For discussion **FCR(2006-07)41**
on 9 February 2007

ITEM FOR FINANCE COMMITTEE

HEAD 44 – ENVIRONMENTAL PROTECTION DEPARTMENT
Subhead 700 General non-recurrent
New Item "One-off grant to encourage early replacement of pre-Euro and Euro I diesel commercial vehicles with new ones complying with the prevailing statutory emission standard"

Members are invited to approve the creation of a new commitment of $3,176 million for providing a one-off grant to encourage owners of pre-Euro and Euro I diesel commercial vehicles to replace their vehicles with new ones complying with the prevailing statutory emission standard.

PROBLEM

Diesel vehicles are the dominant source of air pollution at the street level in Hong Kong. It is necessary to adopt practical measures to reduce their emissions so as to improve roadside air quality.

PROPOSAL

2. The Director of Environmental Protection, with the support of the Secretary for the Environment, Transport and Works, proposes to create a new commitment of $3,176 million for providing a one-off grant to encourage the early replacement of pre-Euro and Euro I diesel commercial vehicles with new commercial vehicles complying with the prevailing statutory emission requirement for registration of new vehicles, which is currently Euro IV emission standard. Pre-Euro vehicles refer to those vehicles first registered before 1 April 1995, whereas Euro I vehicles are those first registered between 1 April 1995 and 31 March 1997 for buses and goods vehicles over four tonnes, and between

1 April 1995 and 30 September 1998 for other diesel commercial vehicles. For the purpose of this incentive scheme, "commercial vehicles" include light/medium/heavy goods vehicles, private/public light buses, and private/public non-franchised buses.

3. Under the proposal –

Encl. 1

(a) a one-off grant of the amount set out at Enclosure 1 will be provided to vehicle owners for scrapping their pre-Euro and Euro I diesel commercial vehicles and replacing them with new commercial vehicles complying with the prevailing statutory emission requirement for registration of new vehicles, which is currently Euro IV emission standard;

(b) the grant will be made available, upon the launching of the scheme, for 18 months for pre-Euro diesel commercial vehicles, except those pre-Euro vehicles over four tonnes of long-idling operational mode[1]; and three years for Euro I diesel commercial vehicles and those pre-Euro vehicles over four tonnes of long-idling operational mode; and

(c) the grant will be pegged to the category to which the original vehicle or the replacement vehicle belongs, whichever is the less.

JUSTIFICATION

Improvement to Roadside Air Quality

4. Road vehicles are the second largest source of air pollution in Hong Kong, contributing to 25% and 27% of the territory-wide emissions of respirable suspended particulates (RSP) and nitrogen oxides (NOx) respectively. Of the vehicle fleet, diesel commercial vehicles are key contributors to air pollution, accounting for 90% and 80% of the total vehicular emission of RSP and NOx respectively. The emission data of all vehicles vis-à-vis diesel commercial vehicles are at Enclosure 2. Compared with their actual numbers, pre-Euro and Euro I diesel commercial vehicles account for a disproportionately large share of emissions from the diesel commercial vehicle fleet –

Encl. 2

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[1] From June to December 2005, the Government implemented an incentive scheme offering a one-off grant for pre-Euro diesel vehicles over four tonnes of long-idling operational mode to install emission reduction devices. A total of 2 333 eligible vehicles had been retrofitted under this scheme. With effect from 1 April 2007, it will also become a statutory requirement for this type of vehicles (except cross-boundary vehicles) to be installed with emission reduction devices. As these devices have a service life of five years, we recommend a longer replacement period (viz. three years as Euro I diesel commercial vehicles) for these vehicles.

Euro Grading	% of the diesel fleet	% contribution to RSP emission	% contribution to NOx emission
Pre-Euro	36	60	51
Euro I	17	18	15
Euro II and Euro III	47	22	34

5. Compared with their Euro IV counterparts, pre-Euro vehicles emit 30 times more RSP and two times more NOx whereas Euro I vehicles emit 15 times more RSP and 1.5 times more NOx. If all pre-Euro and Euro I diesel commercial vehicles are replaced by Euro IV models, the vehicular emissions of RSP and NOx will be reduced by 74% and 38% respectively. The territory-wide emissions of RSP and NOx will be reduced by 18% and 10% respectively. If the background air pollution level remains unchanged, the emission reduction resulted from the phasing out of all the pre-Euro and Euro I diesel commercial vehicles will bring marked improvement to roadside air quality.

