



# Newsletter

May - June 2012

## INTERNATIONAL REGULATORY DEVELOPMENTS

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## EUROPE

### Regulation on Euro 6 Particle Number Limits for DI PI Engines published

The Regulation on Euro 6 Particle Number limits for Direct Injection (DI) Positive Ignition (PI) engines has been published in the EU's Official Journal as Commission Regulation (EU) No. 459/2012. The Regulation also covers the final OBD limits for Euro 6.

As had been expected, the Regulation sets the Euro 6 Particle Number limit for DI PI vehicles at  $6.0 \times 10^{11}$  particles/km (the same as for CI engine vehicles), but at the choice of the manufacturer, a limit of  $6.0 \times 10^{12}$  particles/km can be applied until 3 years after the start of Euro 6. The full ( $6.0 \times 10^{11}$ /km) limit number, now defined as Euro 6c, thus applies:

- for new types: from 1 September 2017 for M1 and N1 class I vehicles, or from 1 September 2018 for N1 classes II and III.

- for all registrations, sale or entry into service: from 1 September 2018 for M1 and N1 class I vehicles, or from 1 September 2019 for N1 classes II and III.

The Recitals (preamble) to the Regulation note that the PMP procedure may eventually need to be revised for PI engine vehicles because "evidence exists that the size spectra and chemical compositions of particle emissions of positive ignition can differ from those of diesel vehicles".

The Recitals also say that "Gasoline Particle Filters (GPF), an effective aftertreatment technology for abating particles emitted by positive ignition vehicles, are expected to become available for integration into some Euro 6 vehicles at a reasonable cost. In addition, it appears likely that within a time frame of three years after the mandatory Euro 6 dates set out in Article 10 of Regulation (EC) No 715/2007, a similar reduction of PN emissions can be achieved with internal engine measures at substantially lower costs for many applications. Any engine measure must be applicable to all engine working conditions to ensure that, in the absence of aftertreatment devices, emission levels in real life driving conditions are not worsened." Further paragraphs in the Recitals say that attention has to be given to the real driving particle emissions of PI vehicles and the Commission shall introduce a measurement procedure at the latest 3 years after entry into force of Euro 6.

The new Regulation also contains further details of the final OBD Thresholds Limits (OTLs) for Euro 6. These are shown in the following table. These final OTLs are subject to review by the Commission by 1 September 2014. Where they appear to be not technically feasible, the limits or application date will be amended, "considering the effects of other new requirements and tests that will be introduced for

Euro 6 vehicles". Where the review shows an environmental need as well as technical feasibility and a net monetised benefit, more stringent values would be adopted. This could include OTLs for particle numbers or additional regulated pollutants.

Final Euro 6 OTLs		Ref. mass (RM) (kg)	CO		NMHC		NOx		PM		PN	
Category	Class		PI	CI	PI	CI	PI	CI	PI	CI	PI	CI
M	-	All	1900	1750	170	290	90	140	12	12		
N1	I	RM $\leq 1305$	1900	1750	170	290	90	140	12	12		
	II	$1305 < RM \leq 1760$	3400	2200	225	320	110	180	12	12		
	III	$1760 < RM$	4300	2500	270	350	120	220	12	12		
N2	-	All	4300	2500	270	350	120	220	12	12		

Until Euro 6c, 'preliminary' Euro 6 thresholds apply:

Preliminary Euro 6 OTLs		Ref. mass (RM) (kg)	CO		NMHC		NOx		PM		PN	
Category	Class		PI	CI	PI	CI	PI	CI	PI	CI	PI	CI
M	-	All	1900	1750	170	290	150	180	25	25		
N1	I	RM $\leq 1305$	1900	1750	170	290	150	180	25	25		
	II	$1305 < RM \leq 1760$	3400	2200	225	320	190	220	25	25		
	III	$1760 < RM$	4300	2500	270	350	210	280	30	30		
N2	-	All	4300	2500	270	350	210	280	30	30		

Particulate filters, oxidation catalysts and NOx aftertreatment systems fitted to CI engines have to be monitored for total failure or removal if it results in emissions limits being exceeded. If NOx sensors are used, the manufacturer has to demonstrate that their use results in the activation of the driver warning system and the driver inducement system:

- if NOx emissions exceed the limit  $\times 1.5$  for vehicles approved to Euro 5.
  - if the applicable NOx OBD threshold limit is exceeded for vehicles approved to Euro 6.
- NOx emissions during this demonstration test must be no more than 20% higher than these values.

### CARS 21 Final Report published

The final meeting of the EU's CARS 21 process (Competitive Automotive Regulatory System for the 21<sup>st</sup> century) was held on 6 June 2012. The meeting was attended by European Commissioners and high level representatives of stakeholders including AECC.

The meeting resulted in the adoption of the final CARS 21 report which gives specific recommendations on a number of policy areas. It is available from [http://ec.europa.eu/enterprise/sectors/automotive/files/cars-21-final-report-2012\\_en.pdf](http://ec.europa.eu/enterprise/sectors/automotive/files/cars-21-final-report-2012_en.pdf).

The report's chapters cover strategic vision for the EU automotive industry, enhancing business conditions, improving competitiveness in global markets, lowering CO<sub>2</sub> emissions, deploying new mobility solutions, and reducing pollutant and noise emissions.

For the European Commission, Vice-President Antonio Tajani (Commissioner for Industry and Entrepreneurship) commented on the need for measures to enable the auto industry to show innovative and sustainable evolution. Commissioner Janez Potočnik (Environment) commented on the need for proper implementation of Euro 6 standards and rapid work on real driving emissions. Connie Hedegaard, the Commissioner for Climate Action, commented that they want to give confirmation before the summer of the 2020 plans for CO<sub>2</sub> emissions. Some Member States said that a follow-up process for CARS 21 would be welcomed.

## **Agreement reached on the Marine Fuels Sulfur Directive**

On 23 May 2012, the European Parliament and Member States reached agreement on proposals for the revision of the Directive on the sulfur content of marine fuels. The agreement follows three rounds of 'trialogue talks' with the European Commission.

Member States resisted the Commission's proposal to implement stricter sulfur limits for marine fuels than those agreed by the International Maritime Organization (IMO). The agreement requires ships in EU Sulfur Emissions Control Areas (SECAs) – the English Channel, North and Baltic Seas – to reduce the sulfur content of their fuels to 0.1% in 2015 in line with Annex VI of the IMO's Marpol Convention. Marpol also requires a cut in the 3.5% sulfur limit outside SECAs to 0.5% in either 2020 or 2025, with the exact date dependent on an assessment due in 2018. However, the triologue agreement confirms the limit will apply in EU territorial waters from 2020.

The agreement also requires the Commission to assess, in 2013, the impact of moving to a 0.1% sulfur limit for EU waters at some later date. The Commission originally wanted a 0.1% sulfur limit for passenger ships from 2020, while the Parliament's Environment Committee suggested it should apply to all ships.

The European Commission has said that switching fuels or fitting SO<sub>x</sub> traps to meet the new limits will cost the shipping industry between €2.6 billion and 11 billion, but that sum would be far outweighed by public health savings of up to about €30 billion. "Without this directive, emissions from shipping would exceed emissions from all land-based sources by 2020," Environment Commissioner Janez Potočnik said.

## **Conclusions of the TEDDIE Study on Instruments for Periodic Inspection**

The European Commission's Directorate for Mobility and Transport (DG-MOVE) has now published the final report of the TEDDIE project on a new Periodic Technical Inspection (PTI) for diesel vehicle emissions, involving NO, NO<sub>2</sub> and PM measurements.

The report concludes that instruments that are suitable for measuring NO or NO<sub>2</sub> during PTI tests are typically based on electrochemical cells or non-dispersive ultra violet (NDUV) spectroscopy. The NDUV instrument used in TEDDIE performed well in the tests but further development is needed for electrochemical cells to be suitable. For PM, the tests involved three prototype instruments using the laser light scattering principle (LLSP) and one 'escaping current' sensor. The LLSP instruments had the necessary characteristics for PTI testing and excessive PM emissions could clearly be identified.

