

## **FUTURE POLICY FOR MOTOR VEHICLE EXHAUST EMISSION IN JAPAN**

### Transmitted by the Experts from Japan

1. On “Future Policy for Motor Vehicle Exhaust Emission Reduction (Fourth Recommendation)” by the Central Environment Council (See Attachment 1 & 2)

On November 1, 2000, the Central Environment Council compiled: “Future Policy for Motor Vehicle Exhaust Emission Reduction (Fourth Recommendation)”

Its major contents are as follows.

- 1) New long-term targets for diesel vehicles
  - New long-term targets are to be reached by the year 2005.
  - The sulfur content in diesel fuel is to be reduced to 50 ppm by the end of the year 2004.
  - New long-term target values are to be determined around the end of fiscal year (FY) 2001, with emphasis put on PM.

(Reference) In the third recommendation (1998), the new long-term target for diesel vehicles is to reach about one half the target value of regulations from 2002 to 2004 by around the year 2007 and the quality of diesel fuel as such must be examined.

- 2) Special diesel-powered motor vehicles (Offroad Vehicles)
  - Emissions reduction targets for special diesel-powered motor vehicles are to be reached by the year 2003.

(Reference) In the second recommendation (1997), emissions reduction targets for special diesel-powered motor vehicles are set forth, to be reached by the year 2004.

2. On report by the Central Environment Council entitled, “On the Status of General Policy on Motor Vehicle Emissions”

On December 19, 2000, the Central Environment Council compiled a report entitled, “On the Status of General Policy on Motor Vehicle Emissions.” Based on this report, a proposal for revision of the Automobile NOx Control Law will be submitted to the National Diet.

Major contents are as follows:

- 1) Pollution from nitrogen dioxide (NO<sub>2</sub>) and from suspended particulate matter (SPM) remains severe, especially in large metropolitan areas. It has been strongly suggested that diesel exhaust particles (DEP) are carcinogenic.
- 2) Some benefits have been gained from policy based on the Automobile NO<sub>x</sub> Control Law, but air pollution has still not been alleviated adequately and it is essential to revise the law and promote stronger policy.
- 3) Future general policy on motor vehicle emissions
  - Particulate matter (PM) shall be added as a target of the Automobile NO<sub>x</sub> Control Law.
  - Nagoya and its environs shall be added as a special area of the Automobile NO<sub>x</sub> Control Law.
  - As targets in general, environmental standards for nitrogen dioxide shall be reached and diesel exhaust particles shall be reduced as much as possible.
  - In vehicle type regulations, diesel passenger cars shall be added and emissions standards shall be strengthened (diesel vehicles for which gasoline substitutes are possible: gasoline vehicle level; diesel vehicles for which gasoline substitutes are not possible: new regulation values; gasoline vehicles: regulation values immediately prior to new regulation values).
  - Promotion of further spread of low-pollution vehicles, etc.
  - Business operators will be obligated to formulate vehicle use management plans
  - Manufacture and sale of low emissions vehicles by Automobile Manufacturers
  - Other

(Reference) Automobile NO<sub>x</sub> Control Law (Official title: "Law Concerning Special Measures for Total Emission Reduction of Nitrogen Oxides from Automobiles in Designated Areas")

This law provides such things as special emissions regulations for trucks, etc., in Tokyo, Osaka and other large cities where vehicular traffic is concentrated and air pollution from vehicular NO<sub>x</sub> is salient. Promulgated in 1992, the law calls for virtual achievement of environmental standards for nitrogen dioxide by the end of FY2000.

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Air Quality Bureau, Environment Agency

to continue further studies in connection with reduction effects of exhaust emissions by the combination of the following measures. The "Future Policy for Motor Vehicle Exhaust Emission Reduction (Fourth Report)" was compiled by the Air Quality Committee (headed by Makoto Ikegami, professor of the Faculty of Technology, Fukui University of Technology) of the Central Environmental Council, which was held today (November 1). Upon completion of this report, the chairperson of the Central Environment Council submitted on the same day a recommendation to the Director-General of the Environment Agency.

