



# Newsletter

September - October 2005

## INTERNATIONAL REGULATORY DEVELOPMENTS

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## EUROPE

### Heavy-duty 'Split Level' Directive

The 'political' part of the long-awaited EU 'split level' Directive on heavy-duty engine emissions was published in the Official Journal on 20 October 2005, and will therefore enter into force on 9 November 2005.

The Directive is the first part of a complete re-cast and consolidation of the Heavy-duty emissions Directives, and will repeal Directives 88/77/EEC, 91/542/EEC, 96/1/EC, 1999/96/EC and 2001/27/EC. It introduces the durability and OBD requirements for heavy-duty as well as re-stating the emissions limits for Euro 4 and 5 which were originally published in 1999/96/EC.

The Commission Directive (the 'technical' part of the split-level process) which should follow shortly will contain the technical annexes and will define technical details for requirements such as OBD and specific provisions for emission control systems using consumable reagents (for example SCR).

Article 8 of the new Directive in effect sets the scene for heavy-duty Euro 6. The first item in this article requires the Commission to review the need to introduce new emission limits for pollutants that are as yet unregulated, based on "the wider market introduction of new alternative fuels and on the introduction of new additive-enabled exhaust emission control systems". It then goes on to require the Commission to submit proposals for further limits on NO<sub>x</sub> and PM and to investigate whether setting an additional limit for particle levels and size is necessary, and, if so, to include it in the proposals.

It requires the Commission to report to the European Parliament and to the Council on progress in negotiations for a worldwide heavy duty cycle (WHDC) and to submit a report on requirements for the operation of an on-board measurement (OBM) system with, where appropriate, a proposal for measures for the type-approval of OBM systems.

### EU Air Quality Thematic Strategy issued

The European Commission has announced its CAFÉ air quality strategy, which aims by 2020 to cut the annual number of premature deaths from air pollution-related diseases by almost 40% from the 2000 level.

The strategy is expected to produce €42bn in health benefits, plus unquantified benefits in reduced damage to biodiversity and buildings. The cost is estimated as €7.1bn, of which €2bn would be borne by the transport sector, €2.5bn by agriculture, €1bn by combustion plants, €1bn by households, and around €600m by other industrial activities.

The thematic strategy proposes, as expected, new controls on fine particulate matter (PM<sub>2.5</sub>). By 2010 all Member States will have to comply with a 'concentration cap' of 25 µg/m<sup>3</sup>. This is derived from the existing PM<sub>10</sub> limit of 40µg/m<sup>3</sup>. Member States will be able to exceed the cap by up to 20% when the directive enters force, declining in steps to 0% in 2015. Member States will then have to cut PM<sub>2.5</sub> concentrations by 20% from 2010 to 2020. Plans to introduce a formula forcing Member States with higher PM<sub>2.5</sub> levels to make deeper cuts have been abandoned, but five years after the directive's adoption the Commission will propose further targets differentiated by Member State.

At CAFÉ's core are a series of targets for reducing key pollutant emissions between 2000 and 2020. Nitrogen oxides should be cut by 60%, volatile organic compounds (VOCs) by 51%, and ultra-fine particulates (PM<sub>2.5</sub>) by 59%.

Possible measures in the strategy, which covers the period from now to 2020, include strengthening the national emissions ceiling directive in 2006, and proposing new light-duty Euro 5 emissions standards by the end of 2005. The Commission will also come forward with a proposal to tighten further the emissions from heavy duty-vehicles. In the longer term, the Commission will investigate the feasibility of improving the type approval process so that test-cycle emissions better reflect real world driving. The Commission Communication on the strategy says that older road vehicles cause disproportionate levels of pollution. Member States should therefore consider targeted retrofitting and scrapping schemes when drawing up plans to meet air quality objectives.

On shipping, the Commission says that emissions of SO<sub>2</sub> and NO<sub>x</sub> from ships are a serious concern, as they are expected to exceed those of all land-based sources in the EU by 2020. The Commission will consider a proposal for tighter ship NO<sub>x</sub> standards by the end of 2006. It will ensure that low-emission operation is a criterion for EU funding programmes, including Marco Polo and Motorways of the Sea.

The Commission will "examine the scope" for reducing VOC emissions from petrol stations and will "further encourage shifts towards less polluting modes of transport". It will also examine whether small combustion plants under 50 MW in capacity should be brought into the IPPC industrial pollution regime, although there are no plans to put extra controls on installations already covered by the IPPC or the Large Combustion Plants (LCP) directive. The inclusion of low-emissions zones and minimum public procurement quotas for cleaner vehicles may also be considered.

## **Swedish EPA comments on the EU Air Quality Strategy**

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The Swedish EPA says that there is no way of attaining the Swedish environmental objectives for reduced acidification and eutrophication under the new EU Air Quality strategy (CAFÉ). Sweden should work towards increasing the level of ambition of the European Commission's proposal.

The agency's statement says that the Strategy is a major step in the right direction, but it is not enough to reach either the air quality objectives previously stated by the EU or the Swedish national objectives. To attain these, further extensive measures are necessary to limit the emission of pollutants in Europe. Under the current proposal the amount of air-polluting particles will still, in 15 years' time, cause health problems in Sweden reducing life-expectancy by an average of 2.4 months. The Swedish EPA says that there are also economic reasons for strengthening the proposals. "Estimated socio-economic gains, both in the Commission's proposal and in the more ambitious alternative recommended by the Swedish EPA, are significantly greater than the costs of the various measures required. This is in spite of the fact that costs are overestimated and gains underestimated".