The work on the test procedures themselves, though concluded that for cars, the simulated faults which led to increases in NO<sub>x</sub> emissions over the type approval test were not systematically detected by the PTI tests, and a suitable PTI test could not be identified. For the Heavy-duty engines only SCR faults were investigated. Whilst these faults led to increases in NO<sub>x</sub> over the type approval test, none were identified by the PTI tests, primarily because the SCR system does not work efficiently under the low load conditions associated with such tests. Therefore, the overall results did not provide sufficient evidence to support the use of NO<sub>x</sub> measurement during PTI.

The report is at [www.cita-vehicleinspection.org/LinkClick.aspx?fileticket=XsD3f1wuKxQ%3d&tabid=458](http://www.cita-vehicleinspection.org/LinkClick.aspx?fileticket=XsD3f1wuKxQ%3d&tabid=458).

## **Corrigendum to the Industrial Emissions Directive**

On 19 June 2012 a corrigendum to the Industrial Emissions Directive (2010/75/EU) was published in the Official Journal. The corrections include one to the calculation of the emissions limit values for the co-incineration of waste. See <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:158:0025:0025:EN:PDF>.

## **Euro 6 "Evaporative Emissions same Order of Magnitude as Tailpipe"**

A calculation of evaporative emissions under different scenarios has been reported for the European Commission's working group on evaporative emissions procedures.

The study calculated the effect for 4 Member States of evaporative emissions under baseline conditions and 3 scenarios involving more aggressive carbon canister purging, larger canisters and lower activated carbon

degradation. The study to date concludes that there is a significant potential for reduction of evaporative emissions and commented that for Euro 6 cars, evaporative and exhaust [NMVOC] emissions are on the same order of magnitude.

## **European Commission Brochure on IC Engine and Aftertreatment Research**

The European Commission's Directorate-General for Research and Innovation has issued a publication entitled "*More efficient – less polluting; How 20 years of EU research cleaned up the internal combustion engine, and made it drive better*" ([doi: 10.2777/18082](https://doi.org/10.2777/18082)).

The 64-page report says that 20 years of research, from the Third Framework Programme for Research (FP3) to the Seventh (FP7), have been devoted to helping the EU meet emissions targets, both for noxious substances and greenhouse gases. The brochure provides a detailed overview of the EU-funded projects that continue to contribute to this effort.

## **EEA says NOx Emissions are still a Major Problem in Europe**

Air pollution emitted from sources such as traffic, industry and households is still above internationally agreed limits in many European countries, according to data published on 28 June 2012 by the European Environment Agency (EEA). The data confirms an initial assessment published earlier this year, showing that 12 EU Member States exceeded limits under the National Emissions Ceilings (NEC) Directive in 2010.

Of the pollutants covered by the NEC Directive, NOx limits were exceeded most frequently, with 12 Member States failing to keep below agreed ceilings. Road transport contributes approximately 40% of total NOx emissions in the EU. Reductions of NOx from this sector over the last two decades have been lower than originally anticipated, according to the report. This is partly because transport has grown more than expected, and partly because real-world emissions from diesel vehicles are higher than those estimated when the vehicle emissions limits were set, EEA says.

The report and an online data viewer are at [www.eea.europa.eu/highlights/nitrogen-oxide-emissions-still-a](http://www.eea.europa.eu/highlights/nitrogen-oxide-emissions-still-a).

## **EU Greenhouse Gas Emissions increased in 2010, but Car CO<sub>2</sub> decreased in 2011**

In its annual report to the United Nations Framework Convention on Climate Change (UNFCCC), the European Environment Agency (EEA) has reported that greenhouse gas emissions for the EU increased by 2.4% in 2010. The rise follows a sharp decline between 2008 and 2009 that was largely attributed to the financial crisis and recession.

Despite the emissions rise, the EU will almost certainly meet its target to cut emissions under the 1997 Kyoto protocol. The EU is also still likely to meet its target, agreed at the Copenhagen climate summit in 2009, of cutting emissions by 20% by 2020, from 1990 levels.

**EEA Technical Report 3/2012, Annual European Union greenhouse gas inventory 1990–2010 and inventory report 2012**, European Environment Agency Technical Report No 3/2012 (30 May 2012), [www.eea.europa.eu/publications/european-union-greenhouse-gas-inventory-2012](http://www.eea.europa.eu/publications/european-union-greenhouse-gas-inventory-2012).

The preliminary figures on car CO<sub>2</sub> emissions released by EEA show that average car CO<sub>2</sub> emissions in 2011 were 135.7 g/km, which is 4.6 g/km less than in 2010 – a 3.3% reduction. The 2015 target in the Car CO<sub>2</sub> Regulation is 130 g/km.

A combination of changes in buying behaviour, improved technology and engine efficiency was mostly responsible for this reduction, according to EEA. In addition, the long-term reduction of CO<sub>2</sub> emissions has been influenced by the continuing increase in the uptake of diesel cars. 55.2% of the vehicles registered in 2011 were diesel vehicles.

**Monitoring CO<sub>2</sub> emissions from new passenger cars in the EU: summary of data for 2011**, European Environment Agency, 20 June 2012, [www.eea.europa.eu/publications/monitoring-co2-emissions-from-new](http://www.eea.europa.eu/publications/monitoring-co2-emissions-from-new).

## **European Commission Communication on Infrastructure Charging for Cars**

On 14 May 2012 the European Commission issued a Communication on the application of national road infrastructure charges levied on light private vehicles.

The document says that a modern road pricing system is expected to promote the principles of sustainable development by applying harmonised, transparent mechanisms for charging external costs like emissions, noise and congestion, and contribute to financing high quality infrastructure. The White Paper on Transport envisages the phasing in of mandatory infrastructure charges for heavy goods vehicles up to 2016, with a second phase from 2016 - 2020, in which the full internalisation of external costs for heavy goods vehicles would be mandatory, with the possibility to extend it to all vehicles.

## **European Commission launches Air Quality Application for Apple iPhone®**

The European Commission has officially presented the "obsAIRve" iPhone application. This is a free application providing the user with real-time information on air quality. The app was created to raise awareness for air pollution and health and is part of the European GMES (Global Monitoring for Environment and Security) Programme.



## **EU agrees Swiss Rebate for Euro VI**

On 19 June 2012, the EU published in the Official Journal the agreement between the EU and Switzerland on the Swiss rebate of 10% of the heavy vehicle fee for those meeting Euro VI.

The rebate will be granted only to vehicles with an entry in their registration certificate or with an equivalent certificate from the national authorities confirming it corresponds to the Euro VI emissions class. The Swiss authorities reserve the right to verify compliance. Switzerland reserves the right to review the situation from 2014 onwards and then to reduce or end the rebate, as appropriate.

## **TNO says the First Euro VI Trucks are 'Very Clean'**

In their report on a study commissioned by the Dutch Ministry of Infrastructure and the Environment, TNO says that the emissions of the first Euro VI trucks are very clean. TNO used PEMS (Portable Emissions Measurement Systems) for their test programme.

TNO says that the emissions performance of the current generation of Euro V and EEV trucks varies considerably. NOx emissions of the last generation of Euro V engines were better than the first generation at low speeds but the Euro V and EEV labels are still no guarantee that a truck is actually clean. The tests also revealed major differences in the on-road emissions performance of Euro V and EEV trucks.

But in real-life conditions the two new long-distance Euro VI trucks tested proved to be just as clean as the latest generation (Euro 6) diesel cars. However, the emissions performance of Euro VI distribution trucks from other manufacturers is not yet known, nor has the sustainability of these low emissions levels been studied. The results do show, though, that very clean production trucks are technically feasible.