The following is the gist of the recommendation. The Environment Agency is scheduled to advance proceedings required for strengthening the standards in accordance with the Recommendation.

Furthermore, it is scheduled that the Central Environment Council will continue its deliberations on "Future Policy for Motor Vehicle Exhaust Emission Reduction."

**[Main Points of Recommendation]**

**o Achievement of New Long-Term Target for Diesel-Powered Motor Vehicles by Year 2005**

With regard to the new long-term target which was scheduled to be achieved by around the year 2007 in the third Recommendation, the time allowed for achievement will be shortened by two years. That is to say, the new long-term target is scheduled to be achieved by 2005. In respect to specific target values of the new long-term target, which was believed to be approximately half of the new short-term target, they will be decided by the end of fiscal year 2001 as the target time. When determining these target values, taking into consideration the assessment results of risk of diesel exhaust particles, we are studying to further reduce particulate matter to a point below its half level.

**o Reduction of Target Value for Permissible Limit of Sulfur Content of Diesel Fuel from Current Level (500ppm) to 50 ppm by End of Year 2004**

It is scheduled that the target value for permissible limit of sulfur content of diesel fuel be reduced from the current level (500ppm) to 50ppm by the end of 2004. Moreover, request shall be made that the sulfur content will be further reduced in the future. Furthermore, as for other fuel properties, it is necessary on of improvements in fuel properties and exhaust emission control technologies for motor vehicles.

**o Achievement of Reduction Target for Special Diesel-Powered Motor Vehicles by Year 2003 and Achievement of Revised Target Value of Diesel Smoke of 40% by the Same Time**

As regard the reduction targets of nitrogen oxides, hydrocarbons, carbon monoxide and particulate matter, the time allowed for achievement will be shortened by one year. That is to say, the reduction target is scheduled to be achieved by 2003. In addition, the target value of smoke to be achieved by the same time is revised to 40%.

## . **Background**

The Central Environment Council (headed by Akio Morishima, chairperson of the Research Institute of Innovative Technology for the Earth) has conducted studies and deliberated on “Future Policy for Motor Vehicle Exhaust Emission Reduction” concerning which, inquiry had been made to the said Council by the Director-General of the Environment Agency in May 1996. Since the Third Recommendation of December 1998, deliberations have been conducted continually by the Air Quality Committee (headed by Makoto Ikegami, professor of the Faculty of Technology, Fukui University of Technology) and the Experts Committee on Motor Vehicle Exhaust Emissions (headed by Michikata Kono, professor of Graduate School of Tokyo University), which was established in the Air Quality Committee.

At the 30th session of the Air Quality Committee which was held today, “Future Policy for Motor Vehicle Exhaust Emission Reduction (Fourth Report)” was submitted. The report deals with earlier achievement of the new long-term target for diesel motor vehicles, etc. And the chairperson of the Central Environment Council submitted the recommendation to the Director-General of the Environment Agency.

### **1. Situation of deliberations of Air Quality Committee**

- o Year 1996:
  - May 21 12th session of Air Quality Committee,  
Consultation on “Future Policy for Motor Vehicle Exhaust Emission Reduction”
  - October 18 15th session of Air Quality Committee,  
Interim Report  
Interim Recommendation on the same day
    - Introduction of standards for two-wheeled motor vehicles
    - Employment of low-benzene gasoline
- o Year 1997:
  - November 21 20th session of Air Quality Committee,  
Second Report  
Second Recommendation on the same day
    - Strengthening of standards for gasoline motor vehicles
    - Introduction of standards for special motor vehicles, etc.
- o Year 1998:
  - December 14 22nd session of Air Quality Committee,  
Third Report  
Third Recommendation on the same day
    - Strengthening of standards for diesel motor vehicles, etc.
- o Year 2000:
  - September 25 29th session of Air Quality Committee,  
Situation of deliberations of Experts Committee on Motor Vehicle Exhaust Emission, etc.
  - September 26 through October 20  
Public comments (The contents will not be changed by these proceedings.)
  - November 1 30th session of Air Quality Committee,  
Fourth Report  
Fourth Recommendation on the same day
    - Earlier achievement of the new long-term target for diesel motor vehicles, etc.

