



# Newsletter

September - October 2013

## INTERNATIONAL REGULATORY DEVELOPMENTS

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## EUROPE

### European Commission Action on Inland Waterways Transport Emissions

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The European Commission has decided to update and renew its NAIADES inland waterway programme until 2020, and to align it with the Transport White Paper. The Commission therefore adopted the NAIADES II package "Towards quality inland waterway transport" on 10 September 2013. The adopted package includes a staff working document "Greening the fleet: reducing pollutant emissions in inland waterway transport", a Proposal for a Directive laying down technical requirements for inland waterway vessels, and a proposal for a Regulation on Community-fleet capacity to promote inland waterway transport (IWT).

The documents say that the problem of SO<sub>2</sub> emissions from barges has largely been solved with the introduction of low sulfur fuel in 2011, but particulate matter and NO<sub>x</sub> levels remain to be tackled. So under the NAIADES II plan, the Commission will propose emissions limits for new engines next year and will consider further limits for existing engines in 2015 and 2016. It will also amend UNECE-established rules to allow for use of Liquefied Natural Gas (LNG) as a fuel by 2016 at the latest.

The Communication notes that the approach to be adopted on emissions limits should be strictly technology neutral from the perspective of engine technology and fuel choice. When defining new emissions limits for IWT engines, it may be necessary to differentiate between small and large vessels and between existing and new engines because of specific technological and economic limitations. Also, sufficient time must be allowed for the sector to adapt to more ambitious emissions limits.

The package documents are at [http://ec.europa.eu/transport/modes/inland/promotion/naiades2\\_en.htm](http://ec.europa.eu/transport/modes/inland/promotion/naiades2_en.htm).

### Parliament votes on Recreational Craft Directive

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On 9 October 2013 the European Parliament agreed to the European Commission proposal to impose tougher exhaust emissions limits on watercraft, to reduce NO<sub>x</sub> and HC emissions by 20%.

The new rules give the industry as a whole three years from the date they enter into force to comply with these limits. However, small and medium-sized enterprises making engines with a power rating equal to or less than 15 kW will have a six-year transition period in which to comply.

The new Directive was approved by 626 votes to 17 with 11 abstentions. It still has to be formally approved

by EU Member States before publication in the EU's Official Journal.

### Vans CO<sub>2</sub> for 2020 agreed, but further Delay for Cars CO<sub>2</sub>

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On 14 October 2013, the Lithuanian presidency of the EU delayed a vote in the Environment Council on car CO<sub>2</sub> emissions limits after it became clear that a qualified majority of Member States would vote against a deal reached with MEPs in June 2013. Germany, backed by several Member States, asked for the vote to be delayed until further concessions could be extracted from the European Parliament.

The Council statement says that "The Council agreed to support the presidency in seeking, together with the Commission, further contacts with the European Parliament in order to explore the possibility of finding some limited flexibility, while maintaining the overall balance of the compromise agreed in June and reach a solution satisfactory to all."

Germany had earlier circulated a new proposal to phase in the standards over four years. This would apply the standard to 80% of national fleets in 2020, with a 5% increase in each of the following years, reaching 100% in 2024. Seven EU Member States are reported to have supported Germany's position to further delay agreement. EU Climate Commissioner Connie Hedegaard told reporters that flexibility was limited and the German proposal to delay full implementation of the 95 g/km target for four years to 2024 was not acceptable.

Nevertheless, it appears that the Member States have accepted the compromise text for the 2020 target for CO<sub>2</sub> from vans that had been agreed in the trilogue meetings with the Parliament and the Commission.

### Regulations on Ecodesign and Energy Labelling of Space and Water Heaters

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In the EU's Official Journal of 6 September 2013, four Regulations affecting the emissions and energy performance of boilers and heaters were published.

Regulation (EU) 813/2013 defines the ecodesign requirements for space heaters and combination heaters (including packages) with a rated heat output ≤ 400 kW. Regulation (EU) 814/2013 provides similar requirements for water heaters ≤ 400 kW. For units using fossil fuels, emissions of NO<sub>x</sub>, CO, particulate matter and hydrocarbons are identified as significant environmental aspects for the purposes of the Regulations, but it is not considered appropriate to set ecodesign requirements for emissions of CO, PM or HC "as no suitable European measurement methods are as yet available". The NO<sub>x</sub> requirements, which apply from 26 September 2018, range from 56 mg/kWh to 420 mg/kWh fuel input in terms of gross calorific

value, depending on the type of heater or boiler. The requirement for systems equipped with an internal combustion engine using gaseous fuels is 240 mg/kWh and that for systems equipped with an IC engine using liquid fuels is 420 mg/kWh.

Regulations (EU) 811/2013 and (EU) 812/2013 set out the energy labelling requirements for these types of equipment with a rated heat output  $\leq 70$  kW.

None of the Regulations apply to heaters designed to use solid fuels or biomass-based gaseous or liquid fuels.

## **New Paper on Emissions over NEDC, CADC and WMTC Tests**

In a new paper from the European Commission's Joint Research Centre (DG-JRC), the emissions of thirteen Euro 5 passenger cars (7 gasoline, 6 Diesel) were measured over the NEDC, WMTC and CADC. Over the more dynamic WMTC and CADC cycles the emissions were consistently higher but in most cases remained below the type-approval limit. However, the measured emissions of NO<sub>x</sub> exceeded the type-approval limits (up to 5 times in extreme cases) and presented significantly increased average values (0.35 g/km for urban driving; 0.56 g/km for motorway driving).

**Development and review of Euro 5 passenger car emission factors based on experimental results over various driving cycles**, Georgios Fontaras, Vicente Franco, Panagiota Dilara, Giorgio Martini, Urbano Manfredi; *Science of The Total Environment* 468–469 (15 January 2014) pp. 1034-1042, doi: [10.1016/j.scitotenv.2013.09.043](https://doi.org/10.1016/j.scitotenv.2013.09.043).

## **Environment Commissioner's Speech on Air Quality and Emissions**

Environment Commissioner Janez Potočnik, launching the new EEA report on Air Quality (see below) said that the Commission's air policy review showed that policy should focus on achieving compliance with existing air quality standards, and on using a revised NEC Directive to bring down pollution emissions in the period to 2030. Those emissions reductions would in turn drive down overall air pollution concentrations across Europe, bringing major health and ecosystem benefits.

Mr. Potočnik, said that the emissions reductions package he intends to present will thus comprise:

- a revised National Emission Ceilings Directive to implement reductions up to 2030 together with reinforcement of existing legislation such as the Industrial Emissions Directive, Eco-design and Non-Road Mobile Machinery;
- ratification of the Gothenburg Protocol; and
- action on air pollution from medium scale combustion installations.

"If adopted, the number of premature deaths could be reduced by about an additional third over the baseline,

and the areas affected by eutrophication by another 50%. The estimated benefits for the economy, citizens and the environment would amount to nearly €45 billion per year with cost representing only a tenth of it based on the most conservative estimation of the value of human life."

The Commissioner also said that the EU can gain a competitive advantage and exploit opportunities by focusing research and development on resource-efficient and less polluting technologies that other countries will eventually need to adopt.

He concluded his speech with a quote from Professor Guy McPherson: "If you think the economy is more important than the environment, try holding your breath while counting your money."

## **New European Environment Agency Guidebook for Air Pollutant Emissions**

A new 2013 version of the EMEP/EEA air pollutant emission inventory guidebook has been published by the European Environment Agency (EEA) and the European Monitoring Evaluation Programme (EMEP) of the UNECE CLRTAP Task Force.

The guidebook is a key information source frequently used by researchers and modellers. With more than 2100 pages of guidance, the 2013 volume includes many new elements, including methods for estimating black carbon, improved consistency across different pollutants, and increased information on pollutant sources such as stoves, solvent use and agriculture.