## **Responses to the Euro 5 Consultation**

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The European Commission has now published the 50 responses received to their internet consultation on the initial draft proposals for Euro 5 emissions standards for cars and light commercial vehicles. The responses came from governments (11), industry (23), non-governmental organisations (13) and individuals (3). The responses and a summary can be accessed from the Automotive Unit homepage at: [http://www.europa.eu.int/comm/enterprise/automotive/index\\_en.htm](http://www.europa.eu.int/comm/enterprise/automotive/index_en.htm)

The documents from the motor industry (ACEA) and the environmental transport organisation T&E give an indication of the contrasting responses. ACEA says that it is not possible to pull Euro 5 forward before 2010 and that there is no justification for extending durability to 160000 km. It says that the 20% reduction proposed in diesel NOx is still a significant task, but confirms that the 5 mg/km particulate level will force the fitment of particulate filters. On spark ignition measures, the response says that the proposed 25% reduction in NOx is not cost-effective and the similar reduction in HC is unnecessary and unjustified. Achieving car emission levels for heavy (>2500 kg) passenger cars will require diesel NOx aftertreatment. ACEA proposes retaining the current system (in which these vehicles can be treated as light commercial vehicles) for vehicles with over 7 seats and/or off-road

capability, motor caravans and other special-purpose vehicles.

T&E, on the other hand, says that NOx emissions from diesel cars should be limited to 75 mg/km rather than the 200 mg/km proposed by the Commission. Exhaust aftertreatment would be necessary but this is technically feasible. The diesel PM limit should be 2 mg/km, rather than 5 mg/km proposed. Emissions of NOx and HC from petrol cars should be reduced to 20 mg/km and 25 mg/km respectively, rather than 60 mg/km and 75 mg/km. The group says that the Commission should bear in mind that industry cost estimates for the introduction of previous Euro standards have always been "grotesque" exaggerations. It calls for the standards to be introduced in 2008, rather than 18-36 months after the regulation's entry into force as proposed.

## **MEP calls for Road Tolls linked to Emissions**

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The rapporteur for the European Parliament's Transport Committee is proposing revised rules for the 'Eurovignette' road toll rules which would clearly link truck tolls to emissions standards and would extend the tolls to all trucks over 3.5 tonnes. The amendments to the draft Directive, which will be voted on by the European Parliament in December, propose that the linkage is mandatory, rather than optional.

## **Germany sets Measures for Emissions-based Traffic Restrictions**

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The Bundesrat, the German parliament's upper house, has approved a draft law which, from next year, will progressively require all cars and lorries to be labelled according to their emissions of fine particles (PM10). The measure will enable towns and cities to ban more polluting diesel vehicles from city centres during episodes of high pollution.

All petrol-engined vehicles and diesel vehicles meeting Euro 4 emission standards will carry a green label. Diesel vehicles meeting Euro 2 or 3 emissions standards will carry a white label. Diesels complying only with Euro 1 will not carry a label at all. Depending on the circumstances, local authorities could temporarily ban just vehicles without a label, or also those with a white label. The German environment ministry and environmentalists criticised the states for failing to make the future Euro 5 emission standard the basis for the green label, as this would require vehicles to be fitted with particulate filters.

## **Copenhagen Report on PM10 and NO<sub>2</sub>**

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The City of Copenhagen's Environmental Protection Agency has issued a report which assesses the

sources of NO<sub>2</sub> at the most heavily trafficked streets in Copenhagen and analyses different scenarios of abatement measures to reach the European limit value for NO<sub>2</sub> in 2010 and PM10 in 2005.

Systematic mapping of NO<sub>2</sub> concentrations showed that about 80 streets are expected to exceed the 2010 limit value. Diesel-powered vehicles contribute by far the majority of NO<sub>x</sub> emissions, with heavy-duty vehicles being a disproportionately large share.

Source	Contribution to NO <sub>x</sub>	Proportion of traffic
Heavy-duty	20 to 30%	3 to 4 %
Vans	25 to 30%	10 to 12%
Taxis	20%	8 to 9 %
Passenger Cars	25 to 30%	77%

In 2010 the urban background contribution for this type of areas will be 5-15 µg/m<sup>3</sup> and the regional contribution about 10 µg/m<sup>3</sup>. Street concentrations are between 18 and 62 µg/m<sup>3</sup>. It is therefore concluded that since the urban background is relatively high a drastic reduction in traffic is required to get pronounced reduction in street NO<sub>2</sub> concentrations.

4 different action scenarios were considered:

- Measures within municipal management (harbour tunnel, city ring, commuter plans, traffic calming).
- Introduction of a toll ring or road pricing.
- Use of cleaner vehicle emission technologies (buses, heavy-duty vehicles and diesel cars and vans requiring particle filters and NO<sub>x</sub>-reducing equipment).
- A combination of these measures.

Only the cleaner vehicle technology scenario (and hence the combination scenario) achieved a significant effect compared to the 2010 baseline. It reduces the exceedances to only 5 streets in 2010.

