-road Remote Sensing in China | 7 |
| Hong Kong orders In-use Particulate Measurement Systems | 8 |
| Indonesia will permit use of Ferrocene Fuel Additive | 8 |
| Japan Imposing Tougher Vehicle Fuel-Economy Limits by 2015 | 8 |
| ASEAN Nations commit to Biofuels | 8 |
| China plans for Jatropha Biodiesel | 9 |
| Philippines adopts Biofuels Standard | 9 |
| MIDDLE EAST | 9 |
| Dubai increasing Pollution Checks | 9 |
| Abu Dhabi progresses towards Introduction of Green Diesel as Fuel | 9 |
| GENERAL | 9 |
| Conference supports Call for UN Environmental Organisation | 9 |
| New Study says Traffic Pollution can inhibit Lung Development | 9 |
| Researchers link Traffic-related Air Pollution to Ear Infections in Infants | 10 |
| Women at Greater Risk from Air Pollution | 10 |
| FORTHCOMING CONFERENCES | 10 |

EUROPE

Commission announces Proposals for Car CO₂ Reduction

On 7 February 2007 the European Commission announced plans to legislate for a statutory reduction in average new car CO₂ emissions to 130g/km by 2012 and for new CO₂ targets for vans.

The proposal will set an average of 130g/km by 2012 to be reached by vehicle technology with the existing EU target of 120g/km being reached by complementary measures. For vans, the fleet average emissions targets will be 175g/km by 2012 and 160g/km by 2015, compared with 201g/km in 2002. The complementary measures include efficiency improvements for car components with the highest impact on fuel consumption, such as tyres and air conditioning systems, and a gradual reduction in the carbon content of road fuels, notably through greater use of biofuels. There will also be support for research efforts aimed at further reducing emissions from new cars to an average of 95g CO₂ per km by 2020.

European Commission proposes Energy and Climate Change Package

The European Commission has proposed a package of measures to establish a new Energy Policy for Europe to combat climate change and boost energy security and competitiveness. The plan calls for Europe to cut greenhouse gas emissions by 20% by 2020, rising to 30% if other industrialised countries will do the same. On current projections, EU greenhouse gas emissions would increase by around 5% by 2030. The Commission proposes that a binding target of 20% of its overall energy mix will be sourced from renewable energy by 2020. This renewables target will be supplemented by a minimum target for biofuels of 10%. The Commission proposes measures on fuel efficiency, including acceleration of the use of fuel efficient vehicles for transport.

European Commission proposes Revised Fuel Quality Directive

On 31 January the European Commission issued their proposals for a new Directive for transport fuels. The Commission says that the proposed standards will not only make the fuels cleaner but will also allow the introduction of lower-pollution vehicles and machinery.

The proposal confirms that after 31 December 2008 all on-road diesel fuel will have to meet the 10ppm sulfur limit. The Commission says that "this will cut pollutant emissions, primarily of dust particles ('particulate matter'), the air pollutant most dangerous

for human health. This sulfur reduction will in particular facilitate the introduction of new pollution-control equipment such as particle filters on diesel vehicles". The permitted sulfur content of gasoil for use by non-road machinery and tractors will also be reduced to 10ppm one year later. Gasoil for inland waterway vessels will be reduced to 300ppm S from the same date and to 10ppm from 31 December 2011. The maximum permitted content of polycyclic aromatics (PAHs) in diesel, will be reduced from 11% to 8% for the 10ppm S fuel.

A new 'high biofuel' petrol will be established. This will be a separate specification and will require pumps to be marked to show that the fuel may not be suitable for all vehicles. The allowable content of oxygenates will be equivalent to 10% ethanol / 3.7% mass oxygen – for example 22% MTBE instead of 15%. There is no mention of the biofuel content of diesel. This is because the current 5% 'biodiesel' (fatty acid methyl ester, FAME) limit is a requirement of European Standard EN590, not a requirement in the current Fuel Quality Directive. The Commission has requested the European standards organisation (CEN) to reconsider the FAME limit set in EN590, but because there are no good environmental or health reasons for a limit to be set in Directive 98/70/EC, no other action is proposed.

On metallic additives, the Commission proposals note only that their effect is disputed and it has so far not proved possible to agree a test method to examine the claims. There is, however, a new Article requiring the Commission to continue to develop suitable test methodology and to include usage of metallic additives in 3-yearly monitoring reports to the Parliament and Council. One completely new element is an obligation on fuel suppliers to reduce life-cycle greenhouse gas emissions. From 2011, they will have to reduce emissions per unit of energy by 1% a year.

European Commission agrees German Grants for Euro V and EEV Trucks

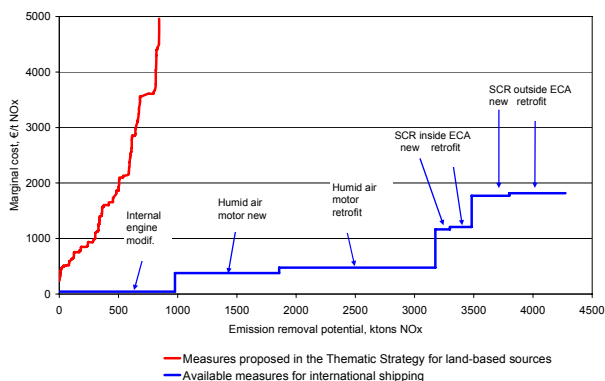
The European Commission has approved a German state aid scheme to encourage transport operators to acquire heavy-duty vehicles with lower emissions.