The new guidebook is available from [www.eea.europa.eu/publications/emep-eea-guidebook-2013](http://www.eea.europa.eu/publications/emep-eea-guidebook-2013).

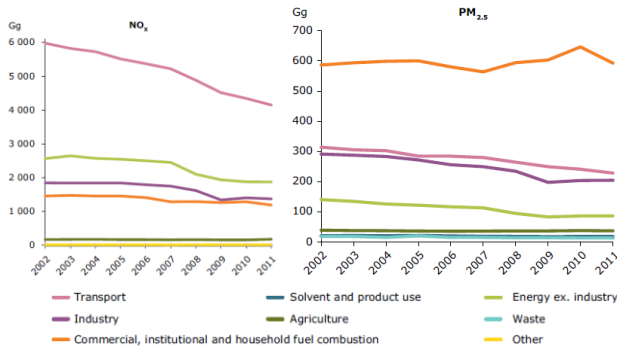
## **European Environment Agency Report on European Air Quality**

A new report from the European Environment Agency (EEA) says that around 90% of city dwellers in the EU are exposed to one of the most damaging air pollutants at levels deemed harmful to health by the World Health Organisation (WHO).

The EEA's assessment says that between 2009 and 2011, up to 96% of city dwellers were exposed to PM<sub>2.5</sub> concentrations above WHO guidelines and up to 98% were exposed to ozone levels above WHO guidelines. Lower proportions of EU citizens were exposed to levels of these pollutants exceeding EU limits or targets, which in certain cases are less strict than WHO guidelines. Some rural areas also have significant levels of air pollution, the report notes. National differences across Europe are presented in a series of accompanying country fact-sheets.

The report also says that 'Euro' emissions standards have resulted in substantial reported declines in NO<sub>x</sub>

and PM emissions from vehicles over the last decade despite the large increase in the number of vehicles and total traffic activity over the same period.



The decrease in transport emissions in the period 2002–2011 was 31% for NO<sub>x</sub>, 24 % for PM<sub>10</sub> and 27% for PM<sub>2.5</sub> in the EU. Nevertheless, in 2011 total NO<sub>x</sub> emissions remained 5% above the NEC Directive ceiling to be attained by 2010, mainly due to road transport emissions. Transport is the sector that emits the most NO<sub>x</sub>, accounting for 47% of the total in 2011, followed by the energy sector, which contributed 21%.

The report also notes that under real-world driving conditions, emissions from vehicles often exceed the test cycle limits specified in the Euro emission standards. This is particularly the case for NO<sub>x</sub> emissions from light-duty diesel vehicles. “New policy measures to deal with transport emissions are still being formulated. These include the recent Cars 2020 Communication setting out a timetable for the successful implementation of the Euro 6 vehicle standards in real-world driving conditions, and the assessment of the Non-Road Mobile Machinery legislation, carried out in 2013.”

**Air quality in Europe – 2013 report**, EEA Report No. 9/2013 (15 October 2013), [www.eea.europa.eu/publications/air-quality-in-europe-2013](http://www.eea.europa.eu/publications/air-quality-in-europe-2013) or doi: 10.2800/92843.

## DUH Presentation on GDI Particle Emissions in Real Driving

On 29 October 2013, Deutsche Umwelthilfe (DUH) released details of a study on particle emissions of two gasoline direct-injection (GDI) cars in real driving conditions. DUH says that as a result it calls for the rapid and comprehensive introduction of appropriate emissions control technology, as is the case for diesel engines.

The results come from tests conducted for DUH by the University of Bern (AFHB). DUH says it is clear that under real driving conditions the emissions of nanoparticles and other pollutants increase massively, compared to results on the dynamometer, and so GDI engines are more dangerous than previously thought for the environment and health. Significantly higher

emissions are also seen in the laboratory with more realistic conditions.

AFHB tested the two vehicles (one a Euro 5 car, the other Euro 6b) over different test cycles and in on-road use for five repeat trips per vehicle over a 39 km route comprised of 28% city driving, 33% rural and 39% highway (max. speed 120 km/h). Both cars were then tested on the New European Driving Cycle (NEDC) and a highway cycle that simulates more realistic driving conditions compared to the NEDC. On the latter cycle one of the vehicles was tested once without and once with a “built-in” particle filter.

On the NEDC, the Euro 6b car met the full 2017 Euro 6c particle number limit for GDIs ( $6 \times 10^{11}/\text{km}$ ) whereas the Euro 5 car met only the weaker 2014 Euro 6b limit ( $6 \times 10^{12}/\text{km}$ ). On the road, however, a completely different picture arose. The emissions of the Euro 6b car rose sharply and were higher than the other vehicle, DUH says. For the tests on the vehicle with a GPF, the particulate emissions decreased almost completely.

In a press release, DUH said that their tests show that unfiltered gasoline direct injection engines on the road are many times dirtier than filtered diesel engines. Jürgen Resch, the national director of DUH said that there is a reliable solution available - the particulate filter. Expert Axel Friedrich (formerly of UBA) said “the use of a particulate filter reduces emissions by over 99 percent... These tests also show that consumption and CO<sub>2</sub> emissions by the filter do not increase... The fact is that filters in series production cost less than €50 per piece.”

The DUH statement and results are available at [www.duh.de/pressemitteilung.html?&no\\_cache=1&tx\\_ttnews%5btnews%5d=3200&cHash=58b125fbc6c5b932d5bbe17221354dd2](http://www.duh.de/pressemitteilung.html?&no_cache=1&tx_ttnews%5btnews%5d=3200&cHash=58b125fbc6c5b932d5bbe17221354dd2).

## Consultation on London NRMM Emissions Rules

On 2 September 2013, the Mayor of London launched a public consultation on rules for ‘The Control of Dust and Emissions during Construction and Demolition’. It includes early notification of new 2015 and 2020 standards for Non-Road Mobile Machinery (NRMM).

The draft Supplementary Planning Guidance recommends action to reduce emissions from NRMM since those used on construction sites were responsible for 12% of NO<sub>x</sub> emissions and 15% of PM<sub>10</sub> emissions in Greater London in 2010. From 1 September 2015, NRMM with engines between 37 and 560 kW used on the site of any major development within Greater London will be required to meet Stage IIIA of the EU Directive on NRMM emissions as a minimum and Stage IIIB within the Central Activity Zone or Canary Wharf. From 1 September 2020, the minimum standards will become Stage IIIB and Stage



IV respectively. Standards for smaller engines, between 19 and 37 kW, will be kept under review.

The public consultation on this draft Supplementary Planning Guidance is open until 25 November 2013 at [www.london.gov.uk/priorities/planning/consultations/draft-the-control-of-dust-and-emissions-during-construction-and](http://www.london.gov.uk/priorities/planning/consultations/draft-the-control-of-dust-and-emissions-during-construction-and).

## Strategy for Ultra Low Emission Vehicles in the UK

On 4 September 2013, the UK Transport Minister Mr Norman Baker announced a new strategy for rolling out £500 million (€590 million) of funding between 2015 and 2020 to support uptake of ultra-low emission vehicles (ULEVs) in the UK.

Called “Driving the Future Today”, the roadmap sets out five pillars to use the funding to help support ULEV take-up. These cover supporting the early market uptake for ULEVs including through grants for plug-in electric vehicles or other incentives and by encouraging higher uptake in the public sector. Infrastructure will also be covered through investment for the installation of charging points in homes, railway stations and public sector car parks and rapid charging points for longer journeys, as well as a new network of hydrogen refuelling stations to support introduction of fuel cell electric vehicles in the UK. The strategy also says that tax incentives for the purchase of ULEVs should be maintained until at least 2020.

The strategy document is at [www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/236803/ultra-low-emission-vehicle-strategy.pdf](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/236803/ultra-low-emission-vehicle-strategy.pdf).

