

Technical Policy on the Prevention and Control of Pollution by Motor Vehicle Emissions

(Promulgated by the State Environmental Protection Administration, the Ministry of Science and Technology, and the National Machinery and Industry Bureau on May 28, 1999)

1. General Principles and Objectives of Control

1.1 Pursuant to the Law of the People's Republic of China on the Prevention and Control of Air Pollution, this Technical Policy is formulated for the protection of the air environment and the prevention and control of pollution by motor vehicle emissions.

1.2 This Technical Policy is applicable to all newly produced automobiles (including diesel motor vehicles), motorcycles (including auxiliary motor vehicles), and motor vehicle engine products within the territory of the People's Republic of China, and all automobiles (including diesel motor vehicles) and motorcycles (including auxiliary motor vehicles) currently in use within the territory of the People's Republic of China.

1.3 Besides the CO, HC and NO_x pollution caused by motor vehicle emissions, diesel motor vehicles also emit carcinogenic particles. More than this, Freon used in automobile air conditioners is the major substance that damages the ozone layer in the stratosphere. Therefore, for motor vehicles, the emission of CO, HC, NO_x and particles from diesel motor vehicles shall be reduced together, and Freon used in automobile air conditioners shall be gradually replaced.

1.4 Automobiles, motorcycles and engine products for automobile vehicle use shall evolve in the direction of low pollution and low energy consumption.

1.5 By 2000, the emission control standards for saloon cars shall be up to that of the first stage in Europe; for other light automobiles (including diesel motor vehicles) that have passed model authentication and with a maximum gross mass of 3.5 Tons or less, the emission control standards shall be up to that of the first stage in Europe after 2000; for all light automobiles (including saloon cars), the emission control standards shall be up to that of the second stage in Europe around 2004 and, shall keep up with the international emission control standards around 2010; for heavy automobiles (with a maximum gross mass over 3.5 Tons) and motorcycles, the emission control standards shall be up to that of the first stage in Europe around 2001, and for diesel motor vehicles, the emission control standards shall be up to that of the second stage in Europe around 2005 and shall keep up with the international emission control standards around 2010.

1.6 Pursuant to the sketch of China's long-range objectives of environmental protection, the major cities shall reach the level two of the national air environmental quality standards. In order to improve the air quality in cities in a short time, based on the contribution rate of the cities to air pollution, besides the control of the emission of fixed pollution sources, the control of movable pollution sources shall be strengthened. Since the majority of the motor vehicles concentrate in cities, emission pollution by motor vehicles in cities shall be expressly controlled.

2. Newly Produced Automobiles, Motorcycles and Engine Products

2.1 The emission standards of new model products manufactured by automobile and motorcycle manufacturers shall constantly meet the requirements of the national standards. New model products that fail to meet the requirements of the national standards shall not be manufactured, sold, registered or used.

2.2 Automobile, motorcycle and engine manufacturers shall incorporate into their quality guarantee system contents of emission performance and durability control based on the requirements of the national emission standards for the consistence of production, and shall strengthen the management of the emission performance of their products in the stages of products development, production quality control, after service, etc, so that the emission performance of their products will constantly meet the requirements of the national standards within the terms of service stipulated by the state.

2.3 Automobile, motorcycle and engine manufacturers shall, in the specification of their products, expressly provide contents on the maintenance of the emission performance, and elaborate on precautions in the use of the vehicles, items of routine maintenance, replacement cycle of the components, operational rules in the maintenance, and the providers and brands of the replacement parts acknowledged by the manufacturers, etc. so as to provide technical support for the inspection and maintenance (I/M) system of automobiles in use.

2.4 Automobile, motorcycle and engine manufacturers are encouraged to adopt advanced emission control technologies and reach the national emission control objectives and emission standards ahead of the schedule.

2.5 Automobile manufacturers are encouraged to research and develop automobiles that specially use compressed natural gas (CNG) and liquified petroleum gas (IPG) as fuels, and provide such automobiles in zones with suitable conditions and for models of automobiles running relatively fixed routes. The emission performance of vehicles using substitute fuels shall also meet the requirements of the national emission standards.

2.6 For motorcycle products that emit pollutants at a relatively high level, the emission standards shall be raised gradually.

2.7 The development of low-emission automobiles and mini-automobiles with low fuel consumption and better emission performance is encouraged. Newly developed models are encouraged to gradually adopt the on-board diagnostic system (ODS) to carry out real time monitoring of the operation of the component parts related to emission in order to make sure that the automobiles in actual operation will constantly achieve the desired emission reduction effects and provide updated technical support for the investigation and maintenance (I/M) system of the automobiles in use. The research and development of technologies in electromobility, combination powers vehicles and battery fuel automobiles are encouraged to accumulate technical reserves for the ultra-low emission vehicles in the future.

2.8 The research and development of the catalysis and conversion technology for the reduction of NOx under conditions of rarefied gas mixture combustion, the motorcycle oxidation, catalysis and conversion technology, and the particles capture technology with excellent regeneration capability are encouraged.

3. Automobiles and Motorcycles in Use

3.1 Motor vehicles in use shall, within the term of durability, constantly meet the requirements of the national standards on leaving factory. To stress maintenance and to keep the vehicles in sound technical conditions is a basic principle in the control of pollution by emissions from vehicles in use.

3.2 In the control of emissions from vehicles in use, the emphasis shall be put on the Investigation/Maintenance (I/M) system, and proper measures shall be adopted to encourage the washing out and renewal of vehicles based on actual situations of the city. The I/M management system for vehicles in use in cities shall be perfected, the buildup of the monitoring capability and the networks shall be strengthened, monitoring of the emission performance of vehicles in use shall be stressed, and vehicles failing to meet the standards shall undergo regular maintenance compulsorily so as to guarantee that the engines will maintain the normal technical conditions.