The new measures consist of capital investment grants or interest allowances granted to transport operators investing in trucks that comply with stricter environmental standards than those already in force. The overall programme, which has an annual budget of €100 million, will run for 6 years. Purchase of Euro V heavy vehicles will be subsidised only until 30 September 2008, when Euro V becomes mandatory, but subsidies for enhanced 'environmentally-friendly vehicles' (EEVs) will continue after that date. Although these grants and allowances will give heavy vehicle

operators an economic advantage, the Commission has found that the proposed aid scheme is in line with Community rules as it covers spending for environmental protection within allowed ceilings. Moreover, it will contribute to the creation of a market for enhanced environmentally-friendly heavy vehicles: similar measures have already been enforced in the Netherlands and Denmark. The Commission said that the scheme will reduce harmful road traffic emissions, particularly in congested urban areas, which have difficulties meeting European air quality limits.

Analysis of Policy Measures to reduce Ship Emissions

As part of the EU's Thematic Strategy on Air Pollution, IIASA (the International Institute for Applied Systems Analysis, Austria) has undertaken an analysis of policy measures to reduce ship emissions. Their review includes an assessment of the potential and costs of various technologies for abatement of sulfur oxides, NO_x, PM and VOC emissions. It concludes that identified technologies can reduce ship emissions by 80 to 90% at costs of €5.2 billion/year. The chart below shows the cost curves for NO_x.



Belarus introduces Euro IV & Euro V Fuel

Under a new directive issued by the Belarus Council of Ministers, trucks equipped with engines meeting Euro IV emissions standards are to start being built in Belarus this year and measures are to be taken to ensure the availability of suitable fuels.

The supply of diesel fuel meeting Euro IV standards is to be organised in the second quarter of 2007. In the third quarter of 2009, fuels suitable for Euro V vehicles will start being supplied to Belarus' filling stations. In addition a "grid service infrastructure for trucks equipped with Euro IV and Euro V" engines will be created this year. Under the directive, motor vehicles should be grouped by environmental classes and environmental requirements for fuel in the fourth quarter of 2007. Customs duty on imports of technological equipment, material and components

needed for manufacturing automotive equipment meeting Euro IV and Euro V standards has been set at 0%. The Minsk Automobile Factory (MAZ) has already built prototype Euro IV trucks.

Danish Aid for Particulate Filters on Trucks and Buses is Approved

The European Commission has approved a scheme to assist with the cost of retrofitting Danish trucks and buses with particulate filters. The scheme, which will run through 2007 and 2008, extends an existing system that applied only to trucks. The scheme allows up to 30% of the additional costs of retrofitting Danish-registered lorries and buses with particulate filters, whether the operators are Danish or foreign.

French plans to link Motorway Tolls to Pollution

The French Transport Minister has said the government is drafting legislation to reduce motorway tolls by up to 20% for low-pollution cars and trucks, potentially as early as January 2008. The toll reduction is likely to apply to trucks that meet Euro V emissions standards before they are mandatory and cars that emit less than 130g/km of CO₂. The proposal was the key recommendation from a government report on methods for reducing air pollution and greenhouse gas emissions from the transport sector while increasing the uptake of clean vehicles.

Spanish Parliament votes to continue Incentives for Car Scrappage

Spain's Parliament has approved a car scrappage incentive plan for this financial year, but limited to cars of up to 2.5 litres. It is to be the last of its type before Spanish car taxes are graduated according to environmental criteria from 2008. The first Prever plan was introduced in 1997, and has since provided incentives for the scrapping of 3 million old cars, and, MPs believe, achieved its objective of rejuvenating the Spanish vehicle parc and improving its safety and environmental performance. The new version of the Plan Prever will offer a tax incentive of €480 to anybody swapping a car more than 10 years old for a new vehicle with an engine of up to 2500 cc.

Poland plans new Environmental Agency

Poland this year will establish a new Environmental Protection Agency to augment its existing Environment Ministry. The agency will take over several ministry functions including oversight of the Environmental Inspection Office and responsibility for several environmental research institutes.

Report on Pollution Levels in Italy

A report by Italy's national environmental protection agency APAT shows that the daily limit for PM10 was exceeded at 77% of monitoring stations around the country. APAT said heavy traffic was the biggest cause of fine-particle pollution in most Italian cities. In Rome traffic is responsible for 70% of PM10 levels. The report also showed that NO₂ and ozone levels are too high in urban areas, but CO is under control.

UK 2006 Air Quality Indicators

The UK has issued provisional figures for UK Air Quality in 2006. The figures show that particulate (PM10) levels have increased slightly in each of the last two years, although there has been an overall decreasing trend since 1993. Both rural and urban ozone levels (daily maximum 8-hour running mean) also increased in 2006, partly as a result of the summer heatwave, but whereas there is no clear long term trend for rural levels, those in urban areas have shown an overall increasing trend since 1993. The Local Environment Minister said that more needs to be done at local, national and European level if cleaner air is to be achieved. He said that "nitrogen dioxide and particulates continue to be a problem in specific locations – usually associated with traffic emissions".

PM10 in the Atmosphere of Paris

A new paper¹ uses analysis of stable nitrogen-isotope compositions ($\delta^{15}\text{N}$) to provide data on the sources of primary and possibly of secondary nitrogen in the atmosphere in order to identify sources of PM10.

Characterisation of emissions from the different types of emitters in the city (road traffic, waste incinerators and heating sources) shows that these are clearly discriminated by specific isotope signatures. Waste incinerators yield particles with the lowest nitrogen concentrations. Particles with the highest nitrogen levels are emitted by the combustion of both diesel and fuel oil. The chemical similarity between diesel and fuel oil is reflected in relatively similar nitrogen concentrations in their combustion particles, but their different combustion processes result in differences in their corresponding $\delta^{15}\text{N}$ values. $\delta^{15}\text{N}$ is particularly useful in showing that a substantial portion of the nitrogen is the result of secondary reactions. These reactions are different in summer and winter, as are the pollution sources. Whilst the winter source of primary nitrogen is unclear, road traffic appears to be the source of primary nitrogen in summer.

