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**LegCo Panel on Transport and  
Panel on Environmental Affairs**

**Background Brief on Light Buses Using Cleaner Fuel**

**Purpose**

This paper provides background information on the incentive scheme to encourage light bus owners to replace their vehicles with liquefied petroleum gas (LPG) light buses or electric ones.

**Background**

2. In the 1999 Policy Address, the Administration set the targets of reducing respirable suspended particulate (RSP) and nitrogen oxide (NOx) emissions from motor vehicles by 80% and 30% respectively by the end of 2005. The Administration also announced that it would launch a six-month trial scheme for LPG light buses and that, if the results were satisfactory, it intended to provide financial assistance similar to that for the taxi trade<sup>1</sup> to encourage operators to switch over to LPG light buses. Replacing all the existing 6 000-odd public and private diesel light buses with LPG ones is expected to reduce the RSP and NOx emissions from motor vehicles by 4% and 2% respectively.

3. Following the successful trial of LPG and electric light buses<sup>2</sup> on six green public light bus (PLB) routes and one red PLB route from June 2000 to January 2001 and a route-by-route analysis of the impact of replacing all diesel PLBs with LPG ones, the Administration announced in November 2001 its plan to introduce a package of incentives to encourage light bus owners to replace their vehicles with LPG light buses or electric ones.

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<sup>1</sup> The proposal is to provide a grant of \$40,000 for each eligible diesel taxis.

<sup>2</sup> The electric light buses were included in the trial at the request of the PLB trade.

## **The Incentive Scheme**

### Public light buses

4. The proposed incentive scheme for diesel PLB includes the following elements:
- (a) owners of diesel PLBs who replace their vehicles with an LPG or electric model before end-2004 will be offered a one-off grant of \$60,000 or \$80,000 respectively;
  - (b) the deadlines of application for the one-off grant for owners of diesel PLBs aged 10 or above at the time of replacing their vehicles will be end-2003 and for owners of diesel PLBs below 10 years old at the time of replacement end-2004; and
  - (c) the one-off grant will be made available to owners who have already replaced their diesel PLBs with LPG or electric ones before the Administration starts accepting applications for the one-off grants.

### Private light buses

5. The incentive for private light bus owners would be in the form of First Registration Tax (FRT)<sup>3</sup> exemption with the same deadlines for applications as for the PLB one-off grants and allowance for retroactivity.

### Financial Implications

6. The Administration estimates that the financial implication of offering the one-off grants to PLBs and FRT exemptions to private light buses would be \$184 million (\$178 million for one-off grants for PLBs and \$6 million revenue forgone in respect of FRT exemption for private light buses). This is calculated on the assumptions that 68% of PLBs and half of the 16-seat private light buses will take up the incentives offered and replace their vehicles with LPG ones. Because of their operational constraints, very few, if any, will replace their light buses with electric ones. If all PLBs and private light buses take up the offers, the financial implications will be \$285 million (\$261 million for one-off grants for PLBs and \$24 million for private light buses).

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<sup>3</sup> The FRT of a light bus is 4% of its taxable value.

### Environmental Implications

7. According to the Administration, if 68% of the PLBs and half of the existing 16-seat private diesel light buses are replaced by LPG models and assuming that very few will opt for an electric model, it will achieve 90% of the RSP and 70% of the NOx reductions anticipated under a full and mandatory replacement scheme.

### **Public views and Administration's response**

8. The Panel on Transport and Panel on Environmental Affairs held a series of meetings to examine issues relating to light buses using cleaner fuel. Deputations including the PLB trade (both red minibus and green minibus trade), private light bus trade and vehicle manufacturers were invited to give views on the related issues. Whilst supporting the Administration's initiatives to improve the air quality of Hong Kong, the deputations have expressed various concerns about the implementation of the scheme.

### Incentive scheme

9. On the package of incentives, queries have been raised on the following:
- (a) Since the Administration's policy intent is to encourage early replacement of more polluting diesel light buses to achieve an overall reduction in RSP and NOx emissions from motor vehicles, there is no reason why private light buses should be treated differently. The same incentive for diesel PLB owners should be made available to diesel private light bus owners.
  - (b) The one-off grants of \$60,000 and \$80,000 are inadequate to provide sufficient incentive for diesel light bus owners to replace their vehicles with LPG or electric models, and the amount should be increased to \$120,000 and \$160,000 respectively.
  - (c) A one-off grant should be provided to those owners who intend to replace their diesel light buses with Euro III diesel models. Special consideration should also be given to those who have just replaced their vehicles.
  - (d) An interest-free loan should be provided to assist individual owners who might have financial difficulty in replacing their diesel PLBs with those using cleaner fuel.
10. The Administration has indicated that details of the proposed incentive scheme are by no means final. The Administration would carefully consider

the views expressed by members as well as the feedback received from the trade and the public before presenting its final proposal to the Legislative Council for funding approval. On specific points made by the deputations, the initial responses from the Administration are as follows:

- (a) Different incentives are proposed for PLBs and private light buses because of their different operating conditions. Priority must be given to heavy polluters.
- (b) While the one-off grant is not set on the basis of any scientific assessment, factors such as the price of a LPG light bus, operating conditions of the PLB trade and the voluntary nature of the proposed scheme have been taken into account. The proposed level of the one off-grants should attract many PLB owners to switch to vehicles running on cleaner fuel.
- (c) There is no justification for using public money to subsidize PLB operators to replace their existing diesel light buses that are beyond economic repair with new diesel models. Same as other vehicle owners, PLB owners have to replace their vehicles which meet the prevailing standards.