## **2. Situation of Deliberations of Experts Committee on Motor Vehicle Exhaust Emissions (Third Recommendation onward)**

- o The Experts Committee has been held a total of nine times. (including job-site investigations, etc.)
- o The Task Committee has been held a total of 17 times. (including hearings on Petroleum Association of Japan and motor vehicle manufacturers home and abroad, etc.)
  - \* The Task Committee is established in the Experts Committee.

## **. Outline of “Future Policy for Motor Vehicle Exhaust Emission Reduction (Fourth Recommendation)”**

### **1. Reduction Measures for Exhaust Emissions from Diesel-Powered Motor Vehicles**

#### **(1) Background**

- o The air pollution caused by nitrogen dioxide (NO<sub>2</sub>), suspended particulate matter (SPM), etc. is still in a grave state.
- o The nitrogen oxides (NO<sub>x</sub>) and particulate matter (PM) emitted from diesel motor vehicles are significantly contributing to the NO<sub>2</sub> and SPM contained in the atmospheric environment along trunk roads.
- o It seems to be extremely difficult to attain the target stipulated by the Automobile NO<sub>x</sub> Control Law that the NO<sub>2</sub> environmental standard be virtually achieved by fiscal year 2000.
- o The relationship between SPM and health hazards was recognized in the judgment of the first trial in the Amagasaki environmental pollution lawsuit. And some self-governing bodies started proposing their own exhaust emission control measures for diesel motor vehicles. Thus, the public awareness of diesel exhaust particles (DEP) is growing.
- o In respect to DEP, there are growing concerns over the risk to health. The interim review of the Risk Investigation Committee suggested that DEP has carcinogenicity.

#### **(2) Reduction Measures for Exhaust Emissions**

<b>Achievement of New Long-Term Target for Diesel-Powered Motor Vehicles by Year 2005</b>
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- o In consideration of the change in situation as described in (1) above, evaluation was made on the technical development situation after the Third Recommendation onward and the possibility of future development. Consequently, the evaluation results revealed that the development of the new after-treatment devices for exhaust gas has progressed rapidly. Hence, we have deemed it appropriate that the new long-term target be attained by the time specified above, although originally this new long-term target was to be achieved by the year 2007 in the Third Recommendation.
- o With regard to specific target values of the new long-term target, which was believed to be approximately half of the new short-term target, they will be decided by around fiscal year 2001 as the target time, taking into account the trend of the future technical development. When determining these target values, taking into consideration the DEP risk assessment results, it is necessary to continue further studies to reduce PM to a point below its half level

- o In respect to the test procedure, the Third Recommendation pointed out the necessity of the review of the test procedure, etc. by conducting the actual running mode survey. Therefore, it is imperative to reach a conclusion as soon as possible.
- o Request shall be made that voluntary marketing of the advanced-PM-control vehicles scheduled in year 2003 to 2004 by the Japan Automobile Manufacturers Association be carried out properly.

(3) Fuel quality measures

**Reduction of Target Value for Permissible Limit of Sulfur Content of Diesel Fuel from Current Level (500ppm) to 50 ppm by End of Year 2004**

- o In order to make the most of the continuous regenerative type diesel particle filter (DPF) and NOx reduction catalyst, which are very promising technologies so as to attain the new long-term target, it is a requisite that the sulfur content of diesel fuel be reduced. However, the 50ppm level seems to be the technical limit, when taken into consideration the situation of the Japanese petroleum industry today. Hence, it is believed that the aforementioned achievement time and target values are proper.
- o Request shall be made that the sulfur content of diesel fuel will be further reduced in the future.
- o As for other fuel properties, such as the aromatic component containing rate and distillation properties, it is necessary to continue further studies in connection with reduction effects of exhaust emissions by the combination of improvements in fuel properties and exhaust emission control technologies for motor vehicles.
- o Request shall be made that partial supply of diesel fuel having a low sulfur content, whose marketing is scheduled voluntarily by the Petroleum Association of Japan, be carried out properly at the same time as the marketing of the advanced-PM-control vehicles.