¹ Widory, D; Nitrogen isotopes: Tracers of origin and processes affecting PM10 in the atmosphere of Paris; Atmospheric Environment 2007.

Athens Air Pollution Increases causing Premature Deaths

Increases in the proportion of airborne particles, provoked by traffic congestion and the burning of low-grade fuels, are responsible for thousands of deaths in Athens, experts told a conference.

Every increase of 10 $\mu\text{g}/\text{m}^3$ in the concentration of these particles provokes around 5000 deaths in Athens, according to Professor Klea Katsouyianni of Athens University's Medical School. "Athenians are affected most, as the presence of these microparticles increases significantly in cities with high concentrations of NO₂ and high temperatures," she said. The increase in road traffic in the capital, with an estimated 8 million road journeys conducted per day, boosts emissions of these particles, according to transport expert Panos Papadakos. And the illegal trade in diesel fuels – where tax-free heating oil is being sold as automotive fuel – is also contributing to pollution, as heating oil pollutes more than automotive fuel, according to Professor Costas Fytianos of Thessaloniki's Aristotle University.

NORTH AMERICA

US President calls for an Increase in the use of Renewable Fuels

President Bush has called for a reduction in US gasoline consumption by 20% in 10 years, with production of alternative and renewable fuels to reach 35 billion gallons a year by 2017 - about five times the current level. He also wants to revise fuel economy standards for cars and extend rules for light trucks, which he said would cut gasoline use by 5%.

Fuel economy rules for light trucks were revised last year so that vehicles of different sizes have different fuel economy targets. The President wants to apply the same methodology to cars before raising standards. The overall truck standard is being raised to about 24 mpg by 2011. The car standard, set at 27.5 mpg, has not been changed since 1990. Ford, GM and DaimlerChrysler had already promised to make half their fleets capable of running on E85 (85% ethanol with 15% gasoline) if the government took steps to guarantee greater fuel availability. They have already built about 6 million flexible-fuel vehicles but few ever run on anything but gasoline.

US EPA Budget for 2008

The US Environmental Protection Agency's 2008 budget, includes \$123.8 million for Clean Air and related research. This is an increase of \$7.5 million and is intended to improve research related to air

pollutants, study near-road air pollution, and support work to develop the Community Air Quality modelling.

\$35 million is included for National Clean Diesel Campaign grants, which is estimated to reduce particulate matter by approximately 5040 tons, which will achieve \$1.4 billion in health benefits.

EPA Rule on Mobile Source Air Toxics includes Cold HC Standard

The US Environmental Protection Agency's new Mobile Source Air Toxic (MSAT) regulations have been signed by the EPA Administrator and will take effect in 2011 for gasoline, 2010 for cars, and 2009 for fuel containers. The MSAT rule adds hydrocarbon emissions standards to the cold temperature CO test, toughens benzene standards for gasoline, and tightens evaporative loss limits for fuel containers.

The cold temperature non-methane hydrocarbon (NMHC) standards of 0.3g/mile (0.48g/km) for vehicles under 6000lbs gross vehicle weight and 0.5g/mile (0.8g/km) over that weight will be phased in – the former starting in 2010 to achieve 100% compliance in 2013, and the latter following 2 years later.

Once the new standards are fully implemented in 2030, they are expected to reduce emissions of mobile source air toxics annually by 330 000 US tons (just under 300 000 metric tonnes), including 61000 tons of benzene. EPA estimates annual health benefits from the particulate matter reductions of the vehicle standards to total \$6billion (€4.6bn) in 2030.

More Tier 2 Bin 5 Diesels for the US

At the North American International Auto Show, Mitsubishi confirmed plans to develop a next-generation common rail turbo-diesel engine which will incorporate a Diesel Particulate Filter and NOx trap catalyst system to meet Tier 2 Bin 5 emissions limits.

DaimlerChrysler, Audi and Volkswagen, each showed a new Tier 2 Bin 5 compliant BlueTec[®] model at the show in Detroit: DaimlerChrysler introduced its MercedesBenz Vision GL 420 BlueTec[®]; Audi showed its new Q7 3.0 TDI BlueTec[®]; and Volkswagen had its concept Tiguan on display.

EPA Report on Ambient Ozone Standard

The US Environmental Protection Agency (EPA) has released recommendations for the revision of the ambient ozone standard. The final staff report recommends that the administrator consider a new primary ozone standard of between 0.060ppm and the current level of 0.08ppm as the current standard is not adequate to protect public health. It also recommends

a secondary standard to protect against ozone damage to welfare, including damage to plants. EPA will propose action on the ozone standards by 20 June 2007.

California Air Quality Standard for NO₂

On 22 February 2007, the California Air Resources Board (ARB) considered proposed ambient nitrogen dioxide (NO₂) standards. The proposals would lower the one-hour NO₂ standard from 0.25ppm to 0.18ppm and set the annual standard to 0.03ppm. The US Federal annual standard is 0.053ppm.

Field Trial on Retrofit Oxidation Catalyst for Railway Locomotive

A one year field test of a long-haul diesel-electric railway locomotive fitted with a retrofit oxidation catalyst has been announced by Union Pacific Railroad. The US Environmental Protection Agency's National Vehicle Fuels and Emissions Laboratory is funding most of this field test.