The report from TNO is now publicly available at [www.tno.nl/downloads/real\\_world\\_nox\\_emissions\\_euro\\_v\\_v\\_i\\_heavy\\_duty\\_vehicles1.pdf](http://www.tno.nl/downloads/real_world_nox_emissions_euro_v_v_i_heavy_duty_vehicles1.pdf).

## **Netherlands announces Subsidies for Euro VI Trucks and Buses**

The Netherlands has announced that this year and next year, trucks and buses whose emissions meet Euro VI will be subsidised by up to €4500 each.

The subsidy for Euro VI truck engines was announced last year, but introduction was postponed because the first Euro VI trucks were designed for long-haul work, meaning that the air quality benefits would have mainly been outside cities. It is now expected that the availability of Euro VI engines in lighter distribution trucks and buses will increase soon, so the subsidy has been put in place, backdated to March 2012.

## **New German Directive on DPF Retrofits**

Germany has notified the European Commission of a new Directive to promote the retrofitting of particulate reduction systems in passenger vehicles and light commercial vehicles with compression-ignition engines, revising the Directive of 15 December 2011.

Funding is available in 2012-2013 for retrofitting passenger vehicles with CI engines initially registered before 31 December 2006 and Light Commercial Vehicles (LCV) with CI engines initially registered by or on 16 December 2009. Grants would be awarded subject to the availability of the estimated budgetary resources. The funding available is a fixed grant of €330 for retrofitting carried out in 2012 and €260 for retrofitting carried out in 2013.

Passenger vehicles must meet either the particulate reduction levels PM 01 or PM 0 to PM 4 or one of the particulate reduction classes PMK 01 or PMK 0 to PMK 4 in accordance with the Road Traffic Licensing Regulation (Straßenverkehrs-Zulassungs-Ordnung – StVZO). LCVs must meet particulate reduction classes PMK 01 or PMK 0 to PMK 4.

## **Austrian Restrictions on Operation of Older Non-Road Mobile Machinery**

On 27 April 2012, the Austrian Minister for Agriculture and Forestry, Environment and Water Management notified the European Commission of an Order restricting operation of Non-Road Mobile Machinery in areas where air quality standards are not met.

The Order, taking effect on 1 October 2012, is to keep Austria within the obligatory emissions limit as set out in the EU Air Quality Directive. It establishes that in areas where steps are being taken to bring the PM<sub>10</sub> level in line with EU legislation ("redevelopment" areas), mobile technical installations, machinery and equipment which were either not regulated or subject to previous EU type approval regulations, can no longer be used after a pre-established date.

Mobile technical installations, machinery and equipment which are fitted with a functional particle filter system are exempted. The precise technical regulations are met by a range of particle filter systems, but only if the manufacturer is located in France, Italy, Denmark, UK, Sweden, or Finland (based on the VERT Filter List from July 2010).

Austria has also notified the Commission of a new Regulation of the State Governor of Styria to reduce air pollution from the operation of leaf blowers and leaf vacuums. The regulation bans the operation of these devices in these redevelopment areas.

## French and Czech Vehicle Classifications for Low Emission Zones

The **French** decree establishing the nomenclature on which cities are to decide which vehicles will be forbidden in Low Emission Zones (Zone d'Action Prioritaire pour l'Air, Zapa) has been released in the French Official Journal of 8 May 2012. Cities and towns testing Zapas will be free to decide which groups will or will not be permitted into their Zapa.

The government proposes classifying all light- and heavy-duty vehicles (including 2- and 3-wheelers) into five groups based on their first date of registration (which determines the Euro standard that they meet); the most polluting vehicles are classified in group 1, the least polluting in group 5.

For passenger cars and light commercial vehicles (categories M1 and N1), all vehicles registered before 1 January 1997, regardless of engine type, are to be classified in group 1. This group also includes all 2-wheelers, tricycles and quadricycles registered before 1 June 2000 and trucks and buses registered before 1 October 2001. At the other end of the scale, group 5 includes all electric vehicles regardless of their first date of registration, cars and light commercial vehicles registered from 1 January 2011, trucks and buses registered from 1 October 2009 and motorcycles, trikes and quads registered from 1 July 2015.

Vehicles retrofitted with a DPF will go into one group better than they otherwise would. The text on this has still to be published but it is understood that the intent is for it to apply only to heavy-duty vehicles. The current text uses the generic description of 'vehicles'.

Meanwhile the **Czech Republic** has also notified the European Commission of a new government order laying down the rules for Low Emission Zones (LEZ).

As with the French proposals, municipalities will have to specify in a by-law which categories may enter the Low Emission Zone, but emissions stickers will be universally valid within the entire Czech Republic.

	Emission limit values	First registration of M1 or N1 vehicles	First registration of M2, M3, N2 or N3 vehicles
<b>Diesel vehicles</b>			
<b>Category 1</b>	Euro 1 or earlier	before 1 January 1997	before 1 October 1996
<b>Category 2</b>	Euro 2 or Euro 1 with DPF	1 January 1997 to 31 December 2000	1 October 1996 to 30 September 2001
<b>Category 3</b>	Euro 3 or Euro 2 with DPF	1 January 2001 to 31 December 2005	1 October 2001 to 30 September 2006
<b>Category 4</b>	Euro 4 or Euro 3 with DPF.	from 1 January 2006	from 1 October 2006
<b>Vehicles with SI engines</b>			
<b>Category 1</b>	Vehicles not meeting any Euro limits.	before 1 January 1993	before 1 January 1993
<b>Category 4</b>	Euro 1 and better	from 1 January 1993	

All category M and N vehicles with electric or hybrid propulsion, fuelled by LPG or CNG or biogas, or

intended for fuelling with E85 are classed as emissions category 4.

Category L vehicles (motorcycles, etc.) with first registration prior to 1 January 1993 are classified into emission category 1, and those with first registration starting 1 January 1993 are emission category 4.

The draft text is available at

[http://ec.europa.eu/enterprise/tris/pisa/app/search/index.cfm?fuseaction=pisa\\_notif\\_overview&iYear=2012&inum=334&lang=EN&sNLang=EN](http://ec.europa.eu/enterprise/tris/pisa/app/search/index.cfm?fuseaction=pisa_notif_overview&iYear=2012&inum=334&lang=EN&sNLang=EN).

## Czech Regulation on Stationary Sources

The Czech Republic has also notified the European Commission of a draft implementing regulation under the new Air Protection Act that affects stationary sources of emissions, their fuels, and solvent use.

The regulation is largely a transposition of European Directives on industrial emissions, the sulfur content of liquid fuels, VOC emissions due to solvent use, and petrol vapour recovery. In part, though, it also establishes emissions limits and other conditions of operation for stationary sources that are not covered by European legislation and that are therefore set at the national level. These include stationary combustion sources of up to 50 MW and sources such as metals and plastics manufacturing, the chemical industry, and raw minerals processing.

Details of the draft regulation are at

[http://ec.europa.eu/enterprise/tris/pisa/app/search/index.cfm?fuseaction=pisa\\_notif\\_overview&iYear=2012&inum=323&lang=EN&sNLang=EN](http://ec.europa.eu/enterprise/tris/pisa/app/search/index.cfm?fuseaction=pisa_notif_overview&iYear=2012&inum=323&lang=EN&sNLang=EN).

## European Commission rejects Half of UK Application for NO<sub>2</sub> Derogations

The European Commission has rejected 12 out of 24 of the UK government's requests for five-year extensions to dates for compliance with the 2010 EU air quality standards for NO<sub>2</sub>.

Seven zones were rejected because Low Emission Zones (LEZs) intended to reduce NO<sub>2</sub> levels were described as 'optional' in plans submitted to the Commission. The large compliance gap (up to 22 µg/m<sup>3</sup> from the 24-hour NO<sub>2</sub> limit) for these seven zones was the other reason for the rejections. Plans for a further four zones were rejected because of technical discrepancies between projected annual NO<sub>2</sub> limits and measured values.