Similar assessments for PM10 showed that by 2010 cleaner vehicle technology would reduce particle emission by 22% from 2003 levels. This is of greater importance in heavily-trafficked streets as the traffic contribution to urban background PM10 is small.

The report "Virkemidler til overholdelse af NO<sub>2</sub> grænseværdier for luftkvalitet i København, 2005" (including a 14-page summary in English) is available at <http://www.miljoe.kk.dk/6A3C09E1-4C09-4166-AD4B-B8AD59DC6C66>.

## Russia announces Move to Euro 2, 3 & 4

The Russian Government has approved a special technical regulation tightening standards for exhaust emissions. Euro 2 emission standards will be put into effect from 1 January 2006 and Russia plans to introduce Euro 3 in 2008 and Euro 4 in 2010.

According to the Industry and Energy Ministry, bringing Russia up to the Euro 2 standard will save the country a total of 243.6 bn roubles (approx €7 bn) in reduced environmental protection costs and savings to the health system.

The Russian press agency says that all automobiles produced in Russia comply with the Euro 2 standard. Petrol at most filling stations is currently compliant with the Euro 1 requirements, but it is planned to make it correspond to the Euro 2.

## Tuscany to use Incentives to Upgrade Regional Bus Fleet

The Tuscany region of Italy is to become the first to take advantage of central government incentives to encourage cleaner vehicles. The regional government announced it will spend €145 million to upgrade its public transport fleet. The central government will reimburse €18.5 million this year and an additional €5 million in 2006. Most of the 994 new buses to be bought will be powered by more efficient combustion engines, but 218 will be equipped with hybrid engines. The central government has earmarked €100 million to be spent by the end of 2010 to encourage the use of environmentally friendly public vehicles.

## In-service Emissions Campaign in Malta

The Malta Transport Authority's new "Emission Alert SMS 4 Clean Air" campaign asks motorists and other road users to send a text (SMS) message to a specific number if they see a vehicle emitting black smoke. Any vehicle reported will be tested, and if it fails an emissions test, the owner will have a week to fix the problem. 639 SMS messages were received in the first three days of the scheme.

## London Low Emission Zone Consultation

Transport for London (TfL) has issued a draft for consultation on the proposal to designate the whole of greater London as a Low Emissions Zone (LEZ).

The document says that around one thousand early deaths and the same number of hospital admissions are expected to occur in the London area in 2005 due to air pollution. Road transport is estimated to be responsible for 47% of emissions of both NO<sub>x</sub> and PM10 in London in 2005. The LEZ is intended to deter the most polluting diesel-engined vehicles from the Greater London area. From 2008 the LEZ would target Heavy (>3.5 tonnes) Goods Vehicles, buses and coaches based on their emission standards. The zone could be expanded to cover diesel-engined Light Goods Vehicles (vans) in 2010, subject to further analysis. By 2010 vans are forecast to be responsible for 24% of road transport emissions of PM10 within



London and heavy goods vehicles 37% of NOx emissions and 16% of PM10.

The draft proposes that the emissions standards for the LEZ should encourage the upgrade or replacement of diesel-engined heavy vehicles to Euro 3 for PM10 by 2008 and to Euro 4 for PM10 by 2010 (or to the relevant particulate standard in force at that time). The Euro 4 standard for NOx from 2010 is being considered "subject to a suitable certification mechanism being established". The proposal would levy a daily charge on vehicles not meeting these standards but which entered the zone.

## France announces CO<sub>2</sub> / energy saving measures

The French Prime Minister has announced a €100m research and development programme to develop a high-efficiency car consuming 3.5 litres per 100km within five years, as part of a series of measures to cut energy consumption.

In addition there is to be an increase in tax credits for low-emission cars to €2000, and from 1 January 2006 the cost of car registration ('carte grise') will be a function of the vehicle's CO<sub>2</sub> emissions. The increase will amount to €2 per g/km CO<sub>2</sub> over 200 g/km and to €4 from 250 g/km. For 8% of the vehicles, that will represent a doubling of the amount of the 'carte grise'; for others it will be neutral. Finally the target for biofuels is to be 5.75% of the market by 2008.

## Portugal to introduce CO<sub>2</sub>-based Car Taxes from July 2006

As part of its 2006 budget, the Portuguese government has approved starting a move from capacity-based to CO<sub>2</sub>-based vehicle taxes from 1 July next year. Figures have not yet been released but the finance ministry expects there to be a 10% reduction for lower-CO<sub>2</sub> vehicles. The initiative was said in a statement to "mark the beginning of a progressive reform to make vehicle taxation work to combat pollution".

## Commission Studies on Options to reduce Ship Emissions

The European Commission has released five consultancy reports examining the technical potential for reducing emissions from ships in EU waters.

The general report, prepared by Entec, provides the assumptions and methods employed to estimate the costs and emission reductions results that are presented in the separate reports about the technologies. It also summarises emission reduction efficiencies of the technologies considered as well as

the 'maturity' of the technologies and their estimated uptake in the 'business as usual' scenario. The final section considers the time for application to all EU-flagged ships and EU ports and the experience and details of emissions monitoring for ships.

A table of the potential emissions reductions for various technologies is provided and is reproduced below.