The Proposed Incentive Levels

6. There are at present some 74 000 pre-Euro and Euro I diesel commercial vehicles registered with the Transport Department. As one of the policy initiatives to improve the air quality, the Chief Executive proposed in the 2006-07 Policy Address to offer a one-off grant to encourage owners of these old diesel commercial vehicles to replace their vehicles.

7. In the current fleet, many of the pre-Euro diesel commercial vehicles either exceed or are close to their normal service life (12 to 15 years). Their residual values could in theory be minimal. However, few owners will be willing to scrap them so long as they can still be used unless a financial incentive is given. Assuming that on average such vehicles can operate for one to two more years, it is proposed to set an incentive at 12% of the average vehicle taxable value of the newly registered vehicles in the same class[2]. The grant is comparable to the level of the First Registration Tax (15%) for medium and heavy goods vehicles.

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[2] The average vehicle taxable value is worked out on the basis of the taxable values of vehicles newly registered during the period from 1 June 2005 to 31 May 2006.

8. Euro I diesel commercial vehicles are relatively newer than pre-Euro ones and many of them are still within their normal service life. We propose to provide these owners with a grant at 18% of the average vehicle taxable value of the newly registered vehicles in the same class which is 50% higher than the proposed incentive level for pre-Euro vehicles. The grant serves to compensate the owners for their losses and to maintain the attractiveness of the scheme.

9. Light buses that run on electricity and liquefied petroleum gas (LPG) are more environment-friendly than diesel models. Making reference to an incentive scheme for electric/LPG public light buses completed in end-2005, we propose that the owner of a pre-Euro or Euro I diesel light bus will be eligible for an incentive of $80,000 for replacement with an electric light bus, and an incentive of $60,000 for replacement with a Euro IV LPG light bus. On the other hand, since there are a number of light buses providing services along routes which are not close to LPG filling stations, these operators would prefer diesel replacements. Therefore, we propose to offer an incentive at the level of $40,000 to encourage them to replace their pre-Euro and Euro I diesel light buses with Euro IV diesel models. The different levels of incentives for electric, LPG and diesel light buses reflect their relative order of environmental benefits.

FINANCIAL IMPLICATIONS

Non-recurrent Expenditure

10. It is estimated that the proposed scheme will cost the Government some $3,176 million if all eligible vehicle owners take up the grant. The detailed calculations are set out at Enclosure 3. Subject to Members' approval, our plan is to start accepting applications for the one-off grant on 1 April 2007. The estimated cash flow is as follows –

Encl. 3

2007-08 $ million	2008-09 $ million	2009-10 $ million	Total $ million
700	1,700	776	3,176

Recurrent Expenditure

11. The proposal has no additional recurrent financial implications. The Transport Department will be primarily responsible for the administration of the scheme and will absorb the work with its existing resources.

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PUBLIC CONSULTATION

Views from the Transport Trades and Vehicle Suppliers

12. We consulted the relevant transport trades about the proposal from mid October to early December 2006. They are all in support of the proposal and some of them have raised the following suggestions –

(a) the Government should not compel the retirement of pre-Euro and Euro I diesel commercial vehicles by legislation or other means;

(b) vehicle owners who have already scrapped their pre-Euro or Euro I diesel commercial vehicles and replaced them with Euro IV commercial vehicles before the commencement of the scheme should also be eligible for the grant;

(c) the grant should remain pegged to the category to which the original vehicle belongs even if the replacement vehicle belongs to a category with a lower incentive level;

(d) the one-off grant should be doubled and the incentive period should be extended to three and six years for pre-Euro and Euro I vehicles respectively for cross-boundary diesel commercial vehicles;

(e) eligible vehicle owners should not be required to acquire replacements, and in other words, they should be given the grant solely for scrapping their vehicles; and

(f) the vehicle manufacture date or the engine emission design standard rather than the date of the first registration of a vehicle should be taken as the criterion for determining the eligibility for the grant, including distinguishing pre-Euro and Euro I vehicles. Their argument is that during the transition to a tighter emission standard, some vehicles that met the new standard entered the market earlier than the introduction of the new standard, while some vehicles that met the old standard might still be on sale after introducing the new standard because of stock clearance[3].