No objection was raised to the postponement of the compliance deadline until 1 January 2013 for 1 zone and until 1 January 2015 in 9 others. In 3 other cases the postponement (to 2013 in 1 case, 2015 for the others) depends on air quality plans being adjusted.

The Commission decision is on the DG-ENV website:

[http://ec.europa.eu/environment/air/quality/legislation/pdf/uk\\_2\\_no2\\_en.pdf](http://ec.europa.eu/environment/air/quality/legislation/pdf/uk_2_no2_en.pdf).

## **Italy to implement Low CO<sub>2</sub> Incentives**

The Transport Committee of the Italian Chamber of Deputies has adopted a new plan providing, for 3 years, the implementation of incentives of up to €5 000 for the purchase of a low CO<sub>2</sub> vehicle.

The amount of the bonus would decline each year. Thus, in 2013, the bonus will be €5 000 euros for the purchase of a vehicle emitting less than 50 g CO<sub>2</sub>/km and €1 200 for vehicles emitting between 50 and 95 g CO<sub>2</sub>/km. In 2014, the amounts will be lowered to respectively €4 000 and €1 000, and in 2015, to €3 000 and €800.

## **Swiss Public Consultation on Roadworthiness Test for OBD Vehicles**

The Swiss Federal Roads Office (ASTRA) has launched a public consultation on proposals to waive the 2-yearly emissions tests for OBD-equipped vehicles. This is stated to be because of the low level of defects and the fact that modern vehicles are fitted with OBD systems which will indicate emissions-related faults. The proposed new regulation provides that the test will remain compulsory for OBD-equipped vehicles if an error is reported by the OBD system.

The draft also proposes that there would be no obligatory anti-pollution test for motorcycles and scooters. Investigations by the Dynamic Test Center (DTC) indicated that there was no available method to reliably measure the emissions of motorbikes and scooters with a reasonable cost-utility ratio.

## **3D Measurement of NO<sub>2</sub> during the London Olympic Games**

Researchers at the University of Leicester (UK) are to use a new measurement technology to evaluate the effect of extra traffic on NO<sub>2</sub> during the London Olympic and Paralympic Games later this year.

The team of researchers will use three of their CityScan remote sensing instruments to measure atmospheric pollution in the urban boundary layer. The instrument consists of a Hemispherical Scanning Imaging Differential Optical Absorption Spectrometer (HSI-DOAS) that can scan entire hemispheres of the surrounding skyline once every 6 minutes. The data produced as a result of this process is a 360x95 degree panorama of NO<sub>2</sub> concentrations providing information on the magnitude and the spatial and temporal variability of urban atmospheric pollution. Combining measurements from CityScan instruments in different locations enables the production of a 3-D reconstruction of the atmospheric pollution above a city by using a process of computed tomography.

## **NORTH AMERICA**

### **US EPA proposes Revised SCR Maintenance Rule**

EPA, the US Environmental Protection Agency, has formally determined that it is reasonable to add replenishment of Diesel Exhaust Fluid (DEF, known as AdBlue® in Europe) to the list of scheduled emissions-related maintenance.

EPA is proposing to set a fluid refill interval that is equal to the scheduled oil change interval for Light-duty vehicles and Light-duty trucks that use SCR. EPA is also proposing to set a fluid refill interval that is at least as far (in miles or hours) as the vehicle's fuel capacity for centrally-fuelled Heavy-duty vocational vehicles such as dump trucks, concrete mixers, and refuse trucks. For all other vehicles that use SCR, the fluid refill interval must provide a range of vehicle operation that is no less than twice the range of vehicle's fuel capacity. Finally, for SCR-equipped non-road diesel engines, EPA is proposing a fluid refill interval that is at least as far (in miles or hours) as the vehicle's fuel capacity.

The proposals are contained (together with those on emergency vehicles – see item below) at [www.epa.gov/otaq/highway-diesel/regs/420f12025.pdf](http://www.epa.gov/otaq/highway-diesel/regs/420f12025.pdf).

### **US EPA proposes Emissions Control Reliefs for Emergency Vehicles**

The US Environmental Protection Agency (EPA) has issued amendments to the 2007/2010 emissions rule for Heavy-duty diesel engines to ensure that dedicated emergency vehicles such as fire trucks and ambulances do not suffer power reductions due to maintenance failures of emissions systems. EPA says that when required routine maintenance of some aftertreatment technologies does not occur as designed, many engines are set to reduce power to prevent damage or excess emissions.

The proposed revisions allow EPA to approve manufacturers' requests for modifications to emissions control systems on new and in-use emergency vehicles so they can be operated without reduced performance during emergency situations. For new certifications, these settings would be approved as Auxiliary Emission Control Devices (AECD). For in-use vehicles, manufacturers would be allowed to submit requests for EPA approval of Emergency Vehicle Field Modifications.

The proposal also provides a short-term relief from emissions standards for certain non-road engines when they are needed to respond to an emergency. For details see [www.gpo.gov/fdsys/pkg/FR-2012-06-08/pdf/2012-13088.pdf](http://www.gpo.gov/fdsys/pkg/FR-2012-06-08/pdf/2012-13088.pdf).



## **US EPA proposes Amendments to Standards for Stationary Engines**

The US Environmental Protection Agency (EPA) has proposed amendments to relax some emissions requirements affecting stationary diesel and natural gas engines. The amendments affect both the New Source Performance Standards (NSPS) and the National Emission Standards for Hazardous Air Pollutants (NESHAP).

One of the main changes would apply to emergency generators. EPA has proposed to allow emergency engines to operate for 100 hours per year without meeting emissions limits, providing this is for maintenance and testing or for certain demand response purposes (for example, when there is a 5% or more change in voltage).

Another proposed change is the replacement of the emissions limits for existing 'area source' 4-stroke spark ignited engines >500 hp located in populated areas. Instead there would be a requirement to install catalytic controls, temperature monitoring and annual performance checks.

EPA also proposes to amend the NESHAP regulation to allow Tier 1- and Tier 2-certified engines that are scheduled to be replaced due to state or local rules to meet the same 'management practices' requirements as engines >500 hp that are not in populated areas. Such engines would be allowed to meet this approach until 1 January 2015, or 12 years after installation due date, but not later than 1 June 2018.

The proposed rules are at [http://epa.gov/ttn/oarpg/t3/fr\\_notices/rice\\_neshap\\_recon\\_prop\\_052212.pdf](http://epa.gov/ttn/oarpg/t3/fr_notices/rice_neshap_recon_prop_052212.pdf).

## **Port of Los Angeles introduces Clean Ship Incentives**

The Port of Los Angeles has announced that it has adopted plans to launch the Environmental Ship Index (ESI) on 1 July 2012 with incentives ranging from \$250 to \$5250 per visit to the port.

The ESI is a web-based tool developed by the World Ports Climate Initiative. It is already underway at 14 European ports. It rewards vessel operators for engine, fuel and technology enhancements that reduce emissions beyond the standards set by the International Maritime Organization (IMO). Operators whose vessels call at the Port can earn an incentive by meeting one or a combination of requirements.

## **California's South Coast adopts Changes for Stationary Emergency Engines**

On 4 May 2012, California's South Coast Air Quality Management District adopted a staff proposal to require Level 3 Diesel Particulate Filters (DPFs) on some new emergency standby engines. The adopted

amendments to Rule 1470 require that all new emergency engines of over 175 hp within 50 m of a 'sensitive receptor' such as hospitals and residences, either install a 'Tier 4 final' engine equipped with an original equipment DPF, or retrofit a Level 3 particulate filter on the engine to meet the Tier 4 final PM limits.