## Transport Scotland proposes banning Diesel Vehicles from Towns by 2050

Transport Scotland, the national transport agency for the Scottish government, has presented an ambitious roadmap for electric vehicles. The goals in the ‘Switched On Scotland’ Roadmap include no diesel-fuelled vehicles in Scottish cities by 2050, almost all new car sales to be near-zero emission by 2040 and the public car fleet to be replaced with electric cars.

According to the Roadmap, by 2030 half of all fossil-fuelled vehicles will be phased-out of urban environments across Scotland and by 2040 almost all new vehicles sold will be near-zero emission. The Scottish Government is prepared to spend over £14 million (€16.5 million) over the coming two years to support this low-carbon vehicle agenda. The Roadmap foresees installing charging points at all main government buildings and at least every 80 km on main roads. Other support measures include grants for 25% of the costs of an Electric Vehicle, up to a maximum of £5000 (€5917) and grants of 20% of the costs of an electric van, up to a maximum of £8000 (€9467).

**Switched On Scotland: A Roadmap to Widespread Adoption of Plug-in Vehicles;** Transport Scotland, 12 September 2013, [www.transportscotland.gov.uk/files/Switched%20On%20Scotland%20.pdf](http://www.transportscotland.gov.uk/files/Switched%20On%20Scotland%20.pdf).

## UK Air Quality and Pollutant Inventory Reports

The UK’s annual air quality compliance report for 2012 shows that the country exceeded the limit value for hourly mean NO<sub>2</sub> in two zones (out of the total of 43) but 34 zones exceeded the limit value for annual mean NO<sub>2</sub>. Of the nine compliant zones, five were within the limit value, and a further four were covered by a time extension and were within the limit value plus the applicable margin of tolerance.

After subtraction of the contribution from natural sources all zones met the limit value for daily mean concentration of PM<sub>10</sub>. All zones met the limit value for annual mean concentration of PM<sub>10</sub>, the target value for PM<sub>2.5</sub> and the Stage 1 limit value, which comes into force in 2015. After subtraction of the natural contribution, one zone did not meet the Stage 2 limit value which must be met by 2020.

**Air Pollution in the UK 2012,** UK Dept. for Environment, Food & Rural Affairs, September 2013, <http://uk-air.defra.gov.uk/library/annualreport/index>.

The UK has also published its report on air quality pollutant inventories from 1990 to 2011. This shows that emissions of NO<sub>x</sub> have declined by 66% since 1990, with 36% of NO<sub>x</sub> stemming from road transport combustion sources and 23% from power generation. PM<sub>10</sub> emissions have declined by 59% since 1990. 23% of emissions come from road transport. Power generation accounted for 28% in 1990 but has been significantly reduced to 6% of England’s total in 2011.

CO emissions have declined by 77% since 1990. England’s emissions account for 76% of the UK total. In 2010, 38% of emissions stem from road transport combustion sources. Emissions of non-methane volatile organic compounds are estimated at 529 kt in 2011, representing a 73% reduction in emissions since 1990. This reduction has been dominated by the 95% decrease since 1990 in road transport sources, including evaporative losses.

**Air Quality Pollutant Inventories for England, Scotland, Wales and Northern Ireland: 1990 – 2011;** Aether/Ricardo-AEA, September 2013, [http://uk-air.defra.gov.uk/reports/cat07/1309111039\\_DA\\_AQPI\\_1990-2011\\_MainBody\\_Issue1.0.pdf](http://uk-air.defra.gov.uk/reports/cat07/1309111039_DA_AQPI_1990-2011_MainBody_Issue1.0.pdf).

## French MPs file Complaint about Diesel Emissions in the Alps

On 23 September 2013, four French Green Party Members of Parliament filed a complaint against ‘person unknown’ for endangering the lives of others in the Alps.

The complaint cites the June 2012 report of the World Health Organization (WHO) classifying diesel exhaust gas as a human carcinogen. The complaint is about "endangering the lives of others by abstention, following the movement of goods on the road in the Maurienne and Arve Valleys, especially in the context of cross-border road transport through Mont Blanc and Frejus tunnels." "This is to alert public opinion and put pressure on politics", said Green MP Noel Mamere.

## **Review of Air Quality in France**

A new review of air quality in France in 2012 says that the year reflects an improving trend.

No regulatory exceedances were found for the annual concentrations of NO<sub>2</sub>, fine particles, CO or SO<sub>2</sub>. The number of days on which the information threshold for ozone was exceeded and the number of agglomerations of more than 100 000 inhabitants for which the regulatory value for PM<sub>10</sub> was exceeded for more than 35 days also decreased.

For average particulate matter and ozone, although the evolution was favourable between 2011 and 2012, the report finds no downward trend since the early 2000s. Ozone remains higher than in the early 1990s. For NO<sub>2</sub>, there has been a slight continuing decrease over 10 years.

However, the report says that these aggregate figures hide temporal and spatial disparities for most regulated pollutants. The highest annual mean values for PM<sub>10</sub> and NO<sub>2</sub> are those observed in traffic stations, while for ozone, it is urban background and rural stations. For NO<sub>2</sub> more than 10% of the measuring stations exceeded the limits, and in more than a dozen agglomerations of over 100 000 inhabitants at least one site reached or exceeded the 35 days maximum for exceeding the daily PM<sub>10</sub> limit value.

**Bilan de la qualité de l'air en France en 2012 et principales tendances observées au cours de la période 2000-2012**, Ministère de l'Écologie, du Développement durable et de l'Énergie, [www.developpement-durable.gouv.fr/IMG/pdf/Bilan\\_de\\_la\\_qualite\\_de\\_l\\_air\\_2012\\_v\\_final\\_e\\_corrigee\\_.pdf](http://www.developpement-durable.gouv.fr/IMG/pdf/Bilan_de_la_qualite_de_l_air_2012_v_final_e_corrigee_.pdf).

## **Recommendations for the 3<sup>rd</sup> French Cancer Plan**

On 30 August 2013, a report including recommendations for the 3<sup>rd</sup> national plan against cancer was submitted to the French ministries of Health and of Research.

The plan will be implemented from 2014 to 2018 and will be finalized at the beginning of 2014. The new report prepared by Jean-Paul Vernant, a haematology professor at University Pierre et Marie Curie in Paris, recommends lowering the pollution sources exposure thresholds by limiting urban and industrial air pollution sources. Diesel exhaust emissions are included, based

on the June 2012 IARC (International Agency on Research on Cancer) classification of diesel exhaust as carcinogenic to humans.

## **Report on Air Quality in Ireland 2012**

The Irish Environmental Protection Agency has issued a report on air quality in Ireland for 2012, based on data obtained from the 29 monitoring stations that form the National Ambient Air Quality Monitoring Network. The network provides measurements of NO<sub>x</sub>, SO<sub>2</sub>, CO, ozone, PM<sub>10</sub>, PM<sub>2.5</sub>, black smoke, benzene and volatile organic compounds, heavy metals, and PAHs.

Overall, relative to other EU Member States, Ireland continues to enjoy good air quality, with no exceedances for the pollutants measured in 2012. The report notes, though, that the World Health Organisation (WHO) has developed guideline standards for air quality which are tighter than current EU air quality standards. Should these be adopted by the EU as new standards, they will pose a challenge for Ireland to meet in the future. Also under EU legislation, Ireland is required to reduce exposure to fine particulate matter (PM<sub>2.5</sub>) by 10% between 2012 and 2020. This will require an integrated approach across a number of sectors including industrial, transport and residential emissions, the report says.

The report states that levels of NO<sub>x</sub> at traffic-impacted city centre areas will continue to be a challenge and traffic emissions must be reduced through implementing policies to reduce travel demand, increased use of alternatives to the private car such as cycling, walking and public transport and improving the efficiencies of motorised transport.

**Air Quality in Ireland 2012: Key Indicators of Ambient Air Quality**, Environmental Protection Agency of Ireland, Sept. 2013, <http://epa.ie/pubs/reports/air/quality/Air%20Quality%20Report%202012.pdf>.