#### Replacement timetable

11. Concern has been raised over the inadequate provision of LPG supporting infrastructure to facilitate the switching over to LPG PLB mode of operation. As such, the PLB trade has requested the deadlines of application for the one-off grants be extended taking into account the existing shortfall in LPG filling capacity and the construction programme for new LPG filling stations. To facilitate the launching of electric light buses in Hong Kong, charging facilities should also be provided at convenient locations.

12. The Administration has advised that there is no need to wait until all 45 LPG stations are completed before the application deadlines could be set. By setting definite deadlines as proposed, early replacement of existing diesel light buses could be ensured. With the scheduled completion of all 45 LPG stations in mid-2002, there is still ample time for the owners to make a decision as the application deadline for those diesel PLBs aged more than 10 years is end-2003 and that for those diesel PLBs aged below 10 years is end-2004.

13. On electric light buses, the Administration is aware that there are constraints in installing charging facilities for electric light buses on most of the green PLB terminus due to lack of space and technical problems arising from the presence of underground utilities. However, the Administration will provide assistance to PLB operators who are interested in replacing their diesel light buses with electric models in setting up charging facilities where practicable.

### Repair and maintenance

14. The transport trade has emphasized the need to provide adequate maintenance facilities and vehicle workshops to tie in with the implementation of the programme.

15. According to the Administration, only those repair and maintenance works involving the fuel system of an LPG light bus need to be carried out in approved LPG vehicle repair workshops for safety reason. Among the 25 LPG vehicle repair workshops in operation or under construction, most are relatively small and not run by the vehicle suppliers. Other repair and maintenance works that do not involve the LPG fuel system, i.e. most of the works, including changing tires, air filters, brake linings, and lubricating oil, can be carried out in ordinary vehicle repair workshops. Indeed, the repair and maintenance requirements of LPG and diesel light buses are similar. As such, there should be little difference in the time taken to repair and maintain the two types of vehicles. The supply of parts depends on the manufacturers and suppliers. As the number of LPG light buses increases, it is expected that the market for the supply of parts for repair and maintenance will increase correspondingly.

16. As for electric light buses, the Administration has advised that ordinary light bus workshops would be capable of maintaining and repairing electric light buses.

### Availability of LPG light buses

17. Doubt has been cast on the availability of LPG light buses in the market to ensure operators' choice. To this end, the PLB trade has requested the Administration to relax the weight limit of light buses to more than 5 tonnes so as to enable a wider choice of vehicles in the market.

18. The Administration has advised that it has already written to the Motor Traders Association of Hong Kong to urge its members to make available more light bus models, including LPG light buses, for the Hong Kong market. With the planned relaxation of the current light bus weight limit of 4 tonnes to 5 tonnes, the Administration expects that more vehicle manufacturers will consider supplying LPG light buses for the Hong Kong market.

### Viability of PLB operation

19. It is noted that some PLB operators would experience a net income reduction because of loss in business time owing to longer travelling distances for refilling and more frequent refillings. To improve the viability of operation, some PLB organizations have requested the Administration to

increase the seating capacity of PLBs and to improve the geographical distribution of LPG stations.

20. To address the problem of net income reduction because of loss in business time owing to longer travelling distances for refilling and more frequent refillings, the Administration has advised that it has examined the following options for addressing the problem but considered them not practicable:

- (a) improving geographical distribution of LPG stations – because of safety requirements, it will not be possible to provide LPG stations close to all PLB routes;
- (b) acceding to the request of some PLB operators to increase PLB seating capacity – this will have serious traffic and transport implications; and
- (c) allowing a fare increase – only green PLB fares are regulated and 2-12% fare increase will be required to compensate the net income reduction. This will create a burden on the community.

21. Since there is no feasible solution for the income reduction that will be experienced by some PLB operators, the Administration considers that a mandatory replacement scheme of diesel light buses should not be pursued.

#### Emission standards

22. To ensure a voluntary replacement scheme is put in place, the PLB trade has expressed concern that the Administration should not seek to tighten the emission standard for existing Euro II diesel light buses to deter the continued use of such vehicles.

23. The Administration has advised that when it submitted the proposal to the Legislative Council in May 2001 to upgrade the emission standards of newly registered vehicles to Euro III, it had informed the Council that diesel light buses were deliberately excluded from the relevant amendment regulation pending the way forward on alternative-fuel light buses. As the Administration now proposes to encourage light buses to replace their vehicles with LPG or electric ones, and to allow the continued use of diesel light buses, the emission standard for newly registered diesel light buses is proposed to be upgraded to Euro III.

24. As regards the balance of interests between owners and drivers of PLBs, the Administration has advised that there are different modes of commercial arrangements among owners and drivers in the PLB trade. Some owners are also drivers themselves; some owners employ drivers to operate the PLBs while

some rent out their vehicles. The proposed scheme will not undermine the interests of drivers who are employees or rentees of the vehicles vis-à-vis the owners as the wages or rental are determined by market forces which is no different from the current arrangement. It is worth noting that one of the factors affecting the rental of a PLB is the age of the vehicle because a newer vehicle usually has a better performance and requires less frequent maintenance. Rentee drivers can choose to rent the type of light buses most suited to their needs and from whom they wish to rent the vehicles.

Legislative Council Secretariat

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