## **British Columbia adopts Greenhouse Gas Reduction Regulation**

On 16 May 2012, the Canadian province of British Columbia adopted a greenhouse gas reduction regulation intended to diversify and increase the market for natural gas in the province's transportation sector. The regulation permits a utility company to spend up to \$62 million (€48 million) on vehicle and ferry incentives, up to \$12 million (€9.3 million) on compressed natural gas fuelling stations, and up to \$30.5 million (€23.4 Million) on liquefied natural gas stations. The Province is also offering incentives to provide up to \$2 500 (approx. €1920) off the 'sticker price' for qualifying compressed natural gas vehicles.

## **US EPA proposes Revised Particulate PM<sub>2.5</sub> Air Quality Standard**

On 14 June 2012, the US Environmental Protection Agency (EPA) proposed tightening the annual National Ambient Air Quality Standard (NAAQS) for fine particle pollution (PM<sub>2.5</sub>) limits to between 12 and 13 µg/m<sup>3</sup> from the current 15 µg/m<sup>3</sup>. EPA is also taking comments on a possible limit of 11 µg/m<sup>3</sup>. The 24-hour standard would remain at 35 µg/m<sup>3</sup>. EPA is also proposing to set a separate fine particle standard to improve visibility, primarily in urban areas, with two different options being considered. EPA said the cost of compliance would be more than offset by healthcare savings.

EPA expects to finalise the proposal by 14 December 2012 after a public comment period.

## **Court upholds US-EPA Rules on Greenhouse Gas Emissions**

A US federal appeals court ruling has upheld the Environmental Protection Agency's rules to control Greenhouse Gas (GHG) emissions from vehicles and to include requirements on GHGs in operating permits from the largest stationary sources.

The opinion from the US Court of Appeals for the District of Columbia says EPA's finding that GHGs endanger public health and welfare, and a rule stemming from that finding and intended to limit passenger car GHGs, "are neither arbitrary nor capricious" as industry, some US States and other critics had claimed.



## **US EPA adopts NOx Emissions Standards for Aircraft Gas Turbine Engines**

The US Environmental Protection Agency (EPA) has adopted International Civil Aviation Organization (ICAO) emissions standards and related provisions for aircraft gas turbine engines with rated thrusts greater than 26.7 kN. These engines are mainly used on commercial passenger and freight aircraft.

Engine models that were originally certified before 1 January 2013 may continue production without meeting the new Tier 6 (CAEP/6) standards until 31 December 2012. After that date, they must comply with the new Tier 6 standards. Engine models certified between 1 January and 31 December 2013 must comply with the Tier 6 standards. Engine models originally certified on or after 1 January 2014 must comply with the new Tier 8 (CAEP/8) standards. EPA anticipates establishing a future production cut-off that would eventually require all engine models to comply with the Tier 8 standards.

EPA is clarifying at what point a design variation would result in an existing engine type having to conform to the most current emissions standards, and is amending the emission measurement procedures to reflect current certification practices.

Details of the final rule are on the EPA website at [www.epa.gov/otaq/aviation.htm](http://www.epa.gov/otaq/aviation.htm).

## **ASIA PACIFIC**

### **Beijing, China, introduces 10 ppm S Fuels**

The Beijing Environmental Protection Bureau announced new fuel standards starting from 31 May 2012. The new standards reduce the sulfur content of gasoline or diesel from 50 to 10 mg/kg, in line with Euro 5/V standards. They also reduce the limit for manganese in fuel from 0.006 to 0.002 g/litre.

### **Hong Kong, China, confirms Start of Euro V Emissions Requirements**

The Hong Kong SAR Government has confirmed that the Euro V vehicle emissions standards for newly registered vehicles came into effect on 1 June 2012.

All newly registered vehicles, except diesel light goods vehicles of design weight not more than 3.5 tonnes, will have to comply with the new emissions standards starting from 1 June, while the remaining vehicle class will be required to meet the new emissions standard starting from 31 December 2012. The Government implemented Euro V motor fuel standards on 1 July 2010 and adopted a phased introduction of Euro V emissions standards to take into account the supply of compliant vehicles on the local market.

## **NOx Emissions increasing in China**

At a news conference on 5 June 2012, an official from the Chinese Ministry of Environmental Protection said that curtailing emissions of air pollutants such as SO<sub>2</sub> and NO<sub>x</sub> will be a major task for the rest of this year.

While a 2011 national target for nitrogen oxide emissions called for a 1.5% reduction from the previous year, the levels actually rose by 5.73%. The official said the ministry is aiming for "zero growth" in NO<sub>x</sub> emissions in 2012. He said the growth rate had dropped significantly since last year but predicted tremendous pressure to meet the 2015 targets. Under its 12<sup>th</sup> Five-Year Plan China is aiming to reduce levels of NO<sub>x</sub> by 10% by 2015 compared to 2010.

The ministry will also continue to expand its air quality monitoring network to help meet national PM<sub>2.5</sub> standards to be in place in 2016. Measuring of PM<sub>2.5</sub> has begun in 33 cities under a pilot programme.

### **Reports on Air Quality in Shanghai and Shenzhen, China**

The **Shanghai** Environmental Protection Bureau announced on 4 June 2012 that air quality met the national requirement of excellent and good (the highest two of five tiers) on 337 days in 2011.

Among three monitored items, NO<sub>2</sub> was the top pollutant on just eight days last year. The daily density of PM<sub>10</sub> in 2011 met the national standard for residential, industrial and rural areas, but was still the top pollutant on 356 days, according to the bureau's Shanghai Environmental Bulletin 2011. Although the PM<sub>10</sub> reading last year was higher than in 2010, the overall density of PM<sub>10</sub> has dropped between 2007 and 2011, the bureau said. Shanghai is now preparing for an official release of PM<sub>2.5</sub> readings this year.

Meanwhile, a new report on 2011 environmental quality in **Shenzhen** in China's Guangdong Province says that NO<sub>2</sub> has become the city's primary air pollutant because of increasing vehicle exhaust emissions. Nevertheless, air quality in Shenzhen reached the national 'excellent' or 'good' levels on 362 days last year, six days more than 2010.

NO<sub>2</sub> comprised 44.3% of the city's air pollutants, with PM<sub>10</sub> accounting for 42.1% and SO<sub>2</sub> for 13.5%. The vice-director of the Shenzhen Municipal Environment Commission's vehicle emission supervision and management office said more exhaust emissions from vehicles contributed to the higher NO<sub>2</sub> levels. Last year, the city's vehicle ownership increased by 15%, adding 260 000 cars to local roads. More than two million vehicles are registered in Shenzhen. The vice-director of the Commission's pollution prevention office said NO<sub>2</sub> emissions would be curbed as high-emission vehicles are phased out by 2015.

## Taiwan adopts Standards to Limit Levels of Airborne Fine Particulate Matter

Taiwan has adopted standards for airborne fine particulate matter less than 2.5 µm in diameter (PM<sub>2.5</sub>). The Taiwan Environmental Protection Administration (TEPA) said on 14 May 2012 that based on scientific evidence of harm to human health caused by fine particles, it has revised national ambient air quality standards to list PM<sub>2.5</sub> as an air pollutant.

TEPA said the PM<sub>2.5</sub> standards are 15 µg/m<sup>3</sup> as a yearly average and 35 µg/m<sup>3</sup> as a daily average. It has set 2020 as a target year for meeting the yearly average standard. The agency has monitored levels of PM<sub>2.5</sub> at 57 automatic air monitoring stations nationwide since 2005. Agency statistics show that in 2010, the average level of PM<sub>2.5</sub> was 31.4 µg/m<sup>3</sup>.

TEPA plans to replace the current Pollution Standards Index with an Air Quality Index that incorporates the new PM<sub>2.5</sub> standards.

## AFRICA

### South Africa to introduce Euro 5 Fuels by mid-2017

The South African Minister of Energy has gazetted new petroleum regulations requiring oil companies to introduce 'Euro 5' fuels by 1 July 2017. South Africa currently uses fuel to 'Euro 2' fuel standards.