## **Swiss Guidance on measuring Emissions from Stationary Sources**

The Swiss Environment Ministry (BAFU/FOEN) has issued a new document on the subject of measuring emissions from stationary sources. The implementation guide shows how to measure emissions in terms of the Swiss clean air regulation as well as how pollutant emissions are to be assessed. It also includes the relevant aspects of planning for the assessment of the measurement and reporting. The recommendations are directed primarily to law enforcement agencies, private and governmental agencies, as well as interested measurement professionals.

The guidelines are at [www.bafu.admin.ch/uv-1320-d](http://www.bafu.admin.ch/uv-1320-d), currently in German, French, and Italian.

## Russia's Bashneft Group starts Delivery of Euro 5 Petrol

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Russia's Bashneft Group started producing what the company describes as a new generation, more environmentally-friendly fuel that is to be sold under the ATUM brand name. The company says that ATUM's detergency properties meet the requirements of the motor manufacturers' Worldwide Fuel Charter and match European premium fuels.

The sales of the first product, AI-92 ATUM petrol meeting the Euro 5 standard, were to start on 1 October 2013 at Bashneft's filling stations in the Republic of Bashkortostan. Sales of the fuel in Udmurtia were expected to begin on 15 October 2013, and starting from 2014, it will also be sold in the Orenburg Region and the Sverdlovsk Region. In the next two years, Bashneft also plans to start selling ATUM AI-95 petrol and ATUM diesel fuel.

## Low-Sulfur Fuels in Serbia

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The Partnership for Clean Fuels and Vehicles (PCFV) of the United Nations Environment Programme has now confirmed that Serbia has successfully transitioned to low-sulfur 10 ppm fuels as of July 2013.

Serbia's considerable refinery investments over the past few years have now paid dividends in cleaner fuels which will be used nationally and also exported regionally, contributing to improved air quality for millions of people. Serbia is among the latest countries in Europe to adopt cleaner auto fuel standards.

Serbia is now fully in line with EU requirements for lead, aromatics, benzene (for petrol) and sulfur (for both petrol and diesel).

## NORTH AMERICA

### EPA delays Finalisation of Tier III Rule

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The US Environmental Protection Agency (EPA) is reported to have delayed by two months its year-end goal for finalising the Tier III vehicle emissions and fuel quality rule. Nevertheless, the agency says this will not preclude it from implementing the rule as planned in 2017.

EPA, confirming the delay, said the postponement is due to "the extensive input received and the need for thorough analysis of available data," citing the more than 200 000 comments received on the rule. The 2017 implementation date is supported by the vehicle manufacturers so that they can align their vehicle manufacturing with the start of the latest phase of California's Low Emission Vehicle (LEV-III) emissions program, which sets fuel and vehicle air pollution controls similar to Tier III.

## California In-Use Off-Road Diesel Vehicle Regulation is authorised

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The California Air Resources Board (CARB) has received authorization from the US Environmental Protection Agency (EPA) to enforce the In-Use Off-Road Diesel Vehicle Regulation. This includes the regulation's performance standard requirements, such as fleet turnover requirements and restrictions on adding Tier 0 and Tier 1 vehicles.

Enforcement of the requirements for large fleets (> 5000 total horsepower) will be delayed from 1 January 2014 to 1 July 2014. The prohibition on adding vehicles with Tier 0 engines to any fleet and Tier 1 engines to large or medium fleets is effective on 1 January 2014.

Additional information about complying with the In-Use Off-Road Diesel Vehicle Regulation is available from [www.arb.ca.gov/msprog/ordiesel/knowcenter.htm](http://www.arb.ca.gov/msprog/ordiesel/knowcenter.htm).

## Oregon proposes to adopt California LEV III Standards

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The Department of Environmental Quality for the US state of Oregon has issued a proposal to update its Low Emission Vehicle programme by adopting California's most recent motor vehicle emissions standards – the LEV III standards and California's 2012 ZEV 2.0 Regulations increasing the percentage of electric or plug-in hybrid new cars and trucks.

Details are at [www.oregon.gov/deq/RulesandRegulations/Documents/Orlevnoticepacket.pdf](http://www.oregon.gov/deq/RulesandRegulations/Documents/Orlevnoticepacket.pdf).

## Eight US States agree to Promote Zero-Emission Vehicles

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The governors of eight US states, including California and New York have agreed to put 3.3 million 'zero-emission' vehicles on the road within 12 years. Zero-emission vehicles include battery-electric vehicles, plug-in hybrid-electric vehicles and hydrogen fuel-cell electric vehicles.

The states will start by harmonising building codes to make it easier to construct electric car charging stations and will consider financial incentives to promote zero-emission vehicles, according to the agreement. They will also consider giving favourable electricity rates for home charging systems and purchase such cars for government fleets.

The agreement was signed by the governors of California, Connecticut, Maryland, Massachusetts, New York, Oregon, Rhode Island and Vermont.

## California announces Clean Vehicle Funding Initiatives

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The California Air Resources Board (CARB) announced on 26 September 2013 that it is making



available an additional \$72.5 million (approx. €54 million) in funding for programmes to clean up California's fleet of cars, trucks and buses.

The Clean Vehicle Rebate Project, under which purchasers of plug-in hybrid and zero-emission cars and light trucks can receive up to a \$2500 rebate together with up to \$7500 clean vehicle federal tax credit and various other regional incentives, received an extra \$44.5 million in funding, to be distributed on a 'first come, first served' basis.

Funding for this year's Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project was increased by \$10 million to \$15 million. This programme provides vouchers of up to \$55 000 to help California fleet owners purchase cleaner, advanced technology trucks and buses.

CARB's Truck Loan Assistance Program received an additional \$18 million to help small business fleet owners finance truck upgrades required under CARB's In-Use Truck and Bus Regulation.

Details are at [www.arb.ca.gov/newsrel/newsrelease.php?id=505](http://www.arb.ca.gov/newsrel/newsrelease.php?id=505).

## **US-EPA reaches Pollution Control Agreement with Shipping Company**

The US Environmental Protection Agency (EPA) and Coast Guard have reached an agreement in principle with Carnival Corporation to develop advanced emissions control technologies to be used in waters surrounding US coasts.

Under the agreement, Carnival Cruise Lines will develop and deploy a new exhaust gas cleaning system on up to 32 ships over the next three years to be used in Emission Control Areas (ECAs). These new controls combine the use of sulfur oxide (SOx) scrubbers with Diesel Particulate Filters.

## **GE tests Tier 4 Locomotive Technology without DPF or SCR**

GE Transportation is testing what it says is the first diesel locomotive to meet the US Environmental Protection Agency's Tier 4 emission standards (due to come into force on 1 January 2015) without the use of any type of aftertreatment. Trials with the 'Evolution Series Advance Power 4' are underway on 160 km of track in western Pennsylvania and eastern Ohio, and additional field testing is planned for the near future.

GE says its technology is based on using hot exhaust gas to keep the cylinders at the optimal temperature, which eliminates the need for DPFs and SCR "which can add 1800 kg to the locomotive and requires the provision of infrastructure to supply the urea".

GE says it has also developed NextFuel natural gas retrofitting kits to enable existing Evolution Series

locomotives to operate on 100% diesel or up to 80% natural gas, with Tier 3 compliance.

## **US-EPA to hold 'Listening Sessions' on Carbon Emissions from Power Stations**

The US Environmental Protection Agency (EPA) has announced that it is to hold eleven 'public listening sessions' on reducing carbon [CO<sub>2</sub>] pollution from existing power plants. The intent is to solicit ideas and input from the public and stakeholders about the best Clean Air Act approaches to reducing carbon pollution from existing power plants, which EPA says are the nation's largest stationary source, responsible for about one third of all greenhouse gas pollution in the United States. The agency will then seek additional public input during the notice and comment period once it issues a proposal, by June 2014.

