ADVISORY COUNCIL ON THE ENVIRONMENT
ACE
Room 924, 9th floor, Murray Building, Garden Road, Central, Hong Kong
Tel: 2848 2606 Fax: 2530 5264
香港中環花園道美利大廈 9 樓 924 室 • 電話： 2848 2606 傳真機： 2530 5264

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for information

Integrated Vehicle Emission Control Strategy

INTRODUCTION

This paper updates Members on the current position of our integrated vehicle emission control strategy and the trial of LPG taxis.

THE STRATEGY

2. To deal with the vehicular air pollution problems, we are implementing a comprehensive integrated vehicle emission control strategy which comprises the following key elements:

(a) clean alternative to diesel vehicles;
(b) stringent vehicle emissions and fuel standards;
(c) strengthened emission inspection;
(d) strengthened enforcement against smoky vehicles; and
(e) education and publicity.

Clean Alternatives to Diesel Vehicles

3. Diesel vehicles are causing us serious air pollution problems because of their considerable mileage. Only a substantial reduction in diesel mileage can bring down the ambient concentrations of a harmful air pollutant, respirable suspended particulates (RSP), to its health-based Air Quality Objective level and hence we are exploring different means to reduce the number of diesel vehicles running on the roads. As a first step, we shall introduce a set of stringent emission standards in 1998 which will in practice ban all new passengers cars from using diesel. The measure is expected to cut about 270 new diesel private cars each year from entering into Hong Kong.

4. We are at the same time considering seriously the use of gas vehicles to replace part of the diesel vehicle fleet as gas vehicles are well proven technology and widely used in many overseas countries such as Japan, the Netherlands, Australia and North America. In September 1996, the government set up an inter-departmental working group to examine the feasibility of introducing gas vehicles on a large scale in Hong Kong to replace diesel vehicles. The working group has found that liquefied

petroleum gas (LPG) vehicle is a practicable clean alternative. To address the concerns by the transport trade as well as to collect local operational information relating to such things as costs and maintenance requirements, a trial of LPG taxis is being planned to start in November 1997 as a pilot scheme. If the trial is successful, a proposal will be made to introduce LPG taxis on a wide scale which will reduce the emission of respirable suspended particulates from the motor vehicle fleet by up to 30%. Details of the LPG trial scheme are provided in paragraphs 14 to 19.

5. Apart from LPG taxis, we are also exploring the feasibility of other LPG vehicles such as vans and buses. Moreover, we are monitoring closely the development of other clean alternative vehicles such as electric vehicles and fuel cell vehicles. Once these clean vehicles become commercially viable, we will seek to introduce them into Hong Kong.

Stringent Vehicle Emissions and Fuel Standards

6. It is our established policy to adopt the most stringent vehicle fuel and emission standards which are practical and available to Hong Kong. Under this policy, we have progressively tightened up our fuel and emission standards for both petrol and diesel vehicles since 1991. Today, our standards are at the same level as the European Union. Major steps taken in the past years include:

(a) 1991 - The introduction of unleaded petrol;

(b) 1992 - The requirement of 3 way catalytic convertor for new petrol vehicles which will reduce the emission of carbon monoxide, nitrogen oxides and hydrocarbons from individual cars by up to 90%;

(c) 1995 - The introduction of clean diesel with 0.2% sulphur content plus requiring new diesel vehicles to comply with emission standards equivalent to the European Euro I and Euro Phase I standards for heavy duty and light duty vehicles respectively; and

(d) 1997 - The further reduction of sulphur content in motor diesel fuel to 0.05% and requiring new heavy duty diesel vehicles to comply with emission standards equivalent to the new European Euro II standards.

7. Today, over 80% of the petrol consumed in Hong Kong is unleaded. Moreover, 60% of the petrol cars are fitted with catalytic convertors. In terms of emission from diesel vehicles, as compared to the pre-1995 position, the new standards will reduce the emission of sulphur dioxide, RSP and nitrogen oxides from individual diesel vehicles by 90%, 80% and 20% respectively. We shall further tighten our motor fuel and emission standards as and when they are practical.

8. Despite all these stringent standards, it is worthwhile to reiterate that due to our extremely high density of motor vehicles and the high diesel mileage, we still need additional control measures to achieve our AQO targets and that is why we are putting forward the LPG taxi trial and looking at cleaner alternatives for other diesel vehicles.