The test, claimed to be the industry's first such fitment, will be conducted in the Los Angeles area. The diesel engine has also been equipped with sensors that can be remotely monitored to help evaluate how the system is functioning. The emissions performance and the maintenance requirements for the locomotive will be evaluated at the end of the one-year test period.

During February the locomotive took part in the 'Green Locomotive Technology Tour' in California, organised by Union Pacific and General Electric. At each stop, representatives of the two companies briefed federal, state and local air quality officials, regulatory and elected officials, and high school students on emissions reduction technologies. The tour also featured a locomotive for use in rail yards which uses modified Tier 3-certified off-road diesel engines and a 1982-built low-horsepower yard locomotive retrofitted with a diesel particulate filter.

US Initiative on Reduction of Particle Emissions from Outdoor Wood Heaters

Ten key manufacturers of outdoor wood-fired heaters, representing some 80% of the US market, have reached a voluntary partnership agreement with the US Environmental Protection Agency (EPA), to make cleaner heaters available this year. The heaters are used to provide heat and hot water for homes and other buildings. Their use has increased in recent years, resulting in concern on particle pollution. The new heaters will be about 70% cleaner than current models. They must emit no more than 0.6 pounds of particle pollution per million BTUs of heat input.

Canada to Regulate Fuel Economy

Canadian Prime Minister Stephen Harper has announced that Canada will regulate the fuel efficiency of motor vehicles, beginning with the 2011 model year. His speech followed the release of the recent IPCC climate change report and in the context of Canada's rapidly worsening greenhouse gas emissions situation.

California proposes Low-Carbon Standard for Transportation Fuel

California Governor Arnold Schwarzenegger has announced plans to establish what he called the "world's first low-carbon standard for transportation fuels." The standard, which will be developed by the California Air Resources Board (CARB), will require a 10% reduction by 2020 in the carbon intensity of fuels used in passenger cars. Fuel companies could comply with the standard by reducing carbon emissions associated with either the production or the burning of their products. The latter could, for example, include blending ethanol into gasoline. In California, transportation accounts for about 40% of greenhouse gas emissions and 96% of transport fuels are petroleum-based. A study is under way by the University of California to develop protocols for measuring the "life-cycle carbon intensity" of transportation fuels. CARB must complete its review of the protocols by June.

SOUTH AMERICA

Vehicle Fleet changes in Rio de Janeiro linked to Aldehydes and BTEX emissions

A new article to be published in the journal *Chemosphere*² reports on a monitoring campaign to assess aldehydes and BTEX (benzene, toluene, ethylbenzene, xylenes) concentrations in the Tijuca district of Rio de Janeiro, an area with commercial activities and a high flux of vehicles.

The study found a high ratio of formaldehyde to acetaldehyde, which it attributes to the extensive use of compressed natural gas (CNG). The number of CNG vehicles in the metropolitan region of Rio de Janeiro increased from 23 000 in January 2001 to 161 000 in January 2005. Monitoring data show that, for the same period, methane and formaldehyde concentrations increased while NO_x and CO levels diminished. Benzene and toluene concentrations were lower than the values determined in 1996, for the same location. The levels of ethylbenzene and xylenes were similar to values obtained in 1996. The researchers, from Cidade Universitária, say this may

be explained as a consequence of changes in the gasoline composition.

² Martins et al, Atmospheric levels of aldehydes and BTEX and their relationship with vehicular fleet changes in Rio de Janeiro urban area; doi:10.1016/j.chemosphere.2006.09.088

ASIA PACIFIC

China notifies Details of Stage 3 Motorcycle Emissions Requirements

China has notified the World Trade Organisation of a new National Standard for limits and measurement methods for emissions of pollutants from motorcycles (China Stage III). The document includes requirements for Type Approval, Conformity of Production (CoP) and durability. The new requirements will be applicable from 1 January 2008.

The new standard (GB 14622-200x) is issued by the State Environmental Protection Administration (SEPA) and will replace GB 14622-2002. It is based upon EU Directive 2002/51/EC (EU Stage 3) but without the recently-introduced alternative of measurements and limits using the World-Harmonised Motorcycle Test Cycle (WMTC). Other differences from the EU Directive include deletion of the idle CO test (Type II test); maximum speed in the EUDC; different reference fuel specifications; and inclusion of a Stage III standard for 3-wheelers. In addition, there are endurance (durability) requirements based on the US Federal Register but with modified distance (the EU durability requirements have not yet been published). Compared to the previous issue of the Chinese standards, the new standard modifies the load setting rules and revises the reference fuel.

The requirements are applicable to spark-ignition engined motorcycles of classes L3, L4 and L5 (i.e. 2 and 3-wheelers of >50cc and max. speed >50km/h), although the scope in the English translation mentions capacity of *not more than* 50ml. The standards cover machines fuelled by gasoline, LPG or natural gas, including dual-fuelled systems. Limits are:

| Classification | | Limit for emission (g/km) | | |
|-----------------------|--------------------|---------------------------|-----|-----------------|
| | | CO | HC | NO _x |
| Two-wheel motorcycles | <150 ml (UDC) | 2.0 | 0.8 | 0.15 |
| | ≥150 ml (UDC+EUDC) | 2.0 | 0.3 | 0.15 |
| 3-wheel motorcycles | All (UDC) | 4.0 | 1.0 | 0.25 |

UDC: ECE R40 test, including measurement of emissions on all the six urban cycle repeats. Sampling starts at T = 0.
 UDC+EUDC: ECE R40 + EUDC test for machines with a 90km/h maximum speed. Emissions are measured on all the urban and suburb cycles. Sampling starts at T = 0.

