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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 VEHICLES AND CLEANER GASOLINE (TIER 2 PROGRAMME)

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.29-134-19 (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).

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<http://www.unece.org/trans/main/welcwp29.htm>

United States of America Environmental Protection Agency's Programme for Cleaner Vehicles and Cleaner Gasoline (Tier 2 Programme)

EPA's Tier 2 programme is the most protective set of tailpipe emission standards for all passenger vehicles, including sport utility vehicles (SUVs), minivans, vans, and pick-up trucks. This regulation marks the first time in the United States of America that SUVs and other light-duty trucks – even the largest passenger vehicles – are subject to the same national pollution standards as cars. And for the first time, United States of America is treating vehicles and fuels as a system. These technology-forcing regulations are also fuel neutral. The public health and welfare benefits of the programme are estimated to be more than five times the expected costs.

A critical part of this programme is lower standards for sulphur in gasoline, which will ensure the effectiveness of low-emission control technologies in vehicles and reduce harmful air pollution. These new standards require passenger vehicles to be 77 to 95 per cent cleaner than those on the road in 2003 and reduce the sulphur content of gasoline by up to 90 per cent.

New Tailpipe Emission Standards

The tailpipe standards are set at an average standard of 0.07 grams per mile (g/mi) for nitrogen oxides (NO_x) for all classes of passenger vehicles beginning in 2004. This includes all light-duty trucks, as well as the largest SUVs. Vehicles weighing less than 6000 pounds will be phased-in to this standard between 2004 and 2007.

For the heaviest light-duty trucks, the programme provides a three-step approach to reducing emissions. First, in 2004, standards not to exceed 0.6 g/mi NO_x are implemented. Second, to further ensure progress, these vehicles are required to achieve an interim standard of 0.2 g/mi NO_x to be phased in between 2004 and 2007. Third, in the final step, half of these vehicles will meet the 0.7 g/mi NO_x standard in 2008, and the remaining will comply in 2009. Vehicles weighing between 8,500 – 10,000 pounds will have the option to take advantage of additional flexibilities during the 2004 to 2008 interim period.

Overall, the final emissions requirements for Tier 2 vehicles are found in the table below. Manufacturers have the option to produce different vehicles to meet any one of the set of emission standards (a "bin") as long as the manufacturer's overall yearly production also meets the "corporate average" emission standard of 0.07 g/mi NO_x.

Tier 2 Final Exhaust Emission Standards

Bin No.	NO _x	NMOG	CO	HCHO	PM
8	0.20	0.125/0.156	4.2	0.018	0.02
7	0.15	0.090	4.2	0.018	0.02
6	0.10	0.090	4.2	0.018	0.01
5	0.07	0.090	4.2	0.018	0.01
4	0.04	0.070	2.1	0.011	0.01
3	0.03	0.055	2.1	0.011	0.01
2	0.02	0.010	2.1	0.004	0.01
1	0.0	0.0	0.0	0.0	0.0

New Gasoline Sulphur Standards

Beginning in 2004, refiners and importers of gasoline will have the flexibility to manufacture gasoline with a range of sulphur levels as long as all of their production is capped at 300 parts per million (ppm) and their annual corporate average sulphur levels are 120 ppm. In 2005, the refinery average will be set at 30 ppm, with a corporate average of 90 ppm and a cap of 300 ppm. Both of the average standards can be met with use of credits generated by other refiners who reduce sulphur levels early. Finally, in 2006, refiners will meet a 30 ppm average sulphur level with a maximum cap of 80 ppm.

Small refiners (those who employ no more than 1,500 employees and have a corporate crude oil capacity of no more than 155,000 barrels per day) will be able to comply with less stringent interim standards through 2007, when they must meet the final sulphur standards. If necessary, small refiners that demonstrate a severe economic hardship can apply for an additional extension of up to two years.

Health and Environmental Benefits

The new standards will result in substantial benefits to the public health and welfare through significant annual reductions of millions of tons in emissions of NO_x, particulate matter (PM), non-methane organic gases (NMOG), carbon monoxide (CO), sulphur dioxide, and air toxics. The clean air impact of this programme will be dramatic when fully implemented. Annual health and environmental benefits per year are estimated to be over \$25 billion. EPA calculates that the final rule will prevent as many as 4,300 deaths, more than 10,000 cases of chronic and acute bronchitis, and tens of thousands of respiratory problems a year.

Ozone, which is generally formed from NO_x and NMOG, 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, NO_x, and PM adversely affect the environment in various ways, including crop damage, acid rain, and visibility impairment.

Costs of the Programme

The significant environmental benefits of this programme would come to an approximate cost to consumers of less than \$100 per car, \$200 for light-duty trucks and less than two cents per gallon of gas.

EPA estimates the programme will cost industry about \$5.3 billion annually when the programme is fully implemented.

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 automobile and petroleum industries. These flexibilities include:

1. establishing a market-based credit system for both the auto and oil industries which will reward those companies who lead the way in reducing pollution sooner than required;
2. allowing industries to use an averaging programme to meet both the car emission and gasoline sulphur standards;
3. allowing auto manufacturers and refiners to meet strong interim standards while they work towards full compliance of the new standards; and
4. providing small refiners with extra time to meet the sulphur standards.

Background

This regulation grows out of a United States Clean Air Act requirement that EPA consider the need, feasibility, and cost-effectiveness of stronger tailpipe emissions standards beginning in 2004. In 1998, EPA reported that the United States faced significant air quality challenges in the future relating to vehicles, including:

- Total vehicle miles travelled yearly grew from one trillion in 1970 to 2.5 trillion in 1997 and is expected to continue increasing at the rate of two to three per cent each year.
- Almost half of the passenger vehicles sold today are higher-polluting light-duty trucks, such as SUVs, and continued sales growth is expected.

EPA concluded that tighter tailpipe emission standards are necessary to maintain the nation's progress in providing Americans with cleaner, healthier air. The Agency also concluded that new emission standards could be achieved cost-effectively with available technology, and that current levels of sulphur in gasoline must be reduced, because sulphur impedes the performance of catalytic converters.

Motor vehicles generate about 30 per cent of all emissions of nitrogen oxides and volatile organic compounds – the pollution that causes smog.

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/fedrgstr/EPA-AIR/2000/February/Day-10/a19a.htm>

<http://www.epa.gov/fedrgstr/EPA-AIR/2000/February/Day-10/a19b.htm>

<http://www.epa.gov/fedrgstr/EPA-AIR/2000/February/Day-10/a19c.htm>

<http://www.epa.gov/fedrgstr/EPA-AIR/2000/February/Day-10/a19d.htm>

For More Information

Additional documents, including other documents such as the Regulatory Impact Analysis and various Technical Support Documents, can be found at

<http://www.epa.gov/otaq/regs/ld-hwy/tier-2/finalrule.htm>.

The Tier 2 programme is part of EPA's overall mobile source control programme. For information about related subjects, such as vehicle certification requirements, see www.epa.gov/otaq.
