For discussion **FCR(2000-01)11**
on 12 May 2000

ITEM FOR FINANCE COMMITTEE

HEAD 44 - ENVIRONMENTAL PROTECTION DEPARTMENT
Subhead 700 General other non-recurrent
New Item "One-off grant to assist owners of pre-Euro diesel light vehicles to retrofit their vehicles with particulate traps"

Members are invited to approve the creation of a new commitment of $50,880,000 for providing a one-off grant to assist vehicle owners to retrofit their pre-Euro diesel light vehicles with particulate traps.

PROBLEM

Diesel vehicles are the dominant source of air pollution at the street-level. It is necessary to adopt all practical measures to mitigate emissions from the existing diesel vehicle fleet.

PROPOSAL

2. The Director of Environmental Protection, with the support of the Secretary for the Environment and Food, proposes to create a new commitment of $50,880,000 for providing a one-off grant to assist owners of pre-Euro diesel light vehicles of up to four tonnes to retrofit their vehicles with particulate traps. Eligible owners can approach authorised contractors for the installation of particulate traps. The contractors will be reimbursed by Government up to the limit of each grant. We plan to make the installation a pre-requisite for the renewal of licence for these vehicles one year after the grants are made available.

/**JUSTIFICATION** .....

JUSTIFICATION

3. Diesel vehicles are a major source of air pollution in Hong Kong. They account for about one-third of the local vehicle population and contribute to about two-thirds of the vehicle mileage. About 98% of the particulate emissions and 75% of the nitrogen oxides emissions from the vehicle fleet are due to diesel vehicles. The emissions from vehicles make up over 70% of the particulates and about 80% of the nitrogen oxides in the roadside environment of the urban centres. Controlling pollution from diesel vehicles is crucial to bringing clean air to Hong Kong.

4. In 1995, we required all newly registered diesel vehicles to comply with the Euro I emission standards of the European Union. A diesel vehicle of Euro I emission design emits about 50% less particulates and about 10% less nitrogen oxides than its preceding model. Subsequently, we have been following the European Union in tightening the emission requirements for newly registered vehicles. We implemented the Euro II standards in 1997 and will further tighten the emission requirements to the Euro III level next year. A Euro III vehicle will emit close to 90% less particulate and over 40% less nitrogen oxides than its pre-Euro predecessor.

5. About 64% of the local fleet of diesel light vehicles are pre-Euro models. While diesel taxis will be replaced by Liquefied Petroleum Gas (LPG) vehicles soon, many of the other diesel light vehicles still have five or more years to operate before natural retirement. We plan to retrofit pre-Euro vehicles with particulate traps to reduce their emissions, and to make the installation a pre-requisite for the renewal of their licences.

6. The Hong Kong Polytechnic University (HKPolyU) has developed a low cost particulate trap. The Environmental Protection Department (EPD), in collaboration with the HKPolyU, carried out a trial of the particulate trap for diesel light vehicles including taxis, public light buses and light goods vehicles last year.

7. The trial has been completed. It has confirmed the effectiveness of the particulate trap in reducing particulate emissions from a diesel vehicle under local driving conditions. The particulate trap can reduce at least 20% of its particulate emissions from the fleet of pre-Euro diesel light vehicles. Retrofitting all pre-Euro diesel light vehicles (including all pre-Euro taxis and light buses before they switch to LPG or other cleaner fuel) can help to reduce about 6% of the total particulates emissions from the vehicle fleet. The particulate trap can also reduce about 30% of the smoke emissions of a vehicle.

/**Implementation** .....

Implementation Plan

8. Since the particulate trap is a proprietary product, we have to seek external help for their supply. In addition, EPD does not have the manpower and equipment to retrofit the trap onto pre-Euro diesel light vehicles. It is thus necessary to look for suitable contractors for the supply and installation of the particulate trap.

9. Subsequent to the launch of the trial with HKPolyU, different designs of particulate traps have been proposed by various suppliers. We intend to seek contractors for the supply and installation of suitable particulate traps through an open tender. As part of the tendering exercise, we will set up an independent technical committee comprising experts in this area to assess the effectiveness, durability and effects on vehicle engine performance of all the designs put forward by the bidders.

10. Subject to Members' approval of the proposal, we will seek the approval of the Central Tender Board (CTB) on the tendering procedures and plan to proceed with the tendering in June. We aim to complete the evaluation and award the contracts by October this year. The installation programme is scheduled to start in December this year.

11. Subject to approval of CTB, we propose to award non-exclusive contracts to the tenderers whose products have passed the technical assessment conducted by the proposed technical committee. Our intention is that vehicle owners can choose to retrofit their vehicles with one of the products passed by the proposed technical committee. The grant will be given to successful tenderers on a reimbursement basis after installation of the particulate traps.

FINANCIAL IMPLICATIONS

Non-recurrent Cost

12. The proposal involves the installation of particulate traps for about 42 400 pre-Euro diesel light vehicles of weight up to four tonnes. A breakdown of these vehicles by vehicle classes is given at the Enclosure. We estimate that the cost of a particulate trap will be around $1,000 and installation will cost around $200 each. The proposal will therefore cost about $50,880,000.

Encl.

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13. Our plan is to commence installation of the particulate traps before end 2000 and complete the exercise by 2002. The estimated cashflow is as follows -

2000-01 $'000	2001-02 $'000	Total $'000
12,720	38,160	50,880

Recurrent Cost

14. The proposal has no additional recurrent financial implications. EPD will oversee the installation programme with its existing staff resources.

BACKGROUND INFORMATION

15. Emissions from diesel vehicles can be reduced by a combination of measures. Our strategy is to -

(a) introduce practical and clean alternatives to diesel vehicles;

(b) adopt the most stringent vehicle and fuel standards;

(c) adopt practical technology to mitigate emissions from the existing vehicle fleet; and

(d) ensure proper maintenance of in-use vehicles through a combination of voluntary and regulatory measures.

16. The proposal to retrofit pre-Euro diesel light vehicles with particulate traps forms part of the overall strategy to achieve our clean air objective.

Environment and Food Bureau
May 2000

Enclosure to FCR(2000-01)11

Breakdown of Pre-Euro Diesel Light Vehicles to be Retrofitted with Particulate Traps

Vehicle class	Estimated number as at March 2000	Remarks
Taxi	11 735	All pre-Euro taxis to be retrofitted with particulate traps as an interim measure before they are replaced by LPG vehicles.
Public and Private Light Buses	4 605	All pre-Euro light buses to be retrofitted with particulate traps before they are replaced by LPG or other alternative-fuelled vehicles.
Light Goods Vehicles (Vans) of gross vehicle weight less than or equal to four tonnes	24 114	
Private Cars	1 939	
Total	**42 393**	