Measure	% reduction per vessel			
	SO <sub>2</sub>	NOx	PM	VOC
Shore-side electricity	0	97	89	94
Basic IEM (2 stroke slow speed)	0	20	0	0
Advanced IEM	0	30	0	0
Direct water injection	0	50	0	0
Humid air motors	0	70	0	0
Exhaust Gas Recirculation	93	35	>63	
SCR (2.7% S residual oil fuel)	0	90	0	0
SCR (1.5% S residual oil fuel)	44	90	18	
SCR (0.1% S marine distillate)	96	90	>63	
Sea water scrubbing	75	0	25	
Fuel switching 2.7 to 1.5% S	44		18	
Fuel switching	81		20	

IEM = Internal Engine Modifications  
SCR = Selective Catalytic Reduction

The second report covers NOx abatement technology in more detail and includes a chart showing shipping as one of the most cost-effective sectors for NOx reduction. The third report covers SO<sub>2</sub> abatement technology and the fourth concerns shore-side electricity. Like the NOx report these were prepared by Entec. The fifth report was prepared by NERA economic consulting and concerns economic instruments for reducing ship emissions. The reports are available on the DG-Environment web site under 'EU Policy on Ship Emissions' at

<http://europa.eu.int/comm/environment/air/transport.htm#3>

## Mercedes Hybrid Passenger Car with SCR

A highlight of the press day at the Frankfurt International Motor Show was the appearance of a Mercedes S-Class diesel hybrid with SCR, even though it was only on the stand for the press days. The S 320 "Bluetec Hybrid" was equipped with a mild hybrid drive from a 3 litre six cylinder diesel engine with a urea-based SCR system. Mercedes claimed an 80% reduction in NOx for the system. Average AdBlue (urea solution) consumption is around 0.1 litre per 100km. The AdBlue tank is sufficient for the distance between two service intervals.

## NORTH AMERICA

### New Jersey moves towards Stricter Vehicle Emissions Standards

New Jersey's Department of Environmental Protection is moving forward with plans to adopt stricter motor vehicle emissions standards modelled on California's

standards. The Department has scheduled hearings on the proposed standards, with plans to publish the final regulations in the coming months.

By adopting the California rules, New Jersey expects to reduce emissions of smog-forming substances such as oxides of nitrogen and volatile organic compounds by 6.8 tons per day by 2017. The standards also require that by 2009, 11% of cars and light trucks be zero emission vehicles. Car companies can earn credits by selling electric cars, hybrids or conventional vehicles with ultra-low emissions and will be able to use the credits toward requirements to produce zero emission vehicles.

## **Changes to California Requirements for Urban Transit Bus Engines**

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The California Air Resources Board (ARB) has agreed to allow the sale for urban transit applications of US 2007-compliant heavy-duty diesel engines certified at 1.2 g/bhp-hr NOx levels until 2009.

The exact details of the regulatory language have yet to be worked out, but the final rule will include a retrofit-based mitigation strategy. This will help make-up for non-compliance with the ARB 2007-2009 0.2 g/bhp-hr NOx standard for new transit engines that was in place prior to the recent hearing. Under this strategy, for each 1.2 g/bhp-hr NOx engine, the transit agency will also need to retrofit an existing diesel vehicle with a verified technology that combines Level 3 PM control with a NOx control strategy that reduces NOx by at least 40%.

## **California Proposal on Truck Idling and Auxiliary Power Systems**

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California Air Resources Board (ARB) has adopted a new regulatory proposal for reducing idling emissions from new and in-use heavy-duty diesel trucks.

Under the requirements, to begin in 2008, all new heavy-duty trucks sold or operated in California will have to either:

- be equipped with a system to automatically shut-off the engine after five minutes of idling,
- certify to a 30 g/hr NOx idle emission limit, or
- employ 'cab comfort' technologies that meet specified emission limits starting in 2008.

For new 2007 or later heavy-duty vehicles equipped with a diesel auxiliary power system that uses a small diesel engine to produce power for the cab, this auxiliary diesel engine will need to be fitted with a Level 3 verified PM retrofit technology such as a diesel particulate filter with over 85% PM reduction efficiency. In addition to these anti-idling requirements for new heavy-duty trucks, all existing sleeper trucks

operated in California will need to comply with a five-minute idle limit starting in 2008.

## **Proposed Changes to Pleasurecraft & Marine Engine Emissions Regulations**

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The California Air Resources Board (ARB) is considering amending emissions regulations and test procedures for 2007 and later spark-ignition (gasoline) inboard and sterndrive pleasurecraft. The amendments are intended to provide industry with additional lead-time for complying with HC+NOx standards, while preserving the emission benefits.

The amendments, which are to be reviewed at a public hearing in November, would allow engine manufacturers an option to delay the introduction of the 5.0 g/kWh standard for combined hydrocarbon and oxides of nitrogen (HC+NOx) which is currently required for 45% of engines sold in model year 2007. Manufacturers choosing this option will have to certify all engines sold in 2008 and later model years to the 5.0 g/kW-hr HC+NOx standard; one year earlier than currently required. Additionally, they would have to implement a supplemental means of emission control in 2007 to compensate for the shortfall in emission benefits that year. The standard is expected to require the use of closed-loop, three-way catalyst systems.

