

N AECC Newsletter

Association for Emissions Control by Catalyst
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Affiliated to CEFIC

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INTERNATIONAL REGULATORY DEVELOPMENTS

Table of Contents

EUROPE	2
1. EU Commission proposes introduction of "Zero Sulphur" Petrol and Diesel.....	2
2. Commission launches Clean Air for Europe Programme	2
3. Poland scales back on Environment Demands in EU Talks	3
4. UK cuts Ultra Low Sulphur Fuel Tax	3
5. New EU Directive to improve Motor Vehicle Emission Control	4
NORTH AMERICA	4
6. Supreme Court Upholds National Air Quality Standards (NAAQS)	4
7. Navistar certifies first Heavy Duty Diesel Particulate Filter.....	5
8. EPA holds Public Workshop on the 1998 Agreement on Global Technical Regulations	5
9. US Transportation Secretary wants authority to set Fuel Economy Standards.....	6
10. Bush Budget Proposal cuts Environment Funding by \$2.3 Billion	6
11. New York City to Clean Up Garbage Truck Emissions	6
ASIA-PACIFIC REGION	6
12. Recent Developments in Japan	6
FORTHCOMING CONFERENCES	8

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EUROPE

1. EU Commission proposes introduction of "Zero Sulphur" Petrol and Diesel

The European Commission has adopted a proposal* to introduce sulphur-free (<10 ppm) petrol and diesel in every Member State from 1 January 2005. Although sulphur-free petrol's share of the market is only likely to be "a couple of percent" in 2005, this should grow quickly until all cars run on it by 2011, when petrol and diesel fuels "with a sulphur content" are proposed to be banned from the EU market.

In their statement the Commission said the fuels would speed the introduction of the latest fuel-efficient technologies in cars and other vehicles, significantly reducing emissions of carbon dioxide. From 2011, the use of zero sulphur petrol will be mandatory. The date for zero sulphur diesel fuel becoming mandatory will be confirmed as part of a later review by 2006.

The Commission said the new fuels would considerably reduce emissions of air pollutants from older vehicles and help improve air quality. Environment Commissioner Margot Wallström said: "This is a good day for the environment. The availability of sulphur-free fuels will remove an important technical barrier to the introduction of the most advanced fuel-

efficient vehicles. We can now expect significant reductions in emissions of carbon dioxide from new cars, vans, trucks and buses. In addition, these fuels will help clean up the emissions of older more polluting vehicles as the catalytic devices fitted in these vehicles will also operate more effectively and improve air quality for people throughout the EU".

The Commission stressed that sulphur in petrol and diesel degraded the performance of both new and existing exhaust treatment devices such as catalytic converters and would enable new automotive technologies to be optimised further, leading to significant reductions in CO₂.

The fuel economy improvements of new vehicles are expected to be greater than the increase in emissions of CO₂ at refineries, particularly given recent advances in refinery de-sulphurisation processes. However, the information regarding the de-sulphurisation of diesel fuel and the expected fuel economy improvements of new diesel vehicles are less certain than for petrol. Hence the end date for full introduction of zero sulphur diesel will be confirmed in the later review in order to ensure that there is no overall increase in greenhouse gas emissions.

2. Commission launches Clean Air for Europe Programme

The Clean Air for Europe (CAFÉ) programme was adopted by the European Commission at the beginning of May and aims to improve the quality of life of European citizens by leading to an integrated

* Commission Proposal (COM)2001/241 Final for a Directive of the European Parliament and the Council on the quality of petrol and diesel fuels amending Directive 98/70/EC

strategy to effectively combat air pollution. It would come as a major addition to the legislative initiatives already in place for tackling this problem.

The Commission recommends adoption of this strategy in 2004, when many European directives on air quality come up for review. A programme integrating all the work in progress in an overall strategy is, it believes, the best way to prepare this exercise. CAFÉ would serve as a framework for setting new air quality standards at EU level, national emissions ceilings and for the collection and the presentation of the scientific and technical information on the effects of pollution, emission inventories & projections and cost-effectiveness studies for potential abatement measures.

Particulate matter and ground-level ozone are considered as the most harmful pollutants because of their harmful effects on the environment through climate change and on human health.

The main elements of the strategy that it sets in place are:

- an in-depth review of the adequacy and effectiveness of existing legislation
- detailed public air quality information
- analysis of the further emission reduction measures that will be required to meet air quality objectives
- proposals concerning new or revised directives on air quality and national emission ceilings
- a status report on measures and their further development to reduce emissions

from sources, such as large combustion plants and motor vehicles.

The Auto-Oil II programme showed that policy for improving ambient air quality had largely borne fruit in terms of benefits for human health and the environment, but that it is necessary to go further.

