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REQUEST TO LIST IN THE COMPENDIUM OF CANDIDATE GLOBAL TECHNICAL REGULATIONS (COMPENDIUM OF CANDIDATES) THE UNITED STATES OF AMERICA ENVIRONMENTAL PROTECTION AGENCY PROGRAMME FOR CLEANER HEAVY-DUTY ENGINE AND VEHICLE STANDARDS AND HIGHWAY DIESEL FUEL SULPHUR CONTROL (CLEAN DIESEL TRUCKS AND BUSES RULE)

Transmitted by the representative of the United States of America

Note: The document reproduced below is submitted by the United States of America to the Executive Committee (AC.3) for consideration. It contains a request to include in the Compendium of Candidates the Tier 2 Programme. The document is based on informal document No. WP.29-134-18-Rev.1 (TRANS/WP.29/1037, paras. 111 and 113). In order to be considered by AC.3, this request shall be completed with a copy of the regulations mentioned (see Article 5, paras. 5.2.1., 5.2.1.1. and 5.2.2. of the 1998 Agreement).

GE.04-24901

United States of America Environmental Protection Agency Programme for Cleaner Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulphur Control (Clean Diesel Trucks and Buses Rule)

The United States of America Environmental Protection Agency (EPA) has established a comprehensive national control programme that will regulate the heavy-duty vehicle and its fuel as a single system. As part of this programme, new emission standards will take effect in model year 2007 and will apply to heavy-duty highway engines and vehicles, which are mainly found in commercial applications on trucks and buses. These standards are based on the use of high-efficiency catalytic exhaust emission control devices or comparably effective advanced technologies.

Because these devices are damaged by sulphur in fuel, the level of sulphur in highway diesel fuel is being reduced by 97 per cent by mid-2006. The programme provides substantial flexibility for refiners and for manufacturers of engines and vehicles, to aid them in implementing the new requirements in the most cost-efficient manner.

The public health and welfare benefits of this programme are estimated to be over $70 billion dollars a year when the programme is fully implemented, as compared to annual costs of about $4 billion.

Background

The pollution emitted by diesel engines contributes greatly to air quality problems. These engines will continue to emit large amounts of oxides of nitrogen (NOx) and particulate matter (PM), both of which contribute to serious public health problems in the United States of America. Exposure is widespread, particularly in urban areas.

Diesel exhaust or diesel particulate matter (soot) is likely to cause lung cancer in humans. Other health effects include aggravation of respiratory and cardiovascular disease, aggravation of existing asthma, acute respiratory symptoms, chronic bronchitis, and decreased lung function. This programme will result in PM and NOx emission levels that are 90 per cent and 95 per cent below requirements currently applicable in the United States of America.

The results of this historic programme are comparable to the advent of the catalytic converter on cars, as the standards will for the first time result in the widespread introduction of exhaust emission control devices (catalyzed particulate filters and NOx absorber catalysts) on diesel engines. And, just as removing lead from gasoline enables the use of catalytic converters, this programme removes sulphur from diesel fuel to enable the use of these advanced emission controls on diesel vehicles.

New Standards for Heavy-Duty Highway Engines and Vehicles

This programme puts in place a PM emissions standard for new heavy-duty engines used in trucks and buses of 0.01 grams per brake-horsepower (g/bhp-hr), to take full effect for diesels in the 2007 model year. It also includes standards for NOx and non-methane hydrocarbons (NMHC) of

0.20 g/bhp-hr and 0.14 g/bhp-hr, respectively. These NOx and NMHC standards will be phased in together between 2007 and 2010, for diesel engines.

Gasoline engines will be subject to these standards, with the requirements being phased in during the 2008 and 2009 model years.

The programme includes flexibility provisions to facilitate the transition to the new standards and to encourage the early introduction of clean technologies, and adjustments to various testing and compliance requirements to address differences between the new technologies and existing engine-based technologies.

New Standards for Diesel Fuel

Refiners will be required to start producing diesel fuel for use in highway vehicles with a sulphur content of no more than 15 parts per million (ppm), beginning 1 June 2006. The programme includes a combination of flexibilities available to refiners to ensure a smooth transition to low sulphur highway diesel fuel. The United States of America is providing additional hardship provisions for small refiners to minimize the economic burden in complying with the 15 ppm sulphur standard. The United States of America is also adopting a general hardship provision for which any refiner may apply on a case-by-case basis under certain conditions.

Flexibility to Industry

EPA worked extensively with the auto industry, the petroleum industry, States, and environmental and public health groups in developing this programme. EPA included several measures in the rule that will ensure flexibility and cost-effectiveness for the heavy-duty engine and vehicle manufacturers and petroleum industries. These flexibilities include:

1. establishing a credit system for engine manufacturers which will reward those companies who lead the way in reducing pollution sooner than required;
2. providing significant lead time for industry to plan for development of new compliant products and
3. providing small refiners with extra time to meet the sulphur standards.

Health and Environmental Benefits

The new standards will result in substantial benefits to the public health and welfare through significant annual reductions in emissions of NOx, PM, NMHC, carbon monoxide, sulphur dioxide, and air toxics. The clean air impact of this programme will be dramatic when fully implemented. These emission reductions will annually prevent 8,300 premature deaths, more than 9,500 hospitalizations, and 1.5 million work days lost as just some of the quantified benefits.

As a result of this programme, each new truck and bus will be more than 90 percent cleaner than current U.S. models. In the United States, this programme will achieve a 2.6 million ton reduction in NOx emissions in 2030 when the current heavy-duty vehicle fleet is completely replaced with newer heavy-duty vehicles that comply with these standards. By 2030, this programme will reduce annual emissions of NMHC by 115,000 tons and PM by 109,000 tons.

Ozone, which is formed from NOx and NMHC, causes a range of health problems related to breathing, including chest pain, coughing, and shortness of breath. PM is deposited deep in the

lungs and causes premature death, increased emergency room visits, and increased respiratory symptoms and disease. With both ozone and PM, children and the elderly are most at risk. In addition, ozone, NOx, and PM adversely affect the environment in various ways, including crop damage, acid rain, and visibility impairment.

Costs of the Programme

EPA estimates that the emission reductions and the resulting significant public health and environmental benefits of this programme will come at an average cost increase of approximately $1,200 to $1,900 per new vehicle, depending on the vehicle size. When fully implemented, the sulphur reduction requirement will increase the cost of producing and distributing diesel fuel by about 4 ½ to 5 cents per gallon. The long-term cost effectiveness is estimated to be approximately $1,600/ton of NOx + NMHC and $4,700/ton of PM.

Preamble and Regulatory Text

The preamble and regulatory text for this programme can be found in the files below. They are also accessible through the web site shown in the "For More Information" section below.

http://www.epa.gov/otaq/regs/hd2007/frm/frdslpre.txt
http://www.epa.gov/otaq/regs/hd2007/frm/frdslreg.txt

For More Information

The final rule and related documents can be accessed electronically on the Office of Transportation and Air Quality web site at:

http://www.epa.gov/otaq/diesel.htm

The 2007 Clean Diesel programme is part of EPA's overall mobile source control programme. For information about related subjects, such as engine certification requirements, see www.epa.gov/otaq.