The proposed amendments would also allow marine engine manufacturers to comply with the 5.0 g/kW-hr HC+NOx standard for engines with power ratings above 373 kW by averaging emissions with those of smaller engines, which would need to meet the fixed 5.0 g/kWh HC+NOx standard. Industry would also be allowed a choice of certifying engines with power ratings greater than 485 kW by either providing actual emissions test data or by opting to use a default value of 30.0 g/kW-hr HC+NOx. These changes may reduce the cost of compliance for large engines without reducing the benefits of the current regulation.

## **Report on Diesel PM Exposure Risks at Californian Ports**

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A draft report on an exposure assessment for diesel particulate matter at the Ports of Los Angeles and Long Beach has been issued by California ARB.

Diesel PM emissions at these ports were estimated to be 1760 tons per year in 2002, or about 21% of all diesel PM emissions in the South Coast Air Basin. The primary sources were associated with auxiliary engines used by ships docked at the ports and from cargo handling equipment. Emissions from commercial harbour craft, in-port trucks, in-port rail, and the manoeuvring of ships within the port account for only a small percentage of diesel PM emissions. The study showed that diesel PM generated at the

ports affects a large area and that the associated health risks are significant – in some nearby areas the potential cancer risk levels exceed 500 in a million.

## **US EPA Proposes Rule on PM2.5 National Ambient Air Quality Standard**

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The US Environmental Protection Agency has issued a proposed rule to implement the fine particle (PM2.5) national ambient air quality standards (NAAQS). It describes the planning framework and requirements for state implementation plans to reduce air pollution and meet the PM2.5 standards. The proposed rule lists diesel retrofit technology as a potential reasonably available control measure for in-use stationary, on-road and non-road mobile engines.

## **Mexico Announces Fuel Sulfur reductions**

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Mexico's environmental agency, SEMARNAT, has announced plans to introduce low sulfur gasoline and diesel fuel starting in 2006. Mexico will also examine accelerated introduction of lower sulfur fuels in key areas of the country, including the border with the US.

## **Canada Finalizes New Regulations on Off-Road Diesel Sulfur Requirement**

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The Canadian environment and health ministers have announced final regulations to reduce sulfur levels in diesel fuel used in off-road applications. The new regulations align with US requirements. According to the Canadian government, the new regulations set limits on sulfur in off-road diesel fuel from the current unregulated level to 500 mg/kg in 2007 and 15 mg/kg beginning in 2010.

## **States Fight EPA on Greenhouse Gases**

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A group of US states including Maine, New Mexico, Oregon, Rhode Island and the District of Columbia, have challenged a court ruling that upheld the US Environmental Protection Agency's refusal to regulate greenhouse gas emissions. The full US Court of Appeals will review the decision which "allowed (the EPA) to continue on its path of inaction".

## **Union Pacific plans to reduce Diesel Emissions in Texas**

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Union Pacific Railroad has announced a plan to reduce diesel emissions from its Texas rail yards by as much as 80% over the next 10 years. The company will install low-emission, fuel-efficient locomotives for operations in Houston, Galveston, Dallas-Fort Worth and San Antonio and will purchase 111 new locomotives in 2006 and 2007. Company

officials say the locomotives will reduce nitrogen oxide emissions up to 80%, while using 40% less fuel.

## **California Senate rejects Governor's Choice for Air Resources Board Chair**

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The California Senate has rejected Gov. Arnold Schwarzenegger's choice to head the state Air Resources Board, saying that Cindy Tuck's close ties to the energy industry rendered her a poor choice for an agency that wields wide influence on the nation's clean-air laws. She must now step down as chair of the board within 60 days.

## **SOUTH AMERICA**

### **Peru's Congress overrides Presidential Veto of Environmental Law**

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Peru's Congress has unanimously passed for a second time the General Environment Law, overriding a presidential veto but also modifying the legislation in certain key aspects. Under Peru's legislative process, the bill automatically becomes law because it was passed twice by more than half the members of the Congress.

The president had objected to 23 articles in the 155-article bill, including clauses that called for the use of World Health Organization standards to set maximum allowable levels of contaminants and raised fines for environmental contamination. Under the new version, the WHO standards will only be employed if a national agency has not already set local limits.

## **ASIA-PACIFIC**

### **Vietnam goes to Euro 2 Standards**

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The Prime Minister of Vietnam has signed a decision to adopt Euro 2 standards by 1st July 2007 for all new vehicles. The adoption schedule of other tighter Euro standards will be developed further and submitted to the Government for approval by the Ministry of Transport. The decision also mentions that the local governments can adopt Euro 2 standards earlier and/or more stringent standards.

### **Singapore Rebates for Cleaner Vehicles**

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Singapore's National Environment Agency (NEA) and Land Transport Authority (LTA) have announced that special rebates for environmentally friendly vehicles will be extended from the end of 2005 for an additional two years.

A rebate equivalent to 40% of the open market value of electric or hybrid fuel cars may be used to offset the additional registration fee paid when a new car is registered, usually set at 150% of the car's market



value. The rebate will also apply to passenger cars running on compressed natural gas, while gas powered buses will receive a 5% rebate. Natural gas taxis qualify for a rebate of 80% percent of their market value until October 2006, when the rebate will drop to 40 percent.