## **New York's Air Quality is Cleanest in 50 Years**

New York City's air quality has reached the cleanest level in over half a century, Mayor Michael Bloomberg said on 26 September 2013. The level of soot pollution has fallen by 23% since 2007, while ambient SO<sub>2</sub> levels have dropped by 69% since 2008. The Mayor credited the city's sustainability program PlaNYC for helping to bring about the reductions. He said the administration's Clean Heat programme, which phased out use of the most heavily polluting heating oils in New York City, was the single biggest factor in the change.

## **SOUTH AMERICA**

### **Brazil to cut Sulfur Content in Petrol**

Resolution 40/2013 published on 30 October 2013 in the State Gazette of Brazil cuts the sulfur content in petrol from the current 800 mg/kg to 50 mg/kg (i.e. 50 ppm) as of 1 January 2014.

The lower sulfur content-petrol to be sold across Brazil is seen to reduce the sulfur emissions in the atmosphere by 94%. The resolution was developed by the oil and gas sector regulator ANP. The measure is part of the light-duty vehicle emissions standard L6 of the government's motor vehicle emissions control programme Proconve, coordinated by Brazil's national environmental council Conama.

## **EURASIA**

### **Azerbaijan plans move to Euro 3 in 2014**

On 14 October 2013, Azerbaijan's State Committee on Standardization, Metrology and Patents presented proposals to the government for a transition to the Euro 3 standard for diesel and petrol engines, as well as the quality of fuel used in the country.



Although the new AZS 636-2012 "Car resources. Environmental classes" standard, which envisages the introduction of Euro 3, came into effect on 1 August 2012, the Committee proposes that Euro 3 should come into force from January 2014, with a phased implementation of the Euro 4 and Euro 5 standards in later years.

The state energy company SOCAR said that gasoline production in accordance with the Euro 3 standard is planned for 2014, when the reconstruction of existing refineries is completed. Further upgrades of the fuel quality to the Euro 4 and Euro 5 standards will be possible after SOCAR commissions a new oil and gas processing complex, which is planned to be constructed in the Garadagh district of the capital Baku.

## ASIA PACIFIC

### China issues Euro 5-equivalent Regulation

On 17 September 2013, the Chinese Ministry of Environmental Protection issued the National V regulation on light vehicle emissions (equivalent to Euro 5), to be implemented nationwide on 1 January 2018. The State Council has approved Beijing introducing the new standard immediately after its release and other cities with low-sulfur fuel are encouraged to implement the regulation in advance of 2018, the ministry said.

### China announces Air Pollution Measures including Transport Fuels

On 12 September 2013, China released a set of measures to tackle air pollution. The measures include accelerating the closure of some old polluting industrial installations, speeding up new transport fuel standards, reducing coal consumption and boosting nuclear power and natural gas use.

By the end of 2014, all diesel supplies will need to comply with National IV standards, while National V standards will be applied to key industrial regions by the end of 2015. The plan also addresses vehicle emissions by removing all high-polluting "yellow label" vehicles that were registered before the end of 2005 from the roads in the three regions with heavy industry by the end of 2015. For all of China, such vehicles would be taken off the road by 2017.

The plan also aims to raise the share overall of non-fossil fuel energy to 13% by 2017. The previous target was to reach 15% by 2020 and the current level is 11.4%. China will top approve new thermal power plants in key industrial areas and will aim to achieve "negative growth" in coal consumption in the regions. By the end of 2015, it is planned to have 150 billion

cubic meters of natural gas trunk pipeline transmission capacity to cover key industrial areas.

The plan has been published on the Chinese government's official website at [www.gov.cn/jrzq/2013-09/12/content\\_2486918.htm](http://www.gov.cn/jrzq/2013-09/12/content_2486918.htm).

In addition, the Chinese Finance Ministry said on 14 October 2013 that it would give rewards amounting to 5 billion yuan (approx. €600 million) for curbing air pollution in six regions where the problem is serious. The awards would be made at the end of the year and would be determined by pollution reduction targets, investment in tackling the problem and falls in PM<sub>2.5</sub> levels, the ministry said on its website.

The ministry said the regions eligible for the rewards were Beijing and its neighbouring city of Tianjin, the provinces of Hebei, Shanxi and Shandong, as well as the Inner Mongolia Autonomous Region. The provinces of Shanxi and Inner Mongolia are among China's top coal-producing provinces and have been a major source of air pollution.

### ICCT and Chinese Research Centre agree Light-duty Fuel Efficiency Project

The International Council on Clean Transportation (ICCT) and the China Automotive Technology and Research Center (CATARC) have announced joint research plans to evaluate fuel-efficiency technologies and the China-specific costs of these technologies for new light-duty vehicles in the next decade. This work is intended to support the development of medium-term energy-efficiency goals for China's auto industry, as well as fuel-efficiency targets for light-duty vehicles in 2020 and 2025.

The ICCT will contribute a methodology and analytical framework for technology and cost assessment tailored to the Chinese market. CATARC will provide crucial local data and technical inputs that tune the analytical results to fit the Chinese context, and therefore better support the Chinese policy-making. Initial results of the project are expected to be available in spring 2014.

### Beijing introduces Emergency Pollution Programme

On 22 October 2013, the Beijing municipal government officially put into effect an emergency programme to deal with severe air pollution. Under the 'Beijing Municipal Heavy Air Pollution Emergency Response Programme', drivers will only be allowed to use their cars every other day when a red air pollution alert is issued. Cars with odd and even license plates will be allowed on alternating days and 30% of municipal cars will be banned from streets on an odd/even basis. Vehicles are considered a major contributor to Beijing's heavy smog. A research team from the Chinese Academy of Sciences estimated that vehicle exhaust

fumes contribute 22.2% of PM<sub>2.5</sub>, exceeding the figure for industrial emissions.

## **Singapore recommends Diesel Vehicles Inspection**

On 16 October 2013, Singapore's National Environment Agency (NEA) advised motorists to get their vehicles inspected and serviced before tighter emissions norms are implemented on 1 January 2014.

As part of Singapore's overall plan to achieve higher air quality standards, a tighter emission standard for in-use diesel vehicles will be implemented from 1 January 2014. All such vehicles will need to achieve a smoke opacity test result of 40 Hartridge Smoke Units (HSU) during their mandatory vehicle inspections for road tax renewal. The current requirement is 50 HSU.

NEA has also set up a platform encouraging members of the public who spot smoky vehicles on the road to report them, by providing the vehicle registration number, location, date and time of the incident.

## **New Maintenance Scheme for LPG Vehicles in Hong Kong**

Environmental regulators in Hong Kong (China) have said at a news conference that concentrations of nitrogen dioxide, one of the most important contributors to smog, surged by a fifth in Hong Kong's air from 2008 to 2012. A team of local and international scientists have traced the cause to LPG-fuelled vehicles.

"The problem lies in the catalytic converters on the taxis and minibuses", said Ms Christine Loh, the Under Secretary for the Environment. "Unless replaced every 18 months for cars and light buses that are driven nearly around the clock, the catalytic converters become fouled, and the vehicles begin emitting extremely high levels of pollution. The LPG vehicles, which are supposed to be cleaner, are spewing out very high levels of nitrogen," she said and the unexpected rise in NO<sub>2</sub> shows they had not appreciated the importance of maintenance. Although natural-gas-powered vehicles have not been deployed on a large scale in Hong Kong, they would pose the same problems, she added.

As a result, the Hong Kong government in the coming months will pay for the free replacement of catalytic converters on the city's entire privately owned fleet of roughly 18 000 taxis and several thousand minibuses, said Ms Loh. Mr Pang Sik-wing, the city's Principal Environmental Protection Officer for Air Sciences, said the replacement effort would cost about HK\$10 000 (approx. €950) per vehicle. After the first free replacement, taxi and minibus owners will be responsible for replacing catalytic converters every year and a half at their own expense.