Strengthened Emission Inspection

9. At present, all in-service commercial diesel vehicles undergo a free-acceleration smoke test during their annual road worthiness inspection. To encourage vehicle owners to pay more attention to vehicle smoke emissions, we are working to strengthen the inspection by including smoke measurements using smoke meters, and a check on engine settings and air filters. This more thorough emission check will be initially applied on a sampling basis starting in October 1997. Subject to a review of its effectiveness, we will make the emission check a standard feature of annual inspection, and will examine whether an additional mid-year emission check for high mileage vehicles is appropriate.

Strengthened Enforcement Against Smoky Vehicles

10. The Environmental Protection Department is implementing a smoky vehicle control programme which is calling in 30,000 vehicles a year for smoke tests. In addition, the Police are issuing 2500 fixed penalty tickets a year to those vehicles that are found to be smoky. These programmes have achieved some success in reducing the number of smoky vehicles. However, the general standard of vehicle maintenance for smoke control is still unsatisfactory, and there are still a number of habitual offenders. To improve the general maintenance standard, we are experimenting with the use of a new technology, chassis dynamometers, to test the smoke emission of a vehicle. This new technology, if found to be successful, will help to measure smoke emission more accurately and, much more importantly, will raise the maintenance standards of motor vehicles as a vehicle can pass the test only if it is fully maintained and well tuned. Our target is to introduce the new test to all light duty smoky vehicles by late 1998 and eventually extend it to all smoky vehicles.

11. To step up the deterrent effect, and in response to public concerns, we are also considering increasing the level of fixed penalty fines for smoky vehicles as well as examining mechanisms to strengthen the enforcement arrangements and will consult Members and the transport trades in due course.

Education and Publicity

12. At present, the Environmental Protection Department distributes an information leaflet on measures to prevent excessive smoke emissions to owners whose vehicles have been spotted emitting excessive smoke. We are reviewing the information leaflet and will widen its circulation to other motorists through the transport trade associations. Moreover, to help vehicle buyers to take environmental

performance into consideration in choosing vehicles, and to promote cleaner vehicles being marketed by vehicle dealers, we are working out with the Motor Traders Association a scheme to provide motorists with information on the fuel consumption and emission levels of various vehicle models on the market.

Emission from Idling Vehicles

13. In terms of their contribution to the overall air quality, emissions from idling vehicles are not a major source. However, these emissions frequently cause a nuisance to pedestrians and people nearby and therefore have attracted much concern by the community. We have started a publicity campaign in March 1997 to invite drivers to switch off engines while idling and waiting. The publicity campaign includes TV and radio promotion, posters and leaflets. We have also offered support to other non-government organisations to educate the public and the drivers. In parallel, we are collecting information from overseas authorities on regulatory controls on idling vehicles and their enforcement. We are consulting relevant bodies about the practicability of introducing legislative control on idling vehicles in Hong Kong.

THE LPG TAXI TRIAL SCHEME

14. We aim to start the trial scheme in November 1997 as a pilot which will last for up to a year. The main purpose of the trial scheme is to collect information on costs and maintenance of LPG taxis as well as to gain local operational experience to address the concerns by the trades. Once there is sufficient evidence that LPG taxis are viable in Hong Kong in all respects, a proposal to introduce LPG taxis widely will be prepared. Initially we propose to put up 30 LPG taxis comprising new and used vehicles to operate as urban taxis. They will be operated exactly in the same manner as ordinary commercial urban taxis. Used LPG taxis included in the trial scheme will help evaluate their maintenance and repair requirements.

15. A committee will be set up to steer and monitor the trial scheme as well as to consider the results and findings. Apart from Government departments, representatives from taxi trades, vehicle suppliers as well as relevant academics will also be invited to join this committee to ensure that the findings will be considered in a comprehensive manner.

16. To ensure that these LPG taxis will be operated in the same mode as normal commercial taxis, experienced taxi operators will be invited to act as fleet managers for the trial taxis. These fleet managers will collect and keep the relevant data required and report regularly to the working committee.

17. To ensure the highest safety and performance standards, the LPG vehicles will be maintained and serviced only under the supervision of persons trained by the original vehicle manufacturers. The workshops for maintaining these vehicles will also comply with the requirements of the Gas Standards Office of the Electrical and Mechanical Services Department as well as the Fire Services Department.

18. At a start, 3 temporary LPG filling stations will be built to support the scheme. They are located in Chai Wan, Kowloon Bay and Tsing Yi. We are looking at the feasibility of setting up another temporary LPG filling station at Shatin Height. The Gas Standards Office of the Electrical and Mechanical Services Department will also ensure that the design and operation of these stations will comply with the highest safety standards.

19. We shall update Members on progress of the LPG taxi trial in due course.

Environmental Protection Department
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