## **India promotes Natural Gas Vehicles**

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India plans to increase the use of compressed natural gas (CNG) in vehicles to reduce pollution. Domestic sales of CNG, which is cheaper than the liquid fuels it replaces, rose to 17 million tonnes in June from 13.6 million tonnes a year ago, but sales are limited to only a few cities as India has a shortage of natural gas, but availability should increase when two large gas fields begin production in the next five years.

The Oil Minister said that CNG is proposed to be introduced in various cities in the country in a phased manner. About 94000 vehicles in Delhi and 154000 in Bombay already run on CNG, with smaller numbers in the states of Gujarat and Andhra Pradesh.

## **Cleaner Fuels for New Zealand**

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New Zealand's Marsden Point refinery is now making 50 ppm sulfur petrol and diesel as part of the Government's strategy to reduce harmful vehicle emissions. From January 2006, diesel fuel must have no more than 50 ppm sulfur (currently 500 ppm) and all grades of petrol must have no more than 1% of benzene (down from 3%).

The refinery will lower the octane rating of premium petrol from 96 to 95, still in line with New Zealand's legal specification. 91 and 98 octane grades will remain at current octane levels. Around 40% of New Zealand's petrol is currently imported.

## **Japan proposes Fuel Efficiency Standards for Large Trucks and Buses**

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Japan has proposed fuel efficiency standards for large diesel-powered trucks and buses as part of a broader initiative to conserve energy and reduce greenhouse gas emissions to be promulgated in April 2006.

The standards would require vehicle manufacturers to improve mileage by an average 12% from 2002 levels by 2015, which is expected to be "very challenging for manufacturers" as no Japanese or foreign truck or bus makers are currently selling vehicles that can meet the standards, according to authorities.

The proposed standard for diesel vehicles between 3.5 and 7.5 tons would be 8.12 to 10.83 km/litre. Vehicles from 7.5 to 20 tons would have to achieve 4.15 to 7.24 km/litre and those heavier than 20 tons would have to reach 4.04 km/litre.

## **Over 50% of Global Automotive Capacity growth to 2012 will be in China**

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The quarterly editorial comment from PwC Autofacts says that China's automotive assembly capacity is expected to account for over 50% of the global capacity growth to 2012.

According to the forecast, global light vehicle assembly is expected to grow from 60 million units last year to over 70 million units by 2012. China's capacity to manufacture light vehicles will expand by 5 million units. India ranks third with 40% growth, behind only China and Iran.

## **GENERAL**

### **Health Effects of Particulate Air Pollution are Underestimated**

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A 20-year study of residents of Los Angeles indicates that air pollution may be a bigger health threat than previously believed. Researchers report that the contribution of particulate matter to chronic health problems may be as much as two to three times greater than current estimates.

Researchers at the University of Southern California, Los Angeles analysed two decades of data collected from nearly 23000 residents of 260 Los Angeles neighbourhoods. They found that as the number of fine particles less than 2.5 microns in diameter increased, so, too, did the risk of dying: each jump of 10  $\mu\text{g}/\text{m}^3$  meter corresponded to an 11 to 17% increase in the risk of dying from any cause. They also observed specific links between particulate matter and death from ischemic heart disease, such as heart attack, as well as lung cancers. The team's findings are published in the November issue of the journal *Epidemiology*.

In the same issue, a second group of researchers from the Keck School of Medicine of the University of Southern California reports that living close to the freeway raises a child's risk of developing asthma. Tracking the respiratory health of 208 children in 10 cities, the scientists determined that those youngsters who lived closer to highways were more likely to develop asthma.

### **Environmental Effect on Health in Europe may be greater than thought**

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Current figures show that 2 to 5% of European mortality is attributable to environmental factors. According to the European Environment Agency's (EEA) executive director Professor Jacqueline McGlade, present methods of analysis and research on links between environment and health may not be



sufficient and the impact of environment may be higher than expected. She pointed out that multi-causality and complexity are often neglected in research looking at connections between environment and health, in part due to the sheer complexity of these realities. In order to be realistic, research needs to address these complexities.

The EEA and the Commission's Joint Research Centre (JRC) will, over the next two years, conduct research on connections between environmental factors and development of particular diseases.

## **Revised Worldwide Fuel Charter**

ACEA, Alliance, EMA, JAMA and their associates on the Worldwide Fuel Charter Committee have issued a draft version 4 of the Worldwide Fuel Charter for review and comment.

The main changes for diesel are in particulate contamination limits for Category 4; sulfur contents; cetane no. and cetane index for Category 2 and 3 and a new 'non-detectable' requirement for metals content for Categories 2, 3 & 4. For gasoline the main changes are to sulfur content; a lower maximum olefins content for Category 2; reduced aromatics in 91 RON grade and a new particulates contamination size distribution limit for Categories 3 & 4.