**2. Reduction Measures for Exhaust Emissions from Special Diesel-Powered Motor Vehicles**

**Achievement of Reduction Target for Special Diesel-Powered Motor Vehicles by Year 2003 and Achievement of Revised Target Value of Diesel Smoke of 40% by the Same Time**

- o The Second Recommendation proposed that the reduction targets of NOx, hydrocarbons (HC), carbon monoxide (CO) and PM emitted from special diesel motor vehicles be achieved by the year 2004. Moreover, the said recommendation proposed that the reduction target for diesel smoke as well as the test procedure for diesel smoke be reviewed.
- o However, in view of the fact that emissions from special diesel motor vehicles account for a significantly higher percentage of the whole motor vehicle emissions, e.g. about 30 percent in terms of NOx and about 10 percent in terms of PM, it is imperative to attain their target for exhaust emission reduction at the earliest possible time in the same way as diesel motor vehicles. Furthermore, some manufacturers are already producing those motor vehicles complying with the standard. Under such situation, studies including the technical evaluation were conducted. The study results have revealed that the aforesaid time for achievement is proper.
- o The target value for smoke is 40%. As for the test procedure for smoke, the JCMAS-004 of Japan Construction Mechanization Association will be adopted. Furthermore, it is necessary to review the test procedure in the future.
- o For all components, it is necessary to study further tightened reduction targets for all exhaust emission components in the future.

### **3. Main Study Subject in the Future**

- o The specific target values, etc. for the new long-term target for diesel motor vehicles shall be set at the earliest possible time.
- o The specific target values, achievement time, etc. for the new long-term target for gasoline-LPG motor vehicles shall be set at the earliest possible time. As for the quality of fuel and lubrication oil, it is necessary to continue further studies, based on the study results of reduction effects of exhaust emissions by various combinations of exhaust emission control technologies for motor vehicles and improvements in fuel properties.
- o Studies of new reduction target for diesel motor vehicle exhaust emissions and fuel quality that are to be set up after the new long-term target.
- o Setting-up of new reduction target for two-wheeled motor vehicles.
- o Setting-up of new reduction target for special diesel motor vehicles.

### **4. Other Related Measures, etc.**

- o Request shall be made on promotion of the total measures, such as addition of PM to among items subject to statutory regulations and strengthening of control of vehicle category, by amending the Automobile NOx Control Law.
- o Request shall be made on promotion of implementation measures concerning low-pollution motor vehicles and on promotion of creating an environment that will induce promotion of dissemination of low-pollution vehicles.
- o With regard to measures for in-use diesel motor vehicles, in order to realize the proposals made in the Interim Review by the Investigation Committee for Control Technology for Diesel-Powered Motor Vehicles, request shall be made on immediate studies for a specific policy method.
- o Request shall be made on the encouragement of strict enforcement of check and maintenance of in-use motor vehicles and thorough inspection of motor vehicles and spot-inspection of motor vehicles on the street.
- o Request shall be made that voluntary marketing of advanced-PM-control vehicles scheduled by the Japan Automobile Manufacturers Association be carried out as scheduled. Moreover, request shall be made that the partial supply of diesel fuel having a low sulfur content by the Petroleum Association of Japan be carried out properly at the same time as the marketing of the advanced-PM-control vehicles.
- o Request shall be made that the costs be borne properly by both the producers and the users.
- o Request shall be made that a study be launched for measures for emission sources that have not been controlled yet.
- o With the measures for global warming in view, request shall be made that the technical development be advanced in such a direction that the low-exhaust emission technology and the low-fuel consumption technology be compatible with each other. Furthermore, request shall be made that the survey be launched to clarify actual emission state, etc. of methane and dinitrogen oxide emitted from motor vehicles.
- o In respect to hazardous air pollutants emitted from motor vehicles, request shall be made that the basis for evaluation of accurate emission amounts, such as the measurement methods, be further improved and the required measures be carried out.
- Request shall be made that the evaluating systems be further improved in connection with effects of various measures for air quality improvements, the development of projection method and effects of various road-side measures.