The limits for two-wheelers are the same as EU Stage 3. For 3-wheelers, current EU limits, for comparison,

are 7.0g/km CO, 1.5g/km HC and 0.4g/km NOx. Type Approvals can be extended from a two-wheeler to a 3-wheeler with the same engine and exhaust system and same or similar gearing.

The durability requirements are for distances of 12000km for motorcycles of 50 to 169cc; 18000km for those of 170 to 279cc and 30000km for ≥ 280 cc. The durability test consists of an 11-mode procedure with the maximum speed for each mode depending on the engine capacity bands. Modes 1 to 9 are at speeds of 45 to 70km/h with modes 10 and 11 at 70, 90 or 110km/h depending on capacity. There are no assigned deterioration factors but the minimum test mileage is half the durability requirement.

The document was expected to be adopted in mid-February following completion of the WTO comment period, and to enter into force in mid-August. The standard will be effective from 1 January 2008 and one year later all motorcycles manufactured, sold and registered must comply.

Euro IV comes into force in Australia

From 1 January 2007 new heavy-duty vehicle models launched in Australia must be fitted with Australian Design Rule (ADR) 80/02 compliant engines. ADR 80/02 is equivalent to and based on Euro IV. It applies to all new vehicles (not only new models) from 1 January 2008. ADR80/02 requires emission control durability and on-board diagnostics (OBD) to warn against functional failures (such as an empty urea tank). If activated, the OBD will de-power the engine to limit harmful emissions.

The Australian National Transport Commission says that further environmental benefits will be achieved from the introduction of ADR80/03 (Euro 5) engine emissions requirements from 1 January 2010. ADR 80/03 includes a requirement to directly monitor emissions levels against set thresholds. Both ADR80/02 and ADR80/03 accept compliance to comparable United States and Japanese standards.

New Zealand restricts Import of Older Vehicles to Reduce Air Pollution

New Zealand's Associate Transport Minister has announced measures to restrict imports of vehicles with older technology to help reduce vehicle emissions which contribute to air pollution.

A vehicle emissions technology standard will be introduced. Vehicles will need to meet the standard before they can be imported, and will then be tested at the border to make sure that they meet the standard. The Transport Ministry is to draft a Rule outlining options for entry restrictions on vehicle imports, which will be released for industry and public consultation.

The Minister says the draft Rule would set out a series of steadily increasing standards that used vehicles would have to meet and which may be ready to be implemented in 2008. The Rule will also update emissions standards for new vehicles to ensure they meet current international standards and take advantage of the improved fuel standards introduced to New Zealand in January this year, plus those planned for 2009. The minimum exhaust emissions standard proposed for petrol cars is the Japanese standard, introduced in Japan from 2000, and proposed to be implemented in New Zealand from 2008. For diesel vehicles, it is proposed to implement, from 2009, the 2002 Japanese standard. The measure is one of several government initiatives to improve vehicle emissions, including cleaner diesel fuel and the introduction of the visible smoke check as part of the warrant of fitness.

Taiwan EPA unveils Plans for Vehicle Emissions and Fuel Standards

In their annual report, the Taiwan Environmental Protection Agency has said that more aggressive air quality improvement measures and tighter restrictions on vehicle emissions will be implemented this year.

As part of their Clean Vehicle Development Plan, the EPA will use guidance and incentives to encourage motorbike manufacturers to continue research and development on the production of low-polluting fuel injection engine motorbikes. EPA will also look at measures to encourage citizens to use such vehicles. EPA will aim to increase the inspection rate, to phase out older motorcycles and diesel vehicles and to replace them with new vehicles. The EPA also plans to introduce more stringent fuel standards this year. These will greatly reduce the allowable level of sulfur in petrol and diesel in line with international trends. Air quality improvement projects in Kaohsiung, Pingtung, Yunlin, Chiayi, and Tainan counties (the most seriously polluted zones) are seen as a major priority.

On-road Remote Sensing in China

A new study³ to be published in 'Atmospheric Environment' studies the real-world emissions of CO, HC and NO using an on-road remote sensing system at five sites in Hangzhou, China in 2004 and 2005. Average emissions factors of these emissions for 32000 petrol vehicles of different model year, technology class and vehicle type were calculated in grams of pollutant per unit of fuel use.

Because the availability of data used in traditional on-road mobile source estimation methodologies is limited in China, an approach using fuel sales as a measure of vehicle activity was used, together with

exhaust emissions factors from remote sensing. Results show that in 2005 petrol vehicles exhaust emissions contributed over 182000 tonnes per year of CO, 9000 tonnes of HC and 5000 tonnes of NOx. These inventories are 45.5% higher, 6.6% higher and 53.7% lower for CO, HC and NOx, respectively, than the estimates using the IVE travel-based model.

³ Hui Guo et al, On-road remote sensing measurements and fuel-based motor vehicle emission inventory in Hangzhou, China doi:10.1016/j.atmosenv.2006.11.045

Hong Kong orders In-use Particulate Measurement Systems

The Hong Kong Environmental Protection Department (EPD) has ordered an in-use portable particulate measurement system to establish an emissions database for in-use vehicles in Hong Kong.

The database will provide a basis to evaluate the effectiveness of the motor vehicle emissions control programme and to develop new motor vehicle emissions control strategies. It will also be used to support the motor vehicle emissions model for compiling local vehicle emissions inventories, and estimating vehicle emissions for major Environmental Impact Assessment studies. In the first year, Hong Kong EPD intends to measure the emissions of around 40 vehicles using the Sensors Inc. Portable Particulate Measurement Device (PPMD) system which uses a quartz-crystal microbalance to measure particulate mass. In future the equipment might be used to monitor the durability of new vehicles.