3. Poland scales back on Environment Demands in EU Talks

Poland has scaled back demands for lengthy transition periods in adjusting its environment to European Union standards in a bid to keep its entry talks on track, the country's chief negotiator recently indicated. Poland, the largest East European state seeking EU entry, dropped six out of 14 demands for a delay in implementing strict European environmental standards but kept transition period requests in the most expensive areas. Poland, which seeks EU entry by 2003, dropped a call to be allowed a 10-year delay in meeting EU regulations on municipal waste disposal and hazardous waste. It also gave up a four-year delay request on meeting petrol and diesel fuel quality norms.

4. UK cuts Ultra Low Sulphur Fuel Tax

Confirming plans announced in November, UK Chancellor of the Exchequer Gordon Brown cut duties on ultra low sulphur petrol by two pence a litre and on ultra low sulphur diesel by three pence.

5. New EU Directive to improve Motor Vehicle Emission Control

The European Commission has adopted a Directive* amending the Heavy Duty Diesel (HDD) emissions Directive 88/77/EEC, (last amended in 1999 as Directive 99/96/EC).

The new Directive contains provisions intended to help step up the fight against the use of invalidation devices, described as “vehicle engine components that alter the functioning of emission control systems, reducing their efficiency when vehicles are used under normal driving conditions” and “irrational” emission control strategies, described as “devices reducing the efficiency of emission control systems when vehicles operate under normal driving conditions to levels below those determined during the emission testing procedure”. Manufacturers now have to provide detailed information justifying the use in specific operating conditions of all measures that might be considered invalidation mechanisms or irrational emission control strategies.

The new Directive also covers the certification of gas engines with new testing validity criteria to cover their different dynamic response to that of diesel engines. This addresses the problem that gas engines

* Commission Directive 2001/27/EC of 10 April 2001 adapting to technical progress Council Directive 88/77/EEC on the approximation of the laws of the Member States relating to measures to be taken against the emission of gaseous and particulate pollutants from compression-ignition engines for use in vehicles, and the emission of gaseous pollutants from positive-ignition engines fuelled with natural gas or liquefied petroleum gas for use in vehicles.

are difficult to run on the ETC. It also introduces a new definition of the reference fuels for engines running on natural gas (NG) and liquefied petroleum gas (LPG), to the range of compositions of gaseous fuel available on the market. Finally, a new Annex VIII outlines the specific characteristics applicable to the type-approval testing of ethanol-powered vehicles.

NORTH AMERICA

6. Supreme Court Upholds National Air Quality Standards (NAAQS)

In one of the most important environmental and business decisions in decades, a unanimous US Supreme Court upheld how the federal government sets air pollution standards, rejecting industry arguments that costs, instead of just health benefits, must be considered. The nation's high court also said in the landmark ruling that the US Environmental Protection Agency (EPA) did not usurp lawmaking power from Congress when it set the strict standards for ozone and soot in 1997.

But in a third part of the ruling, the court said the EPA's implementation policy for the ozone standard was unlawful, and that the agency must develop a reasonable interpretation.

The air standards limit the allowable level of ozone, an essential part of smog, to 0.08 parts per million (ppm), instead of the 0.12 ppm under the old rules.

US States for the first time must regulate microscopic particulates, or soot, from power plants, cars and other sources down to 2.5 microns (PM 2.5).

7. Navistar certifies first Heavy Duty Diesel Particulate Filter

International Truck and Engine Corporation (Navistar) received emission certification for an engine equipped with a diesel particulate filter (DPF). The US EPA and the California ARB certified the package, including a Navistar 530 cu.in., 275 hp engine fitted with a catalysed particulate filter.

This is the first emission certification worldwide of a heavy-duty diesel engine equipped with a DPF. The US2007 emission standards are expected to require particulate filters on all HDD engines.

The engine is certified at a PM level of 0.01 g/bhp-hr (the US2007 standard). NOx emissions were measured at 3.0 g/bhp-hr.

Navistar has conducted extensive field-testing of DPF-fitted engines, which demonstrated proper regeneration and no increased backpressure levels. The company says it is very confident with the performance and durability of the engine/DPF package. As a maintenance procedure, Navistar recommends that the filter be cleaned from accumulated lube oil ash once per year.

The certified package is part of the "Green Diesel" technology marketed by Navistar for school buses and other heavy-duty applications, primarily in California. The DPF-fitted engine is to be operated on a 15

ppm ultra low sulphur diesel fuel.