## Attachment 2

### **New Application of Emissions Regulations on Diesel-powered Special Motor Vehicles**

— Implementation of WTO advisory based on  
the “Agreement on Technical Barriers to Trade” —

There are approximately 6,720,000 special motor vehicles in Japan including construction equipment (e.g., wheel loader) and industrial equipment (e.g., fork lift truck)etc. These vehicles account for 32% of all nitrogen oxides and 16% of all particulate matter in total vehicle emissions, and at present, they are not subject to vehicle emissions regulations.

The Ministry of Transport has decided to introduce emissions regulations for these diesel-powered special motor vehicles for the first time, and in compliance with the “Agreement on Technical Barriers to Trade,” it has issued prior notification of its decision to member countries through the World Trade Organization (WTO). Upon completion of requisite procedures, Safety Regulations for Road Vehicles are scheduled to be amended in part, hopefully around February of 2001, and then the regulations will be introduced.

The emissions regulations to be introduced are roughly on the same level as regulations in Europe and America. For carbon monoxide (CO), hydrocarbons (HC), nitrogen oxides (NOx), particulate matter (PM) and black diesel smoke, emissions regulations will be established in terms of rated-output of the engine. Initially, these regulations were scheduled to be introduced in 2004, but the schedule was brought forward one year to 2003 in response to a report by the Central Environment Council in 2000.

If all the diesel-powered special motor vehicles to be subject to the new regulations were replaced by vehicles already compliant with regulations, it is estimated that NOx would be reduced by 36% and PM by 15% from current levels.



**Target values (average values) for setting permissible levels of emissions by diesel-powered special motor vehicles under newly enforced regulations**

Vehicle type	Measurement mode	Carbon monoxide	Hydrocarbons	Nitrogen oxides	Particulate matter	Black smoke	Scheduled date of enforcement
Special diesel vehicle (19kW ≤ rated output < 37kW)	D8 mode (g/kWh)	5.0	1.5	8.0	0.8	40%	New model vehicles: October 1, 2003
Special diesel vehicle (37kW ≤ rated output < 75kW)		5.0	1.3	7.0	0.4		
Special diesel vehicle (75kW ≤ rated output < 130kW)		5.0	1.0	6.0	0.3		Vehicles currently in production: September 1, 2004
Special diesel vehicle (130kW ≤ rated output < 560kW)		3.5	1.0	6.0	0.2		

- The emissions measurement mode will be the 8 mode (C1 mode stipulated in ISO8178-4), which is used internationally as the mode for determining the characteristics of emissions from special diesel vehicles in general. Permissible limits will be roughly equivalent to the regulation values on emissions in Europe and America.
- Black diesel smoke concentrations are measured while driving in 8 mode and while

**Attachment 3**

**INTERIM REVIEW BY INVESTIGATION COMMITTEE FOR CONTROL  
TECHNOLOGY FOR DIESEL-POWERED MOTOR VEHICLES**

The Environment Agency, Ministry of International Trade and Industry, and Ministry of Transport established in March 2000, an “Investigation Committee for Control Technology for Diesel-powered Motor Vehicles” which consists of experts of learning and experience and local self-governing body staff so as to conduct a series of manufacturer hearings and verification tests in connection with the exhaust emission reduction technology for in-use diesel-powered motor vehicles. After the applicability, effects and so on have thoroughly been studied, this interim review was released today.

The outline of the interim review is summarized in the attached sheet.