The South African Petroleum Industry Association (SAPIA) welcomed the new regulations, saying they will reduce harmful exhaust emissions, contribute to improved urban air quality and reduce greenhouse gases. The National Association of Automobile Manufacturers of South Africa (NAAMSA), also welcomed the announcement, saying the reduction in harmful vehicle emissions will be significant. They added that the automotive Industry will continue to press oil companies to introduce cleaner fuels earlier than the July 2012 deadline.

### South Africa adopts PM<sub>2.5</sub> Air Quality Standard

South Africa's Water and Environmental Affairs Minister Edna Molewa has established a national ambient air quality standard for PM<sub>2.5</sub>. The new standard was published under the National Environmental: Air Quality Act, 2004 in Gazette No. 35463 on 29 June 2012.

The Minister says that in drafting the national ambient air quality standards, the department has considered WHO guidelines and other related studies and has also taken into account South African conditions such as estimated natural background levels, prevailing

ambient air concentrations as well as current trends in air quality management planning across the country.

The standards are shown below.

Averaging period	Concentration	Frequency of exceedence	Compliance date
24 hours	65 µg/m <sup>3</sup>	4	Immediate – 31 December 2015
24 hours	40 µg/m <sup>3</sup>	4	1 January 2016 – 31 December 2029
24 hours	25 µg/m <sup>3</sup>	4	1 January 2030
1 year	25 µg/m <sup>3</sup>	0	Immediate – 31 December 2015
1 year	20 µg/m <sup>3</sup>	0	1 January 2016 – 31 December 2029
1 year	15 µg/m <sup>3</sup>	0	1 January 2030

The reference method for determination of PM<sub>2.5</sub> fraction of suspended particulate matter shall be EN 14907

**National Environmental: Air Quality Act, 2004 (Act No. 39 of 2004), the National Ambient Air Quality Standard for particulate matter with aerodynamic diameter less than 2.5 micron meters,** [http://www.environment.gov.za/sites/default/files/gazetted\\_notices/nemaqa\\_ambientair\\_quality\\_q35463gen486.pdf](http://www.environment.gov.za/sites/default/files/gazetted_notices/nemaqa_ambientair_quality_q35463gen486.pdf).

## UNITED NATIONS

### Outcome of IARC Review of Exhaust Carcinogenicity

On 12 June 2012 the International Agency for Research on Cancer (IARC) concluded their review of the evidence on the carcinogenicity of gasoline and diesel exhaust. IARC is part of the World Health Organisation (WHO) within the UN system.

IARC voted to keep the rating of petrol engine exhaust as Group 2B (possibly carcinogenic to humans) but to raise diesel engine exhaust from Group 2A (probably carcinogenic to humans) to Group 1: Carcinogenic to humans. "There is sufficient evidence in humans for the carcinogenicity of diesel exhaust. Diesel exhaust causes cancer of the lung. A positive association has been observed between exposure to diesel exhaust and cancer of the urinary bladder". The review group did not differentiate between 'new technology diesel exhaust' (i.e. with aftertreatment) and conventional diesel exhaust in this rating.

A summary of the evaluation appeared in *The Lancet Oncology* as an online publication on 15 June 2012. The article notes that the progressively tighter emissions standards for on-road vehicles introduced in North America, Europe and elsewhere, have triggered advances in diesel technology that resulted in lower emissions of PM, NO<sub>x</sub> and HC. It also notes that emissions standards in non-road applications are lagging and therefore are still largely uncontrolled today. Moreover, it says, in many less developed countries standards are not in place for both on-road and non-road use of diesel and gasoline engines.

**Carcinogenicity of diesel-engine and gasoline-engine exhausts and some nitroarenes;** *The Lancet Oncology*; on-line 15 June 2012, [doi:10.1016/S1470-2045\(12\)70280-2](https://doi.org/10.1016/S1470-2045(12)70280-2) or <http://download.thelancet.com/flatcontentassets/pdfs/S1470204512702802.pdf>.

## WHO Report on the Health Effects of Black Carbon

A new report from the World Health Organization (WHO) presents the results of a systematic review of evidence on the health effects of Black Carbon (BC) in ambient air. Epidemiological studies provide sufficient evidence of the association of cardiopulmonary morbidity and mortality with exposure to Black Carbon. Toxicological studies suggest that Black Carbon may operate as a universal carrier of a wide variety of chemicals of varying toxicity to the human body. WHO says that although BC may not be a major, directly toxic component of fine particulate, reducing people's exposure to particulate matter containing BC should reduce its effects on their health, as well as helping to mitigate climate change.

**Health Effects of Black Carbon**, Nicole AH Janssen, Miriam E Gerlofs-Nijland, Timo Lanki, Raimo O Salonen, Flemming Cassee, Gerard Hoek, Paul Fischer, Bert Brunekreef and Michal Krzyzanowski; *World Health Organization Regional Office for Europe* (2012), ISBN 978 92 890 0265 3, [www.unece.org/fileadmin/DAM/env/documents/2012/air/Health\\_Effects\\_of\\_Black\\_Carbon\\_report.pdf](http://www.unece.org/fileadmin/DAM/env/documents/2012/air/Health_Effects_of_Black_Carbon_report.pdf).

## EU reaches Agreement on Updating the Gothenburg Protocol

On 4 May 2012 the EU reached an international agreement to update the Gothenburg Protocol, setting more ambitious targets to reduce trans-boundary air pollution. The revised objectives of the Protocol will see a reduction in EU emissions of around 60% for sulfur, 40% for NO<sub>x</sub>, 30% for Volatile Organic Compounds (VOCs), 6% for ammonia and 20% for particulate matter compared to 2005 levels. There is also agreement to act on 'Black Carbon' because it is a short-lived climate forcer and pollutant.

The Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone sets emission ceilings for sulfur, NO<sub>x</sub>, VOCs and ammonia. The Protocol also sets tight limit values for specific emissions sources (e.g. combustion plants, electricity production, dry cleaning, cars and lorries) and requires best available techniques to be used to keep emissions down. The agreement involves the EU, Norway, Switzerland and the United States of America. The recent negotiations have also involved other countries covered by the United Nations Economic Commission for Europe (UNECE) region, notably the Russian Federation, Canada, the Ukraine and Georgia, in view of potential ratifications by such countries in the coming years. Amendments to the protocol would enter into force when two-thirds of the parties to the protocol - 17 out of 26 countries - ratify them, a process that could take a couple of years.

The targets agreed for the revision of the protocol are slightly more ambitious than those put forward by the

European Commission and Danish presidency in March 2012. The new EU goals will form the basis of revisions to the National Emission Ceilings (NEC) Directive, to be proposed in 2013.

## GENERAL

### ICCT Report on the Cost of Light-duty Emissions Reduction Technologies

On 11 June 2012, ICCT (The International Council on Clean Transportation) issued a new report on the estimated cost of emissions reduction technologies for light-duty vehicles.

ICCT says that countries with the largest vehicle markets worldwide differ greatly in the rates at which they are willing to adopt the most stringent emissions standards - and some of those whose populations would benefit most lag furthest behind the best achievable standards. Among the reasons often given for delaying stricter standards is the extra cost added to the vehicle by the emissions control system.

The report assesses the costs of emissions control technologies required to bring light-duty vehicles up to various standards for conventional pollutant emissions, using both direct and indirect methods to account for technology changes, correct for inflation, and pull in feedback from manufacturers.

ICCT finds that cost concerns are usually overstated, in great part because estimates used in setting early US and EU standards have never been updated to reflect actual experience and to incorporate the substantial improvements in emissions control technologies and reductions in cost that have occurred.

Diesel and gasoline vehicles are assessed separately, and the cost of complying with emissions standards differs significantly between them. For example, the cost of taking a 4-cylinder 1.5-litre gasoline engine from no emissions controls to the most stringent proposed EU standard (Euro 6) is stated to be around US\$360 (€286), whereas the cost of taking a 4-cylinder 1.5-litre diesel engine from no emission controls to Euro 6 is around \$1400 (€1113).