In April 2014 five mobile sensors will be deployed around the city to spot and photograph offending vehicles. Those nabbed will be given 12 days to make the change, after which they will lose their vehicle's licence. Vehicles will also have to go for annual checks to ensure they comply.

## **Thailand's Ecocar Investment project**

Thailand's Industry Minister Prasert Boonchaisuk said on 2 October 2013 that he believed the second phase of the Board of Investment (BOI)'s eco-car investment-promotion project should attract five or six automobile manufacturers.

Interested companies can apply for investment support from the BOI until 31 March 2014, with the first of the new eco-cars expected to be available in the market early in 2015. The minister said manufacturers interested in phase-two production must meet the Board's investment criteria, most importantly a minimum outlay of Bt6.5 billion (approx. €153 million) in a fully integrated automobile production-line system including engine and components manufacturing, and an annual production capacity of at least 100 000 units, from the fourth year of production. Recipients of phase-two investment privileges must commence production by 2019 at the very latest.

When combining both phases of the project, there will be a production capacity of 930 000 eco-cars in 2018 and an overall Thai auto-production capacity of more than 3 million vehicles, 79% of which will be for export.

Engines for the second phase must be of the Euro 5 type, with CO<sub>2</sub> emissions of not more than 100 g/km, fuel consumption of not more than 4.3 litres/100km, and an engine size of not more than 1300 cc for petrol and 1500 cc for diesel.

## **Vietnam to ban 83 RON Petrol**

Vietnamese Prime Minister Nguyen Tan Dung has approved a proposal by the Ministry of Industry and Trade to ban the production and sale of 83 RON petrol from 1 January 2014, the government said in a statement.

The decision was taken after a number of filling stations deceived customers by mixing 83 RON petrol with higher-octane grades and selling the mixture at the price of the more expensive, higher-octane grades, according to the statement. Vietnamese sales of the grade in 2011 were some 8.6% of total petrol sales.

## **Indonesia to set Rules to maximise Renewable Energy**

The Indonesian government is reported to be planning to issue a new rule to maximise the usage and production of renewable energy.

Rida Mulyana, Director General for Renewable Energy and Energy Conservation in the Indonesian Energy and Mineral Resources Ministry, said under the new rule the management of biofuel and biodiesel production activities will be handed over to the Directorate-General of Renewable Energy and Energy Conservation. This is currently the responsibility of the Ministry's Oil and Gas Directorate-General. The new rule will replace the ministry's existing 2008 regulation on biofuel. The state will enhance management for domestic companies' bioethanol production in order to further promote bioenergy development in the country, Mulyana added. In its long-term energy development strategy, projecting to 2050, the Indonesian government set a target of 30% for renewable energy, 26% for coal, 24% for natural gas and 20% for oil.

## MIDDLE EAST

### Israel measures Substantial Drop in NOx on Car-free Day

The Israeli Environmental Protection Ministry reports that on Yom Kippur (14 September 2013), as cars disappeared from the roads air quality levels improved. The reduction in air pollution was particularly prominent in the big cities. With the holiday the concentration of NOx plunged, dropping by 92% in the Gush Dan region. Maximum measurements of NOx reached 9 parts per billion during the holiday, compared to up to 116 ppb on the morning of the day before, the Ministry said. Jerusalem also saw a 95% drop in NOx, falling from 194 ppb to 9 ppb on Yom Kippur. The Ministry emphasised that the drastic reduction applies only to NOx and not to respirable fine particles, because particles have a longer stay in the atmosphere - about 10 days.

## AFRICA

### South Africa announces Date for Biofuel Blending

South Africa's Department of Energy has set 1 October 2015 as the mandatory implementation date from which fuel producers will have to blend diesel and petrol with biofuels.

Last year, the government said the mandatory blending for biodiesel would be a minimum of 5% for diesel and between 2% and 10% for bioethanol in petrol. Canola, sunflower and soya are the common feedstock for biodiesel, while sugar cane and sugar beet are the common feedstock for ethanol, in South Africa. The government said maize, South Africa's staple food, could not be used in the production of biofuels to ensure food security.

## UNITED NATIONS

### Formal WLTP Proposal released

The formal draft of the Global Technical Regulation (gtr) for the World harmonised Light vehicle Test Procedure (WLTP) has been published on the GRPE website in readiness for its anticipated adoption at the special meeting of GRPE in November 2013.

It is foreseen that there will still be some last-minute changes to the document - UN procedures require the formal document to be submitted ahead of the meeting, but 'informal' documents can be used to introduce corrections right up to the time of adoption.

The draft gtr is available at

[www.unece.org/fileadmin/DAM/trans/doc/2013/wp29grpe/CE-TRANS-WP29-GRPE-2013-13.pdf](http://www.unece.org/fileadmin/DAM/trans/doc/2013/wp29grpe/CE-TRANS-WP29-GRPE-2013-13.pdf).

### Climate and Clean Air Coalition Assembly

The Ministerial High Level Assembly for The Climate and Clean Air Coalition (CCAC) to reduce short-lived climate pollutants (SLCPs) was held in Oslo, Norway, on 3 September 2013.

The Assembly encouraged the rapid scale-up of the current CCAC initiatives to mitigate SLCPs, such as efforts to reduce methane and black carbon emissions. One of the CCAC's newest partners, the World Health Organization, noted the serious impact of SLCPs on health and the potential benefits from addressing the problem head-on.

The World Bank, a CCAC partner, also released a report on that day entitled "Integration of short-lived climate pollutants in World Bank activities". The report was prepared at the request of the G8 and describes what the World Bank is aiming to do in its portfolios, including integration of SLCP mitigation into development projects. The Bank encourages the SLCP reduction potential in investments across a range of activities, including bus and rail transport systems, and cooking stoves.

The CCAC communiqué is at

[www.unep.org/ccac/Portals/24183/HLA/norway/docs/CCAC\\_High%20Level%20Assembly\\_Communique.pdf](http://www.unep.org/ccac/Portals/24183/HLA/norway/docs/CCAC_High%20Level%20Assembly_Communique.pdf).

and the report from the World Bank is at

<http://documents.worldbank.org/curated/en/2013/06/18119798/integration-short-lived-climate-pollutants-world-bank-activities-report-prepared-request-g8>.

### UN awards EU Commissioner the 'Champions of the Earth' Prize

The United Nations announced on 18 September 2013 that it was to honour EU Environment Commissioner Janez Potočnik with its Champions of the Earth prize for his efforts to promote a greener EU economy.

Potočnik received the Policy Leadership award for his commitment to an inclusive Green Economy and



boosting resource efficiency. The prize is the UN's highest environmental accolade and is awarded to leaders from government, civil society and the private sector whose actions have had a significant and positive impact on the environment.

UNEP Executive Director Achim Steiner said: "Despite the challenges posed by the financial crisis and the economic downturn, Mr. Potočník played a key role in maintaining Europe's focus on the future as an advocate for a more sustainable and resource efficient economy. Science, innovation and persistence have been leitmotifs of his tenure as Commissioner for the Environment."

## GENERAL

### **IARC classifies Particulate Matter and Outdoor Air Pollution as Carcinogenic**

On 17 October 2013, the World Health Organization's International Agency for Research on Cancer (IARC) announced that it has classified "Outdoor Air Pollution" as carcinogenic to humans (IARC Group 1).

After a review of available literature, IARC's expert group concluded that there is sufficient evidence that exposure to outdoor air pollution causes lung cancer. They also noted a positive association with an increased risk of bladder cancer. Particulate matter, as a major component of outdoor air pollution, was evaluated separately and was also classified as carcinogenic to humans (Group 1). Group 1 is the highest IARC rating, indicating that the evidence goes beyond the group 2A definition of 'probability' of carcinogenicity.