## **INTERIM REVIEW BY INVESTIGATION COMMITTEE FOR CONTROL TECHNOLOGY FOR DIESEL-POWERED MOTOR VEHICLES (OUTLINE)**

### 1. Background

The Investigation Committee for Control Technology for Diesel-powered Motor Vehicles was established in March 2000 as a joint investigation committee by the Environment Agency, Ministry of International Trade and Industry, and Ministry of Transport. In view of the fact that the air pollution caused by nitrogen dioxide (NO<sub>2</sub>), suspended particulate matter (SPM), etc. is still in a serious state, especially around major cities, the investigation committee was formed to scrutinize the applicability, effects, etc. of the exhaust emission control measures for in-use diesel-powered motor vehicles, in particular the reduction control technology for particulate matter (PM) so as to study effects of various measures, including the switching to those motor vehicles conforming to the latest emission control regulations. So far, the committee has convened eight times and its interim review was released on July 28, 2000.

### 2. Outline of Interim Review

#### (1) Control technology and evaluation thereof

Of those technologies having proven effects among the PM reduction technologies for in-use diesel-powered motor vehicles, their evaluation was carried out through a series of manufacturer hearings and verification tests. The following are their evaluation results. Concerning each diesel particulate filter (DPF), the PM reduction effects are recognized. However, there are some restrictions in respect to the construction conditions of motor vehicles, such as mounting spaces, or in respect to the running conditions. Therefore, they can not be mounted on all in-use diesel-powered motor vehicles, although they are suitable for some vehicle models which have satisfied the conditions.

#### o Alternate regenerative type DPF

(Type in which two filters alternately collect PM and are regenerated by burning the collected PM, using electric wires or the like)

The DPF of this type can be used with the current diesel fuel without any restriction in terms of running conditions. However, from the standpoint of the vehicle construction there are some restrictions, such as the need of assuring a space for installing the DPF or the switching to a higher performance generator. Because of these reasons, it is believed that the DPF of this type can be applied to only certain vehicle models that have satisfied the required conditions.

Furthermore, it is necessary to replace the sensors, etc. at intervals of around one year; the filters at intervals of around three years.

o Continuous regenerative type DPF

(Based on oxidation by NO<sub>2</sub>)

(Type in which the filter is regenerated when the collected PM is eliminated continuously through the oxidation at a comparatively low temperature by using nitrogen dioxide (NO<sub>2</sub>) generated by an oxidation catalyst located before the filter)

It is generally believed that, because of a restriction of NO<sub>x</sub>/PM ratio in the exhaust gas, there are difficulties for the DPF of this type to be applied to diesel-powered motor vehicles which meet only regulations prior to the short-term regulations. Moreover, it is mandatory that when the running exhaust temperature is above a certain level it must exceed a certain ratio. Hence, it is difficult for the DPF of this type to be applied to motor vehicles or passenger cars which run for a long period of time at low speeds. In the case of current diesel fuel, NO<sub>2</sub> is insufficient due to the formation of sulfate, it is imperative to use low-sulfur content diesel fuel. Therefore, it is considered that the DPF of this type can be used on some motor vehicles which will meet the conditions after the introduction of low-sulfur diesel fuel.

o Continuous regenerative type DPF

(Based on oxidation by catalyst)

(Type in which PM is collected by the filter and the filter is regenerated when the collected PM is eliminated continuously through the oxidation at a comparatively low temperature by the operation of a catalyst carried on the filter)

It is mandatory that when the running exhaust temperature is above a certain level it must exceed a certain ratio. Hence, it is difficult for the DPF of this type to be applied to motor vehicles or passenger cars which run for a long period of time at low speeds.

Although this DPF can be employed with the current diesel fuel, the PM reduction effects are reduced due to the formation of sulfate which occurs during heavy-load operation. Therefore, it is desirable to use low-sulfur content diesel fuel. Because of these reasons, it is believed that the DPF of this type can be used on some motor vehicles which have satisfied the running conditions.

o Intermittent regenerative (batch) type DPF

(Type in which PM is collected by the filter and the filter is regenerated by means of an external power supply when the vehicle is not operated)

Theoretically speaking, the DPF of this type can be used on any vehicle models. However, the amount of PM that can be collected in a single regenerative operation is limited. Therefore, it is difficult for this DPF to be applied to those motor vehicles which must cover a long distance in a single run. Although the DPF can be applied to those motor vehicles which cover a short distance in a single run, it is mandatory that the operator is a person capable of competently carrying out the management of the regenerative operation, etc. and power supply facilities for regenerative use be available.