*Note: Category 4 is the most stringent, Category 1 the least.*

## **Atmospheric Chemistry of Gasoline-Related Emissions**

The California Environmental Protection Agency's Office of Environmental Health Hazard Assessment has issued a draft report entitled "Atmospheric Chemistry of Gasoline-Related Emissions: Formation of Pollutants of Potential Concern" for public comment. The report details the results of a research effort aimed at identifying atmospheric products associated with gasoline combustion and evaporative emission that may pose a toxicological concern or may be present at relatively high levels in the atmosphere. The study also assessed the atmospheric lifetimes of gasoline-related pollutants. This research programme focused on California Phase 2 reformulated gasoline. A copy is available at: [http://www.oehha.ca.gov/public\\_info/gasemit\\_d.html](http://www.oehha.ca.gov/public_info/gasemit_d.html)

## **World CO<sub>2</sub> Emissions rose in 2004**

First estimates from the German economics institute DIW show that world energy-related CO<sub>2</sub> emissions rose by 4.5% last year, their fastest rate since 2000, but EU-15 emissions rose by only 0.7%. World emissions are now 26% above the 1990 level.

DIW's review confirms China as the main source of global emissions growth, with a 15% year-on-year

increase of an extra 579 million tonnes CO<sub>2</sub> in 2004. In the USA CO<sub>2</sub> emissions rose by 1.4%.

DIW estimates that in the EU-15, emissions of all six Kyoto greenhouse gases rose by only 0.3% in 2004 and are now 1.4% below their 1990 level compared with the Kyoto commitment to -8% by 2010. Greenhouse gas emissions from the full EU-25 in 2004 were 7.6% lower than in 1990.

## **Mike Walsh Honoured by MacArthur Fellows Grant**

The John D. and Catherine T. MacArthur Foundation has announced that the well-known emissions expert Mike Walsh has been awarded a 5 year MacArthur Fellowship (sometimes nicknamed the "genius grant") which is given to US citizens who "show exceptional merit and promise for continued and enhanced creative work".

Mike said that he had always believed that the areas in which he is working are very, very important, and that 800000 people die prematurely each year from air pollution. "But this wasn't on my radar. I'm not a genius. I'm a normal ordinary guy, that's all I am".

## **FORTHCOMING CONFERENCES**

### **2005 SAE Commercial Vehicle Engineering Congress and Exhibition**

1-3 November 2005, Chicago, Illinois, USA

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

*Sessions include Intelligent Vehicle Technology, Diesel engines – 2010, and Hybrid Vehicles.*

### **International Conference on Low Carbon Fuels – Methane and Hydrogen based Mobility**

7-8 November 2005, Dübendorf, Switzerland

Details at: [www.empa.ch/lowcarbon](http://www.empa.ch/lowcarbon)

*Papers include: The combustion of gaseous fuels in IC engines; Dedicated powertrain technology for methane powered cars; Concept of an exhaust gas aftertreatment for methane powered vehicles; and European research towards a carbon lean mobility.*

### **Clean Vehicles and Fuels European Symposium and Exhibition 2005**

8-10 November 2005, Stockholm, Sweden

Details at:

<http://www1.stocon.se/cleanvehicles/9/10334.asp>

*The symposium and exhibition creates a meeting point and marketplace where manufacturers and other promoters of clean vehicles and fuels can meet decision makers and buyers of green solutions.*

### **6th China/Asia Clean Fuels Conference + Hart's World Refining and Fuels Conference: Asia**

8-11 November 2005, Beijing, China

### **3. FAD-Konferenz: Herausforderung – Abgasnachbehandlung für Dieselmotoren** **3<sup>rd</sup> FAD Conference: Challenge – Exhaust Aftertreatment for Diesel Emission Control**

9-11 November 2005, Dresden, Germany

*Carefully selected topics will give an insight into the latest developments and trends in the field of exhaust gas aftertreatment. Conference Language is German with simultaneous German/English translation.*

### **International Conference on Gas-Fuel 05**

14-16 November 2005, Brugge, Belgium

Details at:

<https://www.ti.kviv.be/conf/Gas-Fuel%2005/index.html>

*The growing demand for energy has led to an increased market for natural gas. Simultaneously its use as a feedstock for the petrochemical industry is rapidly growing. Gas-to-liquid conversion is now a reality and research in this field is intensive. The symposium covers the general trends and European perspectives and the related research contributions with their potential for future commercial developments.*

### **IFQC Fuel Quality Policy & Technology Briefing**

17 November 2005, Vienna, Austria

Details at:

[http://www.ifqc.org/briefings/2005/2005Vienna\\_Austria\\_11\\_17.cfm](http://www.ifqc.org/briefings/2005/2005Vienna_Austria_11_17.cfm)

*The Briefing will focus on international developments in the area of conventional fuel quality from automotive to marine fuels, and will address growing interest and developments in biofuels across the globe. It is hoped to also give greater insight into fuel quality developments in the Central European region.*

### **Renewable Energies for Europe – Research in Action**

21-22 November 2005, Brussels, Belgium

Details at:

[http://europa.eu.int/comm/research/energy/gp/gp\\_events/action/article\\_2790\\_en.htm](http://europa.eu.int/comm/research/energy/gp/gp_events/action/article_2790_en.htm)

*This conference organised by DG Research aims to present the important role that renewable energy research plays in Europe. Key European success stories will be analysed, and the existing and planned European renewable energy technology platforms on PV, biofuels, and wind will be presented. The potential of the different renewable energies will be put in the wider context of the renewable energy portfolio and market conditions.*