3.3 The authentication system and quality guarantee system of the automobile maintenance enterprises shall be established gradually. Such enterprises shall be equipped with the necessary motor vehicle emissions monitoring and diagnosis measures. The monitoring and diagnosis instruments shall be

completed and appropriately mastered so as to improve the technical standards of the maintenance service, and to guarantee that the pollutants emission of vehicles after maintenance will meet the requirements of the national standards.

3.4 For models of gasoline motor vehicles designed after 1993 and still in use now (except for engines using crankbox as the inlet system), examination shall be made as to the performance of the crankbox ventilation devices and the fuel evaporation control system so as to make sure that they are in the normal working conditions.

3.5 The motor vehicle emissions monitoring methods and the requirements shall correspond with the emission standards of newly produced vehicles. Apart from the currently adopted idle speed control or free acceleration control, the dual idle speed control shall be applied to vehicles equipped with close circuit control and 3-way catalytic converters and which meet the more strict emission standards, and these methods shall be gradually replaced by the simple operating mode methods (e.g. ASM accelerating simulation operation mode).

3.6 For vehicles that require the durability of the emission performance, within the stipulated terms of durability, the results of the monitoring adopting the operation mode methods shall be used as the final evidence in judging whether the standards are met.

3.7 It is a remedial measure to conduct technical reform on the emission control of vehicles in use. During this process, detailed research and analysis shall be carried out as of the status of the air pollution and the contribution rate in the city or the region before decisions are made as to the necessity of the reform and the vehicle models that shall be given the priority in the reform. For the vehicle models to be reformed, systematic matching research and sampling reform in certain scale shall be carried out, and the reform shall achieve apparent effect or the vehicle shall meet the more strict emission standards in the monitoring adopting the entire car operating mode method. After the technical verification organized by the national competent department of environmental protection administration in cooperation with relevant departments, the reform can be popularized in certain scale by the original manufacturer of the vehicle models or its appointed representatives.

3.8 It is a transitional technology to reform the vehicles in use to adopt both gasoline and natural gas or liquidated petroleum gas as fuels, and finally it will evolve toward the new model adopting fuel gas as the single fuel and being equipped with special catalytic conversion technology. In zones with gas supply and matching facilities, reform on vehicles running fixed routes (buses and heavy vehicles) can be carried out in certain scale, and only after the careful work of matching has been done on the entire vehicle, can the popularization be pushed forward pursuant to the rules stipulated in clause 3.7.

4. Vehicle Fuel

4.1 All vehicle gasoline produced in China after 2000 shall be free of gas.

4.2 The state prohibits the importation, production and sales of tetraethyl-lead as gasoline additive after 2000.

4.3 The development of high quality lead-free gasoline and low-sulphur diesel oil shall be encouraged, and the quality of these fuels shall meet the requirements of the national standards. When the automobile emission standards is raised, the quality standards of the vehicle fuels for shall be raised accordingly, so as to provide necessary support for the application of the new emission control technologies and guarantee the durability of the emission performance of the vehicles.

4.4 No additives prohibited by the standards shall be included in the vehicle fuels.

4.5 The quality standards for substitute vehicle fuels shall be formulated to make sure that the quality of the substitute fuels will meet the requirements of the corresponding standards.

4.6 The reliability and security of fuels in transportation, storage and sales shall be guaranteed in order to prevent environmental pollution caused by accidents in these processes, e.g. volatilization of the fuel into the air and, ground water pollution caused by leakage of the oil tank.

4.7 Automobiles and motorcycles shall use fuels that meet the designed requirements and the na-

tional fuel quality standards.

4.8 Management of the importation and sales of the vehicle fuels shall be strengthened, so shall the monitoring and supervision of the gas stations, so as to guarantee that the quality of the oil provided by the gas station will meet the requirements of the national standards.

4.9 In order to prevent the block of the injection nozzle of the electronic fuel injection (EFI) engines and the accumulation of carbon in the cylinders, on the basis of the adoption of lead-free gasoline, fuel cleansers that are scientifically proportioned shall be adopted and added into gasoline in oil refineries or storage stations pursuant to the standards so as to guarantee the normal operation of the EFI vehicles.

4.10 As for the use of oxides in the fuel, e.g. MTDE, carbinol mixture fuel, etc, specific standards shall be formulated in accordance with the situation of different zones.

5. Emission Control Devices and Testing Equipment

5.1 The research, development and nationalization of the vehicle catalytic converters and other emission control devices shall be accelerated, and management systems of dynamic follow-up shall be established.

5.2 Automobile and motorcycle manufacturers shall be equipped with complete emissions testing equipment for the examination of the consistency of production and the research and development of the emission control technologies.

5.3 The development of the vehicle pollutants analysis instruments and the testing equipment shall be accelerated and so shall the nationalization of the technologies introduced from foreign countries.

5.4 The emissions pollution control equipment of the vehicles in use shall technologically match with the entire vehicles, and together form a complete set of technologies that shall pass the technical authentication of relevant departments of the state before being popularized.

5.5 The idle speed and free acceleration testing methods can only be used as testing measures for the investigation/maintenance (I/M) system of the vehicles in use, and shall not be used as basis for judging the actual effects of the reduction of the emission control equipment.

5.6 The automobile emission analysis instruments and the testing equipment shall meet the technical requirements of the national emission standards of automobiles and motorcycles.