(2) Effects, etc. of each measure

With regard to the switching to those motor vehicles conforming to the latest emission control regulations and the installation of DPF, analysis was made for the NO<sub>x</sub> and PM reduction effects, etc. in the designated areas under the Automobile NO<sub>x</sub> Control Law. The following are the analysis results.

- If it is possible that DPF could be mounted on all in-use motor vehicles, the maximum PM reduction effects would be obtained. However, the mounting ratio of DPF will remain at a low level because of technical restrictions, etc. Consequently, the switching to those motor vehicles conforming to the latest emission control regulations will bring greater PM reduction effects.
- If the switching to those motor vehicles conforming to the latest emission control regulations is promoted, the motor vehicles conforming to the 1989 regulation will be replaced at an earlier stage. Therefore, the effect of mounting DPF for the remaining period would not be great.
- It is estimated that the price of DPF is 500,000 to 800,000 yen in the case of trucks; 700,000 to 2,400,000 yen in the case of buses.

(3) Specific measures to be taken in future

With regard to exhaust emission control measures for in-use diesel-powered motor vehicles, it is desirable that the measures be enforced according to the following basic approach enumerated below.

- Under the current situation where the attainment of the environment quality standards of NO<sub>2</sub> and SPM is difficult, it is necessary to reduce both emissions of NO<sub>x</sub> and PM. However, the installation of DPF on in-use motor vehicles has good effects on PM reduction, but has little effects on NO<sub>x</sub> reduction. Basically, it is appropriate that old diesel-powered motor vehicles be switched to those motor vehicles conforming to the latest emission control regulations.
- In respect to DPF, the present situation is such that DPF can not be installed on all in-use diesel-powered motor vehicles. Hence, it is impossible to enforce obligatory installation of DPF uniformly on all motor vehicles concerned. Nevertheless, it is still feasible to install DPF on motor vehicles of some limited vehicle models and running conditions. Therefore, it will be effective if an incentive be granted to the mounting of DPF for some motor vehicles in which the mounting of DPF has significantly good effects.

The following are the contents of specific measures to be taken according to the basic approach above.

- As for diesel-powered motor vehicles which meet only regulations prior to the 1989 regulations, their emissions of both NO<sub>x</sub> and PM are great. Hence, it is desirable that the switching to those motor vehicles conforming to the latest emission control regulations be promoted. Moreover, except for those motor vehicles having higher age and whose average number of years of use is especially great, the remaining usable period after the mounting of DPF is short. Therefore, the need for promotion of use of DPF by giving incentive is not high.

- As regards the motor vehicles conforming to the short-term regulation, from the viewpoint of reduction of both NO<sub>x</sub> and PM, it is recommended that the switching to those motor vehicles conforming to the latest emission control regulations be promoted. Furthermore, inasmuch as they can be operated for a considerably long period of time even after the installation of DPF, such a measure is believed to be effective that an incentive is granted to those motor vehicles where the mounting of DPF is possible so as to encourage the installation thereof.
- In respect to the motor vehicles conforming to the long-term regulation, they are such motor vehicles conforming to the latest exhaust emission regulations in which the emission control has been drastically strengthened. Therefore, the need for taking special promoting measures is not high at present.
- As for the applicable vehicle models for mounting DPF, it is desirable to select those motor vehicles in which the restricting conditions for the mounting are satisfied and the remaining usable period after the mounting is long. Furthermore, those motor vehicles have a higher priority as eligible vehicles for receiving an incentive.