The IARC evaluation showed an increasing risk of lung cancer with increasing levels of exposure to particulate matter and air pollution. Although the composition of air pollution and levels of exposure can vary dramatically between locations, the conclusions of the Working Group apply to all regions of the world. The most recent data indicate that in 2010, 223 000 deaths from lung cancer worldwide resulted from air pollution. IARC said in their press release that the predominant sources of outdoor air pollution are transportation, stationary power generation, industrial and agricultural emissions, and residential heating and cooking.

IARC Director Dr Christopher Wild said that "There are effective ways to reduce air pollution and, given the scale of the exposure affecting people worldwide, this report should send a strong signal to the international community to take action without further delay."

IARC's summary evaluation was published in *The Lancet Oncology* on 24 October 2013.

**The carcinogenicity of outdoor air pollution**, Dana Loomis, Yann Grosse, Béatrice Lauby-Secretan, Fatima El Ghissassi, Véronique Bouvard, Lamia Benbrahim-Tallaa, Neela Guha, Robert Baan Heidi

Mattock, Kurt Straif, on behalf of the International Agency for Research on Cancer Monograph Working Group; *The Lancet Oncology* (24 October 2013), [doi: 10.1016/S1470-2045\(13\)70487-X](https://doi.org/10.1016/S1470-2045(13)70487-X).

**IARC press release No. 221**, 17 October 2013, [www.iarc.fr/en/media-centre/iarcnews/pdf/pr221\\_E.pdf](http://www.iarc.fr/en/media-centre/iarcnews/pdf/pr221_E.pdf).

On 7 October 2013, IARC also published an e-book "Air pollution and Cancer".

**Air Pollution and Cancer**, Kurt Straif, Aaron Cohen, and Jonathan Samet; IARC Scientific Publication No. 161, 7 October 2013, [www.iarc.fr/en/publications/books/sp161/index.php](http://www.iarc.fr/en/publications/books/sp161/index.php).

### **ICCT 2013 European Vehicle Market Statistics**

The International Council on Clean Transportation (ICCT) says that the new edition of their European Vehicle Market Statistics Pocketbook shows that efficient vehicles are available today in Europe in significant and growing numbers. ICCT says that for that reason, the CO<sub>2</sub> emissions targets for 2020 lie within reach, despite assertions to the contrary.

ICCT says that the CO<sub>2</sub> targets are within reach for manufacturers of larger vehicles as well as small cars because the proposed regulation takes vehicle weight into account. Industry claimed that target was unachievable, and the regulation a massive burden. But nearly all vehicle manufacturers have already reached their 2015 CO<sub>2</sub> targets, and many are over-complying, according to ICCT.

ICCT says that before 2008 the annual CO<sub>2</sub> reduction rate for new cars in the EU was 1%; since 2008 it has been 4%.

**European Vehicle Market Statistics Pocketbook 2013**, ICCT, October 2013, [www.theicct.org/european-vehicle-market-statistics-2013](http://www.theicct.org/european-vehicle-market-statistics-2013).

### **NRMM Aftertreatment Penetration Forecast between 2017 and 2023**

On 23 August 2013, Integer Research released a new report "Emissions Control in Non-Road Mobile Machinery (NRMM) Markets: 2013 Edition".

The report predicts that the European and North American markets will dominate sales of SCR-equipped non-road equipment, with these regions accounting for more than two thirds of the machine park using SCR aftertreatment by 2023. Depending on the timing of Tier 4-equivalent legislation, China has the potential to rival both markets by 2023 and sales of NRMM with advanced exhaust aftertreatment could surpass Europe and North America by 2023.

In the base-case scenario, the global SCR-equipped NRMM park grows rapidly over the period 2017-2023, from 1 million SCR vehicles globally to 5 million by 2023. The upside scenario predicts an explosive growth between 2017-2023 which sees the SCR park expand seven-fold over this period as a result of Tier 4 Final / Stage IV phase-in and end of flexibility schemes.



As well as SCR, Integer has studied the DPF and EGR markets and predicts a rapid increase in DPF sales post-2014. The DPF market will be concentrated on the North American, European and to a lesser degree Japanese, markets following the implementation of more stringent emissions legislation. Both construction and agricultural sectors provide the main markets for DPF. EGR technology will equally find its biggest non-road market in North America and Europe (87%). The BRIC countries are not expected to require DPF until post-2017 at the earliest and will start playing a bigger role when Tier 4 equivalents are rolled out post-2020.

## RESEARCH SUMMARY

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## FORTHCOMING CONFERENCES

### Commercial Vehicle Megatrends Europe 2013

12 November 2013, Brussels, Belgium

<http://cvmeurope2013.automotiveworld.com>

*Topics will be fuel efficiency, emissions reduction and market outlook.*

### Passenger Car Megatrends Europe 2013

13 November 2013, Brussels, Belgium

<http://ameurope2013.automotiveworld.com>

*Topics will be powertrain, safety and connectivity.*

### SAE 2013 Fuels, Lubricants and Aftertreatment Symposium: Achieving Fuel Economy and GHG Targets

18-21 November 2013, Long Beach, California, USA

[www.sae.org/events/fle](http://www.sae.org/events/fle)

*The symposium will focus on the maturity of biofuels technology, the refinement of aftertreatment, and the evolution of lubricants and their impact on fuel economy and emissions reductions objectives.*

### CleanER-D Final Conference

20 November 2013, Brussels, Belgium

[www.cleaner-d.eu](http://www.cleaner-d.eu)

*The conference will present the results achieved during this collaborative research project aimed at developing, improving and integrating emissions reduction technologies for diesel locomotives.*

### Workshop on Diesel Sprays and Biodiesel Combustion

20-21 November 2013, Brunel University, UK

[www.combustioninstitute.de/Workshop\\_on\\_Diesel\\_Sprays.pdf](http://www.combustioninstitute.de/Workshop_on_Diesel_Sprays.pdf)

*The workshop will identify key areas of research, development, and design that are required for the reduction of the engine out pollutants.*

### Homologation Conference

25-26 November 2013, Munich, Germany

[www.tuev-sued.de/automotive/veranstaltungen/fachtagung-homologation-2013](http://www.tuev-sued.de/automotive/veranstaltungen/fachtagung-homologation-2013)

*The conference is intended to provide a forum for an exchange of experiences and updates on new developments in the area of vehicle homologation, type certification and type approval worldwide.*

### Internal Combustion Engines: Performance, Fuel Economy and Emissions

27-28 November 2013, London, UK

[www.imeche.org/events/C1370](http://www.imeche.org/events/C1370)

*This conference provides a forum for IC engine experts looking closely at developments for personal transport applications, though many of the drivers of change apply to other transport sectors.*

### 4<sup>th</sup> IMarEST Ship propulsion Systems Conference – Efficiency and Compliance

27-28 November 2013, London, UK

[www.imarest.org/OurEvents/EventListings/ShipPropulsionSystems/27-28November2013.aspx](http://www.imarest.org/OurEvents/EventListings/ShipPropulsionSystems/27-28November2013.aspx)

*Key themes will include future developments in slow and medium speed engines, fuel alternatives, and the effect of operational practice on CO<sub>2</sub> emissions.*

### International Conference - Real Driving Emissions

2-4 December 2013, Bonn, Germany

[www.real-driving-emissions.eu](http://www.real-driving-emissions.eu)

*The conference will discuss the latest developments on the EU's Real Driving Emissions regulations, provide insights into PEMS data evaluation models, review current PEMS technology and application solutions, and examine RDE simulation models.*

### The 2<sup>nd</sup> Annual European Future Transport Conference

3 December 2013, Brussels, Belgium

[www.eu-ems.com/summary.asp?event\\_id=180&page\\_id=1502](http://www.eu-ems.com/summary.asp?event_id=180&page_id=1502)



*The conference will assess how the European Commission's Clean Power for Transport Package will help reduce transport GHG emissions and support Europe's growth and competitiveness.*

### **The Spark Ignition Engine of the Future**

4-5 December 2013, Strasbourg, France.