**Estimated cost of emission reduction technologies for LDVs**, Francisco Posada Sanchez, Anup Bandivadekar, and John German; *The International Council on Clean Transportation* (11 June 2012), [www.theicct.org/estimated-cost-emission-reduction-technologies-ldvs](http://www.theicct.org/estimated-cost-emission-reduction-technologies-ldvs).

### ICCT Workshop on Light-duty Greenhouse Gas Emissions

On 27 April 2012 the International Council on Clean Transportation (ICCT) hosted an international workshop in Brussels on the topic of the 'Greenhouse Gas Reduction Potential and Costs of Light-duty Vehicle Technologies'.



ICCT has worked with Ricardo and FEV to produce cost curves showing the CO<sub>2</sub> reduction potential for different classes of vehicle. The Ricardo part of the project has produced a software tool for public use as well as the report on the outcome of their simulations. Details are available at [www.theicct.org](http://www.theicct.org).

The analysis showed that CO<sub>2</sub> reductions of 20-40% were possible for petrol engines using technologies such as stop-start, GDI, downsizing, and vehicle mass reduction. For diesels the figure was lower, but still about 20%. Overall, the cost curves for diesel vehicles tend to be higher than for petrol ones. The payback period for a 30% reduction in CO<sub>2</sub> was said to be about 3 years.

## **G8 joins Coalition on Short-Lived Climate Forcers**

Leaders of the G8 group of most advanced economies threw their weight behind efforts to control emissions of methane, Black Carbon and hydrofluorocarbons (HFCs) during their recent annual meeting in the US. Germany, France, Italy, Russia and the UK agreed to join the Climate and Clean Air Coalition set up in February 2012 by the US and six other countries to address short-lived climate pollutants. Current targets include emissions from diesel engines, inefficient brick kilns and methane from landfills.

The G8 leaders committed to taking comprehensive action to reduce short-lived climate pollutants as a complement to reducing CO<sub>2</sub>, describing the new effort as a means to promote "increased ambition" to protect the climate. In a statement issued on 19 May 2012, the leaders participating in the coalition said that targeting those short-term pollutants "can help reduce global warming, improve health, and increase agricultural productivity, as well as energy security."

## **Global CO<sub>2</sub> Emissions increased in 2011**

Global CO<sub>2</sub> emissions from fossil fuels rose 3.2% last year to 31.6 gigatonnes, according to figures from the International Energy Agency (IEA). This was less than the record rise in 2010, but the agency warned again that emissions must peak by 2017.

A 0.6% reduction in emissions from rich nations last year, partly linked to the economic situation, was more than offset by a 6.1% increase in countries outside the OECD, the IEA said. China, the US and EU remained the biggest three emitters, but India replaced Russia in the fourth spot with an 8.7% rise in emissions in 2011. At 9.3% China saw the biggest increase, mostly due to greater coal consumption.

## **Report on the Global Emissions Control Catalyst Market**

Global Industry Analysts Inc. (GIA) has announced a report on the global emissions control catalyst market.

The research report entitled "*Emission Control Catalysts: A Global Strategic Business Report*" is stated to provide a comprehensive review of the industry, current market trends, competitive scenarios, product overviews, recent product introductions, and profiles of major/niche market participants. It provides annual sales estimates and projections for the years 2009 to 2017 for the US, Canada, Japan, Europe, Asia-Pacific, Middle East, and Latin America. Key product segments analysed include both motor vehicle and industrial emissions control catalysts.

The report says that Euro standards for emissions control represent the most popular set of standards and are followed by several countries in various parts of the world. The majority of the emerging economies are adopting the latest set of Euro emissions and fuel standards, while some smaller nations still comply with older set of regulations. New stringent emissions standards are being implemented in Asia-Pacific, the Middle East and Latin America.

The Industrial Emission Control Catalysts category is stated to represent the fastest growing product market, spurred by increasing demand from industrial and power generation plants. Companies are increasingly expanding their focus on the reduction of NOx emissions from power generation plants.

Details are at [www.strategyr.com/Emission\\_Control\\_Catalysts\\_Market\\_Report.asp#RCC](http://www.strategyr.com/Emission_Control_Catalysts_Market_Report.asp#RCC).

## **Lloyds Register unveils Exhaust Gas Treatment Guide for Ships**

Lloyd's Register has published a new guide '*Understanding Exhaust Gas Treatment Systems*' aimed at providing ship owners and operators with an overview of the related technology and emerging regulations that they need to make sound business decisions. The guide was developed with the support of Shipping Emissions Abatement and Trading (SEaT), an organisation comprising owner-operators looking for cost-effective compliance solutions.

"The implications of emissions compliance will vary from owner to owner; for example, the needs of a Baltic ferry operator are likely to be very different to those of a bulk carrier owner whose ships trade globally," said Katharine Palmer, Lloyd's Register's Environmental Manager.

The guide is available from [www.lr.org/Images/Understanding%20exhaust%20gas%20treatment%20systems%20June%202012\\_tcm155-240772.pdf](http://www.lr.org/Images/Understanding%20exhaust%20gas%20treatment%20systems%20June%202012_tcm155-240772.pdf).

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## FORTHCOMING CONFERENCES

### European Commission Information Days on Transport Research

18 & 19 July 2012, Brussels, Belgium

Details at

<http://ec.europa.eu/research/transport/events/infodays/>

*The aim of the two-day event is to inform potential participants about FP7 and the new Transport Calls for Proposals under the 'Co-operation' Programme.*

### 9<sup>th</sup> International Congress on Catalysis and Automotive Pollution Control (CAPOC9)

29-31 August 2012, Brussels, Belgium

Details at <http://capoc.ulb.ac.be>

*All topics related to applications and requirements of catalysis in automotive (including light- and heavy-duty vehicles) emission control will be considered.*

### 1<sup>st</sup> Biannual Conference on Powertrain Modelling & Control

4-6 September 2012, Bradford, UK

Details at [www.edt.brad.ac.uk/Welcome/News-Events/PMC-2012-Conference](http://www.edt.brad.ac.uk/Welcome/News-Events/PMC-2012-Conference)

*Topics within the scope of the conference include conventional, hybrid and electric powertrains, combustion engine modelling, drive cycles, mapping and calibration, hardware-in-loop testing, emissions legislation, and powertrain/engine testing.*

### KONES2012 - 38<sup>th</sup> International Scientific Congress on Powertrain and Transport Means

9-12 September 2012, Castle Ryn, Poland

Details at [www.kones2012.eu](http://www.kones2012.eu)

*The Congress topics include the latest achievements in research, development and design of compression-ignition and spark-ignition as well as other combustion engines (hybrids), including, combustion processes, mixture preparation, exhaust aftertreatment and particulate filters.*

### 5<sup>th</sup> Environmentally Friendly Vehicle Conference

10-12 September 2012, Baltimore, Maryland, USA

Details at [www.efv2012.com](http://www.efv2012.com)

*This conference will bring together industry leaders and representatives from around the world to share the latest innovations and experience on how to shape the market for clean and fuel efficient vehicles.*

### SAE 2012 Heavy Duty Diesel Emissions Control Symposium

11-12 September 2012, Gothenburg, Sweden

Details at [www.sae.org/events/hddec](http://www.sae.org/events/hddec)

*This event provides upcoming regulatory actions, state-of-the-art technical information and first hand experiences relating to heavy-duty diesel emission control strategies, engines and aftertreatment.*

### Future Internal Combustion Engines and Their Fuels

12 September 2012, Oxford, UK

Organised by the Combustion Institute

### Diesel Emissions Conference India 2012

12-14 September 2012, New Delhi, India

Details at

[www.integer-research.com/conferences/dec-india/2012](http://www.integer-research.com/conferences/dec-india/2012)

### 24<sup>th</sup> AVL Conference: Engine & Environment

13-14 September 2012, Graz, Austria

Details at [www.avl.com/engine\\_environment](http://www.avl.com/engine_environment)

The topic for the 2012 conference is "95-70-50 g CO<sub>2</sub>/km – Evolution or Revolution?"