Indonesia will permit use of Ferrocene Fuel Additive

The Indonesian government's decision to allow state oil company Pertamina to use the octane booster ferrocene has been criticised by the Jakarta Environmental Management Agency (BPLHD). The agency said that use of a metallic fuel additive to replace lead in gasoline would be a huge setback for the city's blue sky project and would work against the city's clean air campaign.

The State Ministry for the Environment issued a recommendation to Pertamina on the use of ferrocene in November 2006, only four months after Pertamina stopped producing leaded gasoline. The ministry determined the alternative octane booster had no detrimental effects on the environment, basing its conclusion on the absence of a comprehensive study. A spokesman said that the ministry had only recommended the use of ferrocene if the supply of the imported high-octane motor gasoline components was disrupted. Pertamina must report to the ministry how much ferrocene it will use prior to production.

A leading environmental group, the Joint Committee for Leaded Gasoline Phase-Out (KPBB), has threatened to file a lawsuit against the government over its recommendation. The group says that the recommendation contradicts the ministry's 2005 guidelines on the unleaded gasoline programme, which bans the use of metallic additives including manganese and ferrocene.

Japan Imposing Tougher Vehicle Fuel-Economy Limits by 2015

The Japanese Ministry of Economy, Trade and Industry and the Ministry of Land, Infrastructure and Transport have agreed new fuel efficiency standards. The ministries plan to revise regulations during this summer. Cars, including diesel engine models, will be required to run 16.8 kilometres on one litre of fuel under a specified driving mode. The figure is 23.5% more than an average of 13.6 km/l in 2004. The 2015 targets for small buses and small trucks are set at 8.9 km/l and 15.2 km/l, respectively, up 7.2% and 12.6% respectively from 2004 averages of 8.3 km/l and 13.5 km/l. The current standards require fuel efficiency of 15.1 km/l on passenger cars by 2010.

Vehicle fuel economy will be tested using a new method called "JCO8," instead of the current 10-15 method. The new method is claimed to more accurately reflect actual vehicle performance. An official of the Japan Automobile Importers Association said the new method is similar to one currently used in Europe.

The plans call for use of METI's "top-runner" method, under which authorities set targets based on the most effective technologies in a given area and then provide incentives for their adaptation across an industry. Carmakers and importers that fail to meet the standards will be subject to a penalty of ¥10 million and public disclosure, according to the recommendation.

ASEAN Nations commit to Biofuels

On 15 January 2007, leaders from ten south-east Asian nations, Australia, New Zealand, India, Japan, China and South Korea, together accounting for half the world's population, signed an agreement committing to a reduction in the use of fossil fuels and the promotion of alternative energy sources. ASEAN data estimates that greenhouse-gas emissions may triple in south-east Asia by 2030, with demand for energy doubling in the same period.

The Cebu Declaration on East Asian Energy Security includes reducing greenhouse-gas emissions and increasing efforts to reduce dependence on oil imports, in particular the development of biofuels,

hydropower and nuclear energy. A heavy emphasis was placed on biofuels using crops such as sugar or palm oil as feed stock.

China plans for Jatropha Biodiesel

The State Forestry Administration of China plans to plant 13 million hectares (an area the size of England) with jatropha trees for biodiesel. Jatropha is currently grown on around 2 million hectares across the country. The forest, mostly spread over southern China, is expected eventually to produce nearly 6 million tons (6.8 billion litres) of biodiesel every year.

Philippines adopts Biofuels Standard

Philippines President Gloria Macapagal-Arroyo has signed into law a mandatory biofuels standard. Republic Act 9367 requires a 5% ethanol blend for gasoline within two years, increasing to 10% within four years under the approval of a new National Biofuels Board. For diesel, a 1% biodiesel blend is required within 3 months, to be increased to 2% within two years. The Act also zero-rates the specific tax on the biofuels component of blended gasoline or diesel.

MIDDLE EAST

Dubai increasing Pollution Checks

Dubai is putting in place new equipment to reduce air pollution, including state-of-the-art technology to check vehicle emissions to identify vehicles that exceed the specified emissions limits, irrespective of the fuel they use. Currently the emissions level of vehicles is checked at the time of their annual registration, but it is now envisaged the municipal inspectors will conduct random checks because many vehicles are not properly maintained.

Abu Dhabi progresses towards Introduction of Green Diesel as Fuel

The technical committee formed by the Abu Dhabi Executive Council has announced an action plan to move to ultra-low sulfur diesel. By 2010, the current high sulfur (>500ppm) diesel will be replaced by fuel having a sulfur content of 50ppm. By 2012, diesel that has sulfur content of 10ppm will be introduced.

The Committee consists of members from the Environment Agency - Abu Dhabi (EAD), the Federal Environment Agency (FEA), Takreer, ADNOC Distribution, the Department of Transportation, the General Headquarters of the Abu Dhabi Police and the Emirates Standardisation and Meteorological Authority. According to EAD, significant improvements in Abu Dhabi's air quality can be expected, particularly in the urban areas, when there is a move towards

using cleaner fuels. The most polluting vehicles have been identified as buses and taxis, as they are in use for the majority of the day.

GENERAL

Conference supports Call for UN Environmental Organisation

At a conference for global ecological governance held in Paris on 2-3 February 2007, participants called for the transformation of the United Nations Environment Programme into a fully-fledged international organisation that is genuinely universal, supporting a proposal made by French President Jacques Chirac in a speech to the United Nations' General Assembly in New York in September 2006.