8. EPA holds Public Workshop on the 1998 Agreement on Global Technical Regulations

EPA held a public workshop on 19 March in Washington, DC as part of a process to educate interested stakeholders concerning its participation in the United Nations/Economic Commission for Europe (UN ECE), World Forum for Harmonization of Vehicle Regulations (WP.29). EPA is also soliciting public comments on the development of regulations under the 1998 Agreement concerning the Establishment of Global Technical Regulations for Wheeled Vehicles, Equipment and Parts (Global Agreement).

EPA has proposed submitting the LDV Tier 2 programme, the 2007 on-road heavy-duty engine standards, the LDV OBD programme, and the CAP 2000 LDV certification/in-use verification programme to add to the Regulations. The Regulations are intended to provide examples of mobile source regulatory programmes for individual countries looking to establish regulatory programmes for specific categories of mobile source regulations. EPA also identified several areas as priorities for consideration under the Global Agreement, including:

- worldwide on-road HDD test cycle
- worldwide motorcycle test procedure
- global OBD/in-use emission performance evaluation procedures
- test procedures to measure the emission performance of fuel cell vehicles.

9. US Transportation Secretary wants authority to set Fuel Economy Standards

Transportation Secretary Norman Mineta said that Congress should release its six-year freeze on auto fuel efficiency standards and return authority to his agency. For most of the Clinton years, the Republican-controlled Congress prevented the Transportation Department from even studying an increase in national fuel efficiency standards, which are set at 27.5 miles per gallon for cars and 20.7 miles per gallon for light trucks, which include sports utility vehicles and minivans.

Mineta favours some kind of a government-imposed fuel efficiency minimum. However he did not elaborate on what the numbers should be.

10. Bush Budget Proposal cuts Environment Funding by \$2.3 Billion

Federal funding for an array of environmental programmes in fiscal 2002 would shrink by about \$2.3 billion under the budget proposal US President Bush submitted to Congress. Bush is requesting \$26.4 billion for federal natural resources and environment programmes for the fiscal year that begins 1 October 2001, down from the \$28.7 billion that was planned for the current fiscal year. Among the federal programmes included are clean air and clean water protections, and research on global warming. The budget would however prohibit the US from spending any money to implement the 1997 Kyoto treaty.

A last-minute decision could knock as much as \$39 million out of the Partnership for New Generation Vehicles (PNGV) with Detroit's Big Three automakers and truck manufacturers seeking breakthroughs in producing cleaner, more efficient cars and trucks. Funding drops by 28 percent.

11. New York City to Clean Up Garbage Truck Emissions

The New York Department of Sanitation is launching a programme to reduce pollution from up to 260 of its diesel-burning garbage trucks over the next three years. The programme, which results from the \$1 billion 1998 settlement between the Department of Justice and diesel engine manufacturers, is aimed at cutting carbon particles from diesels. The programme intends to reduce these particle emissions from the truck engines by about 90 percent.

The NYC DOS will use low sulphur diesel and 10 garbage trucks will be fitted with particulate emissions control devices.

ASIA-PACIFIC REGION

12. Recent Developments in Japan

At both the national and municipal level, there remains very strong pressure to dramatically reduce particulate emissions and efforts are therefore underway at both levels.

Tokyo Metropolitan Government (TMG) Programme

Tokyo remains committed to cleaning up or eliminating their diesel vehicles. Two major efforts are underway – one focused on

retrofitting existing vehicles and one focused on eliminating the oldest vehicles.

Retrofit Programme

Tokyo has been working with two main suppliers at this point.

Twenty-two examples of one system were put in service operating on fuel with approximately 350 ppm sulphur. Based on the initial results, a modified system was developed and installed on a small number of vehicles. From 1 April all the fuel used in these vehicles switched to 50 ppm sulphur.

Another supplier has placed six systems in

operation and other systems are also emerging.

Low sulphur diesel fuel, 50 ppm maximum, is becoming widely available.

TMG In Use Vehicle Standards

TMG has adopted a prohibition against driving diesel vehicles that do not satisfy Tokyo emission standards for PM (see Table below). This will essentially require existing vehicles to install diesel particulate filters (DPF).

Vehicle type	Testing mode	Emission standards	
		From: Oct 2003	
		To: 2005	From 2005
Diesel Vehicles --GVW 1700kg or less	10-15 mode	0.08g/ km	0.052g/km
Diesel Vehicles --GVW from 1701 to 2500kg	10-15 mode	0.09g/km	0.06g/km
Diesel Vehicles --GVW more than 2500kg	Diesel 13 mode	0.25g/kg	0.18g/km

Essentially, this programme is intended to force all pre-1989 model year diesel vehicles off Tokyo's roads. According to the national NOx law, these vehicles cannot be used after 2005. With the new Tokyo programme, they will require a retrofit system in 2003 if they wish to survive until 2005. After 2005, the Tokyo standards are intended to require retrofit DPFs on all in use diesel vehicles.