### **Spark Ignition Engine Emissions (Short Course)**

21-25 November 2005, Leeds, UK

Details at: <http://www.leeds.ac.uk/fuel/shortc/spark.htm>

*Both 4 and 2 stroke engines are considered. Particular emphasis is placed on engine warm-up and catalyst performance and warm-up, non-regulated emissions and fuel composition influences.*

### **Euro V Diesel Powertrains - Challenges and Solutions**

24-25 November 2005, Essen, Germany

Details at <http://www.hdt-essen.de/>

*The main challenge for developers of diesel engines is compliance with emission legislation. With the announcement of the Euro 5 emission limits a further significant reduction of NOx and particulates will be required. This can only be achieved by huge efforts in all areas of powertrain development: base engine and combustion system, fuel system, aftertreatment, calibration etc. The conference will focus on actual development trends and challenges in these technical fields.*

### **Pollutec 2005**

29 November - 2 December 2005, Paris, France

More from <http://www.pollutec.com/>

### **Exhaust Systems – Experience based on using present-day low-emission systems**

1-2 February 2006, Ludwigsburg, Germany

Details at [www.abgastechnik-forum.com](http://www.abgastechnik-forum.com)

*Main topics include future prospects for minimising the emissions of spark ignition and diesel engines; emissions legislation in 2010; particulate filter solutions for active exhaust aftertreatment; the influence of fuel on emissions; challenges of HC/CI; and NOx storage catalysts.*

### **Première journée consacrée aux poids lourds propres à Paris - Organised by ADEME**

2 February 2006, Paris, France

More at [www.ademe.fr](http://www.ademe.fr) under “manifestations”

### **4th International Forum for Exhaust Gas and Particle Emissions 2006**

14-15 March 2006, Ludwigsburg, Germany

More at <http://www.forum-emissions.com/>

*At the focus will be an overview of the current state of the art, particularly regarding concepts for fulfilling the high requirements for the reduction of NO and NO<sub>2</sub> to trace levels, and the outlook regarding future concepts for systems of exhaust gas aftertreatment.*

*Another focus of the Forum will be future exhaust gas instrumentation. For measuring extremely low emissions, new instruments will be required to serve as development tools having the highest standards with regard to confidence, precision, accuracy and robustness when measuring limited and non-limited exhaust gas components. Future trends and*

*developments in the field of exhaust gas and particle instrumentation will be presented.*

### **2006 SAE World Congress**

3-7 April 2006, Detroit, Michigan, USA

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

### **27th International Vienna Motor Symposium**

27-28 April 2006, Vienna, Austria

### **Engine Expo 2006**

9-11 May 2006, Stuttgart, Germany

### **Hart World Refining & Fuels Conference**

9-11 May 2006, Brussels, Belgium

*Topics will include Energy Trends & Developments in Asia, Russia, Africa/Middle East, New EU 25 Fuel Policy Developments, Progress on Central & Eastern European Regional Implementation of Fuel Quality Policy, Options to Meet the EU's Diesel Shortage, The Latest on Automotive Emissions Policy & Technology Trends, and Euro 5, CARS 21 & Predicted Fuel Policy Outcomes.*

### **World Hydrogen Energy Forum & Exhibition (HyTech 2006)**

16-18 May 2006, Beijing, China

*Covers both hydrogen fuel cells and Hydrogen ICEs.*

### **3. Emission Control in Dresden**

18-19 May 2006, Dresden, Germany

### **8th Highway and Urban Environment Symposium**

11-14 June 2006, Nicosia, Cyprus

Details at: <http://www.ags.chalmers.se/hues/>

*The aim of the symposium is to provide a forum for recent research and development on all aspects of the highway and/or urban environment. Organisers: Chalmers University of Technology, Sweden; the Cyprus Institute, Cyprus.*

### **2<sup>nd</sup> International Symposium 'Environment & Transport' including 15<sup>th</sup> Conference on Transport and Air Pollution**

12-14 June 2006, Reims, France

Details at:

<http://www.inrets.fr/services/manif/env-trp2006/index.e.html>

*The themes will be evolution of transport systems, perception of the environment, the impact of transport on populations and ecosystems, the place of the environment in the concept of sustainable development, methods of evaluation, control methodologies and political scenarios for transport.*

### **10th ETH Conference on Combustion Generated Nanoparticles**

21-23 August 2006, Zurich, Switzerland

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

30 August - 1 September 2006, Brussels, Belgium

Extended abstracts to ULB by 1 December 2005:

Details at:

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

*All topics related to applications and requirements of catalysis in automotive emissions control will be considered: catalyst technologies (TWC, lean burn of gasoline and diesel, cold start emissions); fuel cell catalysis; materials for catalysts, washcoats and fuel-borne catalysts; particulate emission control; NOx emission control under lean conditions; modelling of aftertreatment systems; unregulated pollutants; integrated emission control systems, onboard diagnostics; alternative fuel technologies and innovative technologies (new materials, recovery of precious metals, sensors).*

### **2<sup>nd</sup> Advanced Powertrain Control Symposium**

September 2006, Birmingham, UK

Details from: [enquiries@tic.ac.uk](mailto:enquiries@tic.ac.uk)

### **FISITA World Automotive Congress 2006**

22-27 October 2006, Yokohama, Japan

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