The proposed United Nations' Environment Organisation would be modelled on the World Health Organisation. It would assess environmental damage and understand how to repair that damage; be an effective instrument to promote technologies and behaviours that respect ecosystems more effectively; and be a way to support the implementation of environmental decisions all over the planet.

New Study says Traffic Pollution can inhibit Lung Development

New research published online by the medical journal 'The Lancet' shows that traffic pollution can prevent the lungs of children who live near busy roads from developing properly, making them more likely to suffer respiratory and heart problems later in life⁴.

The researchers, from the University of Southern California, studied the effects of traffic pollution on 3600 children living in southern California over an eight-year period. The children were chosen from 12 communities with a wide range of regional air qualities. Each year the researchers carried out tests to measure how much, and how quickly, the children could exhale after taking a deep breath. They also recorded the distance the youngsters lived from freeways and other busy roads. They found that children who had lived within 500 metres of a highway from the age of 10, had significantly less lung function by the time they reached 18 than those who lived at a distance of 1500 metres or more. The lead author of the study said reduced lung function in later life was known to be a risk factor for respiratory and cardiovascular disease.

⁴ Gauderman et al; Effect of exposure to traffic on lung development from 10 to 18 years of age: a cohort study; The Lancet DOI: 10.1016/S0140-6736(07)60037-3

Researchers link Traffic-related Air Pollution to Ear Infections in Infants

A recent study⁵ by European and American researchers assessed the relationship between exposure to traffic-related air pollution and otitis media (inflammation of the middle ear) in young children. In industrialised countries, otitis media is the main reason children are given antibiotics and undergo surgery. Air pollution is not typically seen as a risk factor and therefore, otitis media is not usually taken into account in air pollution health impact and cost-benefit assessments.

The researchers estimated outdoor concentrations of traffic-related air pollutants - NO₂, fine particles (PM_{2.5}), and elemental carbon - at the home addresses of 3700 infants in the Netherlands and 650 in Germany. Air pollution exposure was analysed in relation to a doctor's diagnosis of otitis media in the first two years of life. The results suggest a positive association between traffic-related air pollutants and the occurrence of otitis media.

⁵ Brauer et al., Traffic-Related Air Pollution and Otitis Media, *Environmental Health Perspectives* (2006) 114(9): 1414-1418.

Women at Greater Risk from Air Pollution

Women living in areas with higher levels of air pollution have a greater risk of developing cardiovascular disease and subsequently dying from cardiovascular causes, according to a University of Washington study appearing in the 1 February issue of *The New England Journal of Medicine*. The study involved over 65000 participants, aged 50 to 79, living in 36 cities across the United States.

The researchers studied women who did not initially have cardiovascular disease, following them for up to nine years to see who went on to have a heart attack, stroke, or coronary bypass surgery, or died from cardiovascular causes. They linked this health information with the average outdoor air pollution levels near each woman's home, and found that higher pollution levels posed a much higher hazard than previously thought for development of cardiovascular disease.

Cities in the study had average levels of fine particulate matter (PM_{2.5}) ranging from about 4 to nearly 20 µg/m³. The researchers found that each 10-unit increase in fine particulate matter level was linked to a 76% increase in the risk of death from cardiovascular disease, after taking into account known risk factors. Higher long-term average levels of fine particulate matter also led to a higher overall risk of cardiovascular disease events, including stroke and heart attack. Previous studies have found apparent links between airborne particulate matter and

cardiovascular disease, but this study was the first to look specifically at new cases of cardiovascular disease in previously healthy subjects and local air pollution levels within metropolitan areas.

FORTHCOMING CONFERENCES

International Conference on Transport and Environment: a global challenge, Technological and Policy Solutions

19-21 March 2007, Milan, Italy

Details at <http://transportenv07.jrc.it/>

The conference is jointly organised by the EU's Joint Research Centre and Regione Lombardia. It is a follow-up of the EURO-5 Conference in Milan in December 2003. Themes that will be treated relate to environmental impact of transport, such as the Euro 5 and Euro VI emissions standards for LD and HD vehicles, the new Directives on fuels and air quality standards, the biofuels promotion strategy.

Hart's World Refining & Fuels Conference

20-22 March 2007, San Antonio, USA

6th International Conference on Urban Air Quality

27-29 March 2007, Limassol, Cyprus

Details at www.urbanairquality.org

The conferences being organised by the University of Hertfordshire and the University of Cyprus jointly with ACCENT, COST 728, Cyprus International Institute for the Environment and Public Health in Association with Harvard School of Public Health.

VDA Technical Congress 2007

28-29 March 2007, Sindelfingen, Germany

The congress will deal with the topics of 'Environment and Energy' and 'Vehicle Safety & Electronics'.

FINE! Dust-free into the future: International Final Congress on the EU-LIFE Project KAPA GS

29-30 March 2007, Klagenfurt am Wörthersee, Austria

More info from <http://www.feinstaubfrei.at>

KAPA GS is a PM10 Action Programme co-financed by the EU. Initiatives to reduce particulate emissions at local level are simulated in a computer model, tested on site and adapted for permanent application. Measures evaluated in the project will be presented.

SAE 2007 World Congress

16-19 April 2007, Detroit, Michigan, USA

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

Biofuels in Central and Eastern Europe

17-18 April 2007, Prague, Czech Republic

Details at www.agra-net.com/ceebiofuels07

Speakers will include Alfonso González Finat of DG TREN who will present the latest European Commission plans to boost consumption of biofuels, to 10% by 2020. There will be views from Volvo and MOL on the use of biofuels and the technological developments to increase the efficiency of biofuels production, together with an analysis of developments in Hungary, the Czech Republic and Poland.