National Programme

At the national level two developments are emerging – the accelerated introduction of the “long term standards” and low sulphur fuel and modification of the so-called NOx law.

Tighter Standards and Low Sulphur Fuel

As previously announced, the government will require all diesel fuel to be less than 50

ppm sulphur by the end of 2004 and all new vehicles starting in 2005 to meet PM standards at least 50% lower than previously adopted. The clear intention is that all new diesel vehicles sold after 2004 will be equipped with a diesel particulate filter.

Modification of the NOx Law

The NOx law has been in effect for over a decade and it essentially prohibits the use of older trucks in the highly polluted areas of Tokyo and Osaka. This law will now be modified and expanded to include PM control. In summary, in Osaka and Tokyo, the NOx restriction will be expanded to include passenger cars as well as trucks. Further and more importantly a new PM provision will be added for the cities of Nagoya, Tokyo and Osaka. All vehicles under 3.5 tons sold in these cities must meet the "most stringent" available standards. If this provision is interpreted to mean that diesel vehicles must meet gasoline standards that will effectively ban light duty diesels.

FORTHCOMING CONFERENCES

"EAEC European Automotive Congress – Europe & the Second Century of Auto-Mobility"

18-20 June 2001, Bratislava, Slovakia

Details from: SIA, Tel: +33 1 41 93 70, Fax: +33 1 41 93 79.

<http://www.saits.sjf.stuba.sk/>

6th Italian Seminar on Catalysts "Fundamentals and Application to Environmental Problems"

18-23 June 2001, Grado, Italy

Details on <http://www.dschi.univ.trieste.it/>

"Engine 2001 Conference"

19-21 June 2001, Messe Stuttgart

Details from

<http://www.ukintpress.com/engine/expo> or from Mark Fenner on Tel: +44 1306 877411 or Email <mailto:expo@ukintpress.com>

Sessions include "Emissions control: Euro IV and beyond – 21st century catalytic converters, NOx traps, particulate control...."

5th Automotive News Conference

24-26 June 2001, Hilton Hotel, Prague

Details and registration:

<http://www.networkevents.co.uk/events/index.htm>

"SIMEA 2001"

26-28 June 2001, São Paulo, Brazil

Details from AEA Brazil, Email:

simea@aea.org.br Web: www.aea.org.br

Covers wide range of automotive topics including emissions.

"World Bus & Clean Fuel Exp 2001"

31 July-2 August 2001, San Diego

Details from: <http://www.iqpc.com/1575a>

"Hart World Fuels Conference" – Latin America & Caribbean

13-15 August 2001, Rio de Janeiro, Brazil

Details on: www.chemweek.com

2001 SAE Future Transportation Technology Conference

20-22 August 2001, Hilton-Costa Mesa, California

Details from:

<http://www.sae.org/calendar/ft/cfp01.pdf>

Seventh Grove Fuel Cell Symposium

11-13 September 2001, QE II Conference Centre, London

Details on: www.grovefuelcell.com

“Prosper 2001” – International Congress on innovation in urban passenger transit systems aimed at energy saving and environmental improvement

19-20 September 2001, Karlsruhe, Germany

Details of Congress on www.prosper.ttk.de .
Call for papers Email
Colin.Jefferson@uwe.ac.uk

Topics include hybrids, low and zero emission systems, clean and fuel efficient engines and fuel cells.

MACC 2001 “Material Aspects in Catalytic Converters”

3-4 October 2001, ICM, Munich

Details on www.macc.dgm.de

Covers all material aspects of performance and life of catalytic converters.

International Commercial Powertrain Conference “Synergy for Progress”

18-19 October 2001, Academy of Sciences, Budapest

Details from AVL, Fax: +43 316 351314,
Email: event@avl.com

SAE International Truck & Bus Meeting & Exhibition

12-14 November 2001, Chicago

Details on www.sae.org/truck

Covers emission testing and control.

“Spark Ignition Engine, Transmissions, Hybrid Applications: New Developments?”

13-14 November 2001, Paris

Details from SIA on: www.sia.fr

Covers emission topics. Call for papers – responses due by 18 June

3rd International Conference on Health Effects of Vehicle Emissions

28-28 November 2001, Hilton Birmingham Metropole, NEC Birmingham, UK

Information from Frances Webb, PennWell Global Energy Group, Tel: + 44(0) 1628 810562, Fax: + 44(0) 1628 810762, Email: francesw@pennwell.com

“FISITA 2002 – World Automotive Congress”

2-7 June 2002, Helsinki

Details from FISITA on:
www.fisita2002.com

Congress themes include The Environment, New Generation of Vehicles and Policy & Regulation.