## **SAE 2012 Emission Control from Large Ships Symposium**

13-14 September 2012, Gothenburg, Sweden

Details at [www.sae.org/events/ecls](http://www.sae.org/events/ecls)

Organized by SAE International and the International Association for Catalytic Control of Ship Emissions to Air (IACCSEA), this symposium will prove essential in updating attendees on the pending marine emissions regulations and in profiling the technologies now available to address them.

## **SAE Combustion and Emissions for Engineers**

17-19 September 2012, Malmo, Sweden

Details at [www.sae.org/pdevent/97011](http://www.sae.org/pdevent/97011)

This seminar will bring issues related to combustion and emissions "down to earth," relying less on mathematical terms and more on physical explanations and analogies.

## **SAE 2012 Powertrains, Fuels and Lubricants Meeting**

18-20 September 2012, Malmo, Sweden

Details at [www.sae.org/events/pfl](http://www.sae.org/events/pfl)

Topics will include combustion optimisation, hybrid powertrains, aftertreatment, engine control, fuels and fuel efficiency, and regulated and non-regulated emissions reduction, measurement and modelling.

## **4<sup>th</sup> International Conference Selective Catalytic Reduction 2012**

24-26 September 2012, Stuttgart, Germany

Details at [www.scr-systems.de/Event.aspx?id=759542](http://www.scr-systems.de/Event.aspx?id=759542)

The conference will focus on the most efficient ways to face the upcoming emissions regulation and develop strategies for meeting those challenges, material and component improvements of SCR systems, identify strategies of combining SCR systems with DPF, raise fuel efficiency through advancements in SCR Technology and identify alternatives of SCR systems.

## **Green Port Congress 2012**

3-5 October 2012, Marseille, France

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

Papers are invited on SO<sub>x</sub> and NO<sub>x</sub> emissions and their control, Nitrogen Emission Control Areas and Green Terminals and Logistics.

## **Advanced Diesel Particulate Filtration Systems (SAE seminar)**

8-9 October 2012, Birmingham, UK

Details at [www.associationhq.com/be-bruga/associationhq/sae/2012/C0502.html](http://www.associationhq.com/be-bruga/associationhq/sae/2012/C0502.html)

The seminar will discuss particulate transport modes and particulate filtration regimes in the DPF, DPF structure, porosity, geometry, composition, backpressure and performance, as well as applications and optimisation and failure modes.

## **21<sup>st</sup> Aachen Colloquium Automobile and Engine Technology**

8-10 October 2012, Aachen, Germany

Details at [www.aachen-colloquium.com](http://www.aachen-colloquium.com)

Trends and developments will be discussed, including electric and hybrid drives, range extenders, powertrains, commercial vehicles, industrial engines, emissions concepts, and aftertreatment.

## **SAE 2012 Small Engine Technology Conference & Exhibition**

16-18 October 2012, Madison, Wisconsin, USA

Details at [www.sae.org/events/setc](http://www.sae.org/events/setc)

## **2012 Directions in Engine-Efficiency and Emissions Research (DEER) Conference**

16-19 October 2012, Dearborn, Michigan, USA

Details at [www.orau.gov/deer2012](http://www.orau.gov/deer2012)

DEER fosters the exchange of information and best practices through presentations and posters from new and on-going engine R&D.

## **SAE Diesel Engine Technology Engineering Academy**

22-26 October 2012, Turin, Italy

Details at [www.associationhq.com/be-bruga/associationhq/sae/2012/ACAD03.html](http://www.associationhq.com/be-bruga/associationhq/sae/2012/ACAD03.html)

This event will cover basic diesel engine terminology and principles, compare various diesel fuel injection systems and their components, list the various emissions standards and testing requirements and give details of the elements of post-combustion emission control devices.

## **Diesel Emissions Conference USA 2012**

30 October–1 November 2012, Cincinnati, USA

Details at

[www.integer-research.com/conferences/dec-usa/2012](http://www.integer-research.com/conferences/dec-usa/2012)

## **Heavy-Duty-, On- und Off-Highway-Motoren (7. Internationale MTZ-Fachtagung)**

6-7 November 2012, Nürnberg, Germany

Details at

[www.atzlive.de/pdf/cfp\\_haevyduty\\_2012\\_13.pdf](http://www.atzlive.de/pdf/cfp_haevyduty_2012_13.pdf)

## **2012 Eucar conference**

6-7 November 2012, Brussels, Belgium

## **2<sup>nd</sup> Aachen Colloquium China, "Automobile and Engine technology"**

6-7 November 2012, Beijing, China

Details at [www.aachen-colloquium-china.com](http://www.aachen-colloquium-china.com)

## **Sensors 2012: Nanosensor Technologies for Monitoring – materials and methods**

7 November 2012, London, UK

Details at [www.aamg-rsc.org](http://www.aamg-rsc.org)

Deadline for abstracts: 30 July 2012.

*The conference will address the health effects of nanoparticles; the preparation of nanoparticle sensor technologies and systems, and examine the design and application of early research and commercial sensors for (bio)medical, industrial and environmental processes.*

## **SAE 2012 On-Board Diagnostics Symposium - Europe: Update on Light and Heavy Duty Vehicles**

13-15 November, 2012, Stuttgart, Germany

Details at

[www.sae.org/events/training/symposia/obdeurope](http://www.sae.org/events/training/symposia/obdeurope)

*This meeting provides an opportunity to meet with other engineers and those responsible for legislation so that clarifications can be obtained, status determined and the overall attitudes to the engineering process can be appreciated.*

## **European Electric Vehicle Congress 2012**

19-22 November 2012, Brussels, Belgium

Details at [www.eevc.eu](http://www.eevc.eu)

## **34<sup>th</sup> FISITA World Automotive Congress**

27-30 November 2012, Beijing, China

Details at [www.fisita2012.com](http://www.fisita2012.com)

*The congress will focus on solutions for sustainable mobility in all areas of passenger car, truck and bus transportation. Emphasis will be placed on the development of future powertrain systems, advanced internal combustion engines, energy efficient transmissions & drivelines as well as vehicle design, electronics, safety solutions, NVH and manufacturing.*

## **4<sup>th</sup> CLEPA Aftermarket Conference**

29 November 2012, Brussels, Belgium

## **Monitoring Ambient Air 2012: Opening opportunities through new technologies and data analysis**

12-13 December 2012, London, UK

Details at [www.aamg-rsc.org](http://www.aamg-rsc.org)

Deadline for abstracts: 15 August 2012.

*The conference will provide a broad and up-to-date survey of measurement, regulatory and scientific issues and will provide an update on the European-funded AirMonTech project which aims to harmonize air pollution monitoring techniques.*

## **Symposium on International Automotive Technology (SIAT 2013)**

9-11 January 2013, Pune, India

Details at <http://siat.araiindia.com>

## **BAUMA 2013 (International Construction Equipment Exhibition)**

15-21 April 2013, Munich, Germany

Details at [www.bauma.de/en](http://www.bauma.de/en)

## **SAE 2013 World Congress**

16-18 April 2013, Detroit, Michigan, USA

Details at [www.sae.org/congress/techprogram/cfp.pdf](http://www.sae.org/congress/techprogram/cfp.pdf)

Deadline for abstracts: 1 September 2012

## **International Commercial Powertrain Conference**

22-23 May 2013, Graz, Austria

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

*The conference covers commercial vehicles, agricultural tractors and non-road vehicles, and industrial machinery.*

## **Busworld 2013**

18-23 October 2013, Kortrijk, Belgium

Details will be at [www.busworld.org](http://www.busworld.org)