Additives 2007: Applications for Future Transport

17-19 April 2007, London, UK

Details at <http://www.rsc.org/ConferencesAndEvents/RSCConferences/Additives2007/index.asp>

Targets for exhaust emissions, fuel economy and vehicle recyclability have to be accompanied by increased engine durability, extended lubricant drain intervals and improvements in vehicle performance and refinement. This conference will focus on the developments of fuel and lubricant additive technology in meeting these challenges.

DustConf 2007, How to improve air quality

23-24 April 2007, Maastricht, the Netherlands

The conference will address practical approaches to tackle emissions of particulate matter from industrial, agricultural and domestic stationary sources. DustConf 2007 focuses on reduction technologies and practical reduction policies and EU-directive implementation methods for stationary sources in industry and agriculture. The conference will primarily focus on PM10/2.5 or the respiratory aerosols. It will aim at providing information about practical approaches to tackle emissions of fine particles to improve local air quality.

28. Internationales Wiener Motorensymposium

26-27 April 2007, Vienna, Austria

Biofuels in the European Union - moving forward

2-3 May, Brussels, Belgium

Details at

http://www.vito.be/vitoevenement/vdocuments/006173/brochure/N/PREMIAMay2007_v1.pdf

The main goals of the workshop will be to present analysis of measures to accelerate market introduction of biofuels, give examples of where measures have been applied successfully, and discuss cost-efficient measures to meet the targets of the Biofuels Directive. Target audiences are policy makers, experts and stakeholders involved in biofuel market implementation.

Hart's Transport, Energy & Fuels Conference: Working Together Towards Sustainability

8-10 May 2007, Brussels, Belgium

The conference will bring together key international players in the area of energy and oil, and serve as the

premier platform for direct dialogue with EU policy makers and industry representatives on the newly proposed Euro 5 & 6 emissions requirements, the fuel quality directive proposal, the all encompassing EU Energy Package and the soon to be released revised biofuels directive.

4th AVL International Commercial Powertrain Conference

9-10 May 2007, Graz, Austria

The conference will discuss the synergy effects and distinctive characteristics of the three areas of automotive, agricultural and industrial powertrains from a global viewpoint, with a focus on strategic topics at management level.

SCR-System

9-10 May 2007, Karlsruhe, Germany

Details at www.car-training-institute.com/scr-systems

Topics to be covered include current nitrogen oxide limits and regulations; dosing strategy and system approaches of current SCR concepts; possibilities of a solid urea SCR system; AdBlue[®] infrastructure; and dosing components.

EAEC 2007: 11th European Automotive Congress

30 May - 1 June 2007, Budapest, Hungary

Details at <http://www.diamond-congress.hu/eaec2007/>

Themes will include powertrain technology, vehicle and laboratory procedures, homologation, regulation and harmonisation in Europe.

Hart's World Refining & Fuels Conference

4-6 June 2007, Rio de Janeiro, Brazil

AEGPL 2007 International Liquefied Gas Congress and Exhibition

6-8 June 2007, Nice, France.

Green Week 2007

12-15 June 2007, Brussels, Belgium

The EU's Green Week will review past actions and identify success and failures, as well as looking at the challenges we will face in the future. Green Week will provide a unique opportunity for debate, exchange of experience and best practice among NGOs, businesses, government and the public.

9th VDI International Forum Trucks and Buses:

Solutions of Transport Efficiency, Reliability and Sustainable Environment

14-15 June 2007, Munich, Germany

Details at: www.vdi.de/trucks-buses

GPC 2007 World Powertrain Expo and Congress

17-19 June 2007, Berlin, Germany

Details at <http://www.gpc-icpem.org>

6th Symposium "Towards Clean Diesel Engines"

20-22 June 2007, Ischia (Naples), Italy

Details at www.combustioninstitute.it/tcde.htm

Topics will be in-cylinder processes, i.e. fuel-air mixing, combustion and emissions and nanoparticles formation; with a special interest in advanced concepts of combustion. The scientific programme will consist of oral presentations and poster contributions.

Diesel Emissions Conference 07

26-27 June 2007, Frankfurt a.M, Germany

Details at <http://www.integer-research.com/Products/Services/?ServiceID=139&ckIndustryID=3>

The key topic will be global business strategies; how will emissions standards harmonisation lead to new market opportunities for European suppliers?

4th International CTI Forum Diesel Particulate Filter

11-12 July 2007, Frankfurt, Germany

JSAE / SAE Fuels and Lubricants meeting

23-27 July 2007, Kyoto, Japan

Details at <http://www.jsae.or.jp/2007fi/>

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

Papers concerning powertrain technology, vehicle design and manufacturing, and transportation challenges in emerging markets are being solicited.

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

19th International AVL Conference "Engine & Environment"

6-7 September 2007, Graz, Austria

The conference will focus on the concept definition, development and release to production of hybrids.

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, particulates 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 programme of lectures and poster sessions includes adsorption and catalysis, analytical and environmental chemistry, material and nanomaterials chemistry, and chemical technology and 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 include advanced structural ceramics, nanostructures, ceramic composite concepts, the reliability of ceramic components, modelling ceramic processing, microstructure and properties, coatings, 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.

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 Increasing Importance of Primary NO₂ emissions.

Hart's World Refining & Fuels Conference

October 2007, Washington, USA

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

3rd EFV (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 SIA international Congress is intended to provide the opportunity for experts from the automotive industry (OEMs and their suppliers), 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 technological developments and responses to market, regulatory and operational pressures.

6 International CTI Forum Exhaust Systems

28-30 January 2008, Nürtingen, Germany

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

5th International 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.