[www.sia.fr/evenement\\_detail\\_spark\\_ignition\\_engine\\_of\\_1181.htm](http://www.sia.fr/evenement_detail_spark_ignition_engine_of_1181.htm)

*This SIA international Conference intends to provide the opportunity to exchange points of view and information on the potential of the future spark ignition engine to respond to the main challenges of mobility, CO<sub>2</sub>, emissions and hybridization.*

### **China International Diesel Engine Summit**

5-6 December 2013, Beijing, China

[www.borscon-de.com/de](http://www.borscon-de.com/de)

*The summit will focus on a number of topics including a summary and analysis on the partial implementation status of heavy-duty diesel vehicles of China V, the future trends of China V and China VI, guidance on the requirements about the emission control of NRMM, SCR systems, and the development prospects of diesel cars in China.*

### **Cleaner Air for All – All for Cleaner Air: Closing Conference of the European Year of Air**

9 December 2013, Strasbourg, France

[www.atmo-alsace.net/site/all4cleanerair4all/index\\_en.php](http://www.atmo-alsace.net/site/all4cleanerair4all/index_en.php)

*This will be the opportunity to take stock on the European Year of Air launched on January 8 2013 in Brussels and continued with consultations of the involved parties, reflections on new Air Directives, Green Week 2013 devoted to air, etc.*

### **Air Quality Monitoring – New Technologies, New Possibilities**

10-11 December 2013, London, UK

<http://aamg-rsc.org/2013/07>

*The meeting will focus on the challenges of helping regulations and strategies evolve to make the best use of resources and new instrumentation, including that for NO<sub>2</sub> and particulate matter.*

### **Transport & Clean Air**

11-12 December 2013, Moscow, Russia

*This seminar will allow leading experts to share best practices on reducing emissions of particulates and black carbon from diesel sources in the Arctic to help practitioners design more effective approaches at the city and national levels.*

### **Exhaust Systems: Euro VI and Beyond – Focus on CO<sub>2</sub> Reduction**

28-29 January 2014, Mainz, Germany

[www.exhaustsystems-forum.com](http://www.exhaustsystems-forum.com)

*International experts will give presentations on how to reduce and avoid CO<sub>2</sub> & NO<sub>x</sub> emissions because there is still more potential in the field of exhaust systems.*

### **10th ACEM (Motorcycle Industry) Conference**

29 January 2014, Brussels, Belgium

[www.acem.eu](http://www.acem.eu)

### **3<sup>rd</sup> Integer Diesel Emissions Conference Russia & CIS 2014**

5-6 March 2014, Moscow, Russia

[www.integer-research.com/dec-russia-2014](http://www.integer-research.com/dec-russia-2014)

*The conference will examine the implications of the next stage of diesel emissions legislation in Russia and CIS countries, the barriers to progress and analyse effective strategies to achieve compliance. The conference covers heavy-duty commercial vehicles, non-road mobile machinery, light-duty vehicles and passenger cars, natural gas vehicles, and AdBlue.*

### **14<sup>th</sup> Stuttgart International Symposium "Automotive and Engine Technology"**

18-19 March 2014, Stuttgart, Germany

[www.fkfs.de/english/company/events/stuttgart-symposium-2014](http://www.fkfs.de/english/company/events/stuttgart-symposium-2014)

*Organized by the FKFS (Stuttgart Research Institute for Automotive and Automobile Engine Technology).*

### **11<sup>th</sup> Green Ship Technology Conference**

18-20 March 2014, Oslo, Norway

[www.informamaritimeevents.com/event/greenshiptechnology](http://www.informamaritimeevents.com/event/greenshiptechnology)

*The conference will include retrofitting: analysis of the best methods for fitting new technologies and industry case studies; and opportunities for alternative marine fuels.*

### **8<sup>th</sup> International Exhaust Gas and Particulate Emissions Forum**

1-2 April 2014, Ludwigsburg, Germany

[www.abgas-partikel-forum.com/index.html](http://www.abgas-partikel-forum.com/index.html)

### **SAE World Congress**

8-10 April 2014, Detroit, Michigan, USA

[www.sae.org/congress](http://www.sae.org/congress)

### **35<sup>th</sup> International Vienna Motor Symposium**

8-9 May 2014, Vienna, Austria

[www.xn--vka.at/veranstaltungen/\\_veranst\\_symp\\_en.htm](http://www.xn--vka.at/veranstaltungen/_veranst_symp_en.htm)

*The conference will present the latest results in worldwide engine and powertrain development, future legislation, fuels and components, drive train electrification, hybrid technology, CO<sub>2</sub> reduction, and exhaust emissions control.*

## **Diesel Emissions Conference & ARLA 32 Forum Brazil 2014**

20-22 May 2014, Sao Paulo, Brazil

[www.integer-research.com/dec-brazil-2014](http://www.integer-research.com/dec-brazil-2014)

*The conference will examine current and future Brazilian diesel emissions legislation and the latest in advanced optimum emissions reduction technology.*

## **SIA Powertrain: The Clean Compression Ignition Engine of the Future**

21-22 May 2014, Rouen, France

[www.sia.fr/evenement\\_detail\\_sia\\_powertrain\\_rouen\\_2014\\_1200.htm](http://www.sia.fr/evenement_detail_sia_powertrain_rouen_2014_1200.htm)

*The Clean Compression Ignition Engine Conference intends to give powertrain developers and researchers the opportunity to obtain an overall picture of state-of-the-art technologies and look ahead to future tasks and challenges.*

Revised deadline for submissions: 30 November 2013

## **7<sup>th</sup> Emission Control 2014**

22-23 May 2014, Dresden, Germany

[www.emission-control-dresden.de/index.html](http://www.emission-control-dresden.de/index.html)

*The latest results and methods of development will be represented. Amongst others engine developing engineers and manufacturers of exhaust treatment systems and other important components will be contributing.*

## **FISITA 2014 World Automotive Congress**

2-6 June 2014, Maastricht, the Netherlands

[www.fisita2014.com](http://www.fisita2014.com)

*Congress topics will include clean and efficient engine technologies, new energy powertrains, and new mobility and vehicle concepts.*

## **Diesel Emissions Conference & AdBlue Forum Europe 2014**

17-19 June 2014, Düsseldorf, Germany

[www.integer-research.com/dec-europe-2014](http://www.integer-research.com/dec-europe-2014)

*The conference will examine the latest legislation, optimum diesel emissions reduction technologies and strategies for Heavy-duty commercial vehicles, NRMM, passenger cars and marine applications.*

## **18<sup>th</sup> ETH Conference on Combustion Generated Nanoparticles**

22-25 June 2014, Zürich, Switzerland

Details at [www.lav.ethz.ch/nanoparticle\\_conf](http://www.lav.ethz.ch/nanoparticle_conf)

## **5<sup>th</sup> International Conference on MinNOx**

25-26 June 2014, Berlin, Germany

[www.iav.com/sites/default/files/events/downloads/c4p\\_minnox\\_en.pdf](http://www.iav.com/sites/default/files/events/downloads/c4p_minnox_en.pdf)

*Proposals are requested for the areas including emissions legislation, technologies, simulations and application of minNOx systems, and synergetic reduction of nitrogen oxide and CO<sub>2</sub> emissions.*

Deadline for submissions: 15 January 2014

## **SAE 2014 Emission Control from Large Ships Symposium**

15-16 September 2014, Gothenburg, Sweden

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

## **SAE 2014 Heavy-Duty Diesel Emissions Control Symposium**

17-18 September 2014, Gothenburg, Sweden

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

## **SAE 2014 International Powertrain, Fuels & Lubricants Meeting**

20-23 October 2014, Birmingham, UK

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