(4) Subjects to be tackled in future

- Confirmation to be continued through durability test in verification research of DPF;
- α Review of methods of control and incentive that are to be taken in the future to realize the proposed specific measures. Feedback to review of the Automobile NO<sub>x</sub> Control Law;
- β Earlier sales of motor vehicles with excellent exhaust emission control performance at the time even before the start of the regulation concerned. Development of the after-processing devices, such as DPF, that can be applied to a greater vehicle models and running conditions;
- χ Supply of diesel fuel with lower sulfur content and improvement of its infrastructure;
- δ Study of constant requirements to be satisfied by DPF. Institution of type approval system of DPF;
- ε Study of measures to encourage the check and maintenance for motor vehicles.

**MEMBERS OF INVESTIGATION COMMITTEE FOR CONTROL TECHNOLOGY FOR  
DIESEL-POWERED MOTOR VEHICLES**

Ⓒ Takeshi Saito	Emeritus professor, Waseda University
Norimasa Iida	Professor, Faculty of Science and Engineering, Keio University
Matsuo Odaka	Director-General, Traffic Nuisance Division, Traffic Safety and Nuisance Research Institute, Ministry of Transport
Michikata Kono	Professor, Graduate School of Tokyo University
Masahiro Shioji	Professor, Graduate School of Energy Science, Kyoto University
Yasuhiro Daisho	Professor, Faculty of Science and Engineering, Waseda University
Kunio Matsuba	Director-General, Automotive Pollution Countermeasures Division, Bureau of Environmental, Tokyo Metropolitan Government
Tetsuji Fukushima	Director-General, Environmental Protection Bureau, Pollution Control Department, Yokohama city
Kouichi Hashimoto	Director-General, Pollution Control Department, Environmental Protection Bureau, Kawasaki city

(Observers)

Nobutaka Morimitsu	Chairman, Emissions Sub-Committee, Japan Automobile Manufacturers Association
Hirotoishi Hayashi	Director, Public Affairs Department, Japan Automobile Federation
Yoshiro Jinno	Chairman, Central Technical Committee, Japan Bus Association
Narimasa Suzuki	Vice-chairman, Committee on Environmental Problems, All Japan Truck Association
Ikutoshi Matsumura	Chairman, Automotive Fuels Committee, Technical Committee, Petroleum Association of Japan

(The person with a circle is the chairperson of the Committee.)

**HISTORY OF DELIBERATIONS OF INVESTIGATION COMMITTEE FOR CONTROL  
TECHNOLOGY FOR DIESEL-POWERED MOTOR VEHICLES**

- o First meeting (March 3, 2000)
    - **Purpose of holding meetings at Investigation Committee for Control Technology for Diesel-Powered Motor Vehicles**
    - Schedule of study, etc.
  
  - o Second meeting (April 17, 2000)
    - **Hearing for DPF manufacturers and automobile manufacturers**
  
  - o Third meeting (April 24, 2000)
    - Hearing for related parties
  
  - o Fourth meeting (May 29, 2000)
    - **Arrangement of technical items for exhaust emission reduction performance of DPF, etc.**
  
  - o Fifth meeting (June 27, 2000)
    - Verification research for DPF
    - **Trial calculation of exhaust emission reduction effects, etc.**
  
  - o Sixth meeting (July 17, 2000)
    - Interim review, etc.
  
  - o Seventh meeting (July 24, 2000)
    - Interim review
  
  - o Eighth meeting (July 28, 2000)
    - Interim review
-



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Template: C:\Program Files\Microsoft  
Office\Templates\Normal.dot  
Title: On "Future Status of Policy for Reducing Motor  
Vehicle Emissions (No  
Subject:  
Author: Robert Mulcahy  
Keywords:  
Comments:  
Creation Date: 12/01/01 09.24  
Change Number: 3  
Last Saved On: 12/01/01 09.28  
Last Saved By: UNECE  
Total Editing Time: 5 Minutes  
Last Printed On: 12/01/01 15.16  
As of Last Complete Printing  
Number of Pages: 16  
Number of Words: 20,070 (approx.)  
Number of Characters: 114,401 (approx.)