13. We have carefully considered the views summarised in paragraph 12 above. Our response is set out below –

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[3] This stock clearance arrangement is an international practice, which has also been adopted in Hong Kong with the Director of Environmental Protection exercising the exemption provision as provided in the Air Pollution Control (Vehicle Design Standards) (Emission) Regulations (Cap. 311J).

(a) the Government has no plans to make the retirement of pre-Euro and Euro I diesel commercial vehicles mandatory. Vehicle replacement can be a heavy financial burden to operators because of its substantial capital investment. If these vehicles are mandated to retire, those who cannot afford to replace their vehicles will be forced to go out of business;

(b) the purpose of the proposed incentive scheme is to encourage owners of pre-Euro and Euro I diesel commercial vehicles to replace their vehicles. There is no such encouraging effect by providing the grant to those who have already replaced their vehicles before the scheme comes into effect;

(c) pegging the amount of the grant to the category of the original vehicles irrespective of what replacement vehicles the owners purchase will enable the vehicle owners concerned to pocket part of the grant if vehicles with a lower incentive level are acquired as replacements. This is not in conformity with the purpose of the grant scheme and the principle of public finance management;

(d) the incentive levels are worked out based on the average taxable values of pre-Euro and Euro I vehicles. The proposed incentive levels aim to compensate the loss of the vehicle owners and maintain the attractiveness of the scheme on the one hand and to ensure prudent use of public funding on the other. We do not consider that there is a good case to deviate from the above principle for cross-boundary diesel commercial vehicles. We also have reservation on the extension of the grant period because such extension will defeat the purpose of encouraging early replacement of these polluting vehicles with new Euro IV vehicles or any more advanced models (such as Euro V vehicles) in view of the prevailing statutory emission standard during the validity period of the proposed incentive scheme;

(e) the purpose of the proposed incentive scheme is to help those who will stay in the business but not to provide extra cash for those winding up their business. Hence, the acquisition of eligible replacement diesel commercial vehicles (i.e. Euro IV vehicles based on the current standard) will be a pre-requisite for the grant; and

(f) vehicles seeking first registration will have to observe the emission standards set out in the Air Pollution Control (Vehicle Design Standard) (Emissions) Regulations (Cap 311J). Thus, the first registration date of vehicles can distinguish them on the basis of the different emission requirements prevailing at the time of their first registration. It is a convenient tool for distinguishing vehicles for the

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purpose of the proposed incentive scheme. Moreover, it is easy to be understood by vehicle owners, who can plan for the replacement of their pre-Euro and Euro I diesel commercial vehicles accordingly. The same approach was adopted with success in the incentive schemes for the installation of emission reduction devices in pre-Euro diesel vehicles and in mandating the installation in the past. It will also be adopted when the installation of emission reduction devices becomes a statutory requirement for pre-Euro diesel vehicles over four tonnes of long-idling operational mode (except cross-boundary vehicles) with effect from 1 April 2007.

14. We have also consulted vehicle suppliers including the Hong Kong Motor Traders Association (HKMTA), the Right Hand Drive Motors Association and authorised dealers who are not HKMTA members. They are all in support of the proposal. We understand that the suppliers are making available more Euro IV diesel commercial vehicles on the market to coincide with the implementation of the incentive scheme.

Consultation with Legislative Council

15. We consulted the Legislative Council Panel on Environmental Affairs about the proposal on 20 December 2006. Some Members raised concerns about the cost effectiveness of the incentive scheme, especially when there would not be any disincentives to the use of pre-Euro and Euro I diesel commercial vehicles. Given the substantial funding involved, the meeting decided to convene a special meeting on 5 January 2007 to collate views from stakeholders, including the affected trades and green groups.

16. At the special meeting on 5 January 2007, most of the deputations did not object to the proposed scheme. However, in addition to the effectiveness of the scheme in improving the air quality, some of them were also concerned that the grant would eventually benefit the vehicle dealers instead of the vehicle owners and whether sufficient Euro IV models would be available in the market.

17. On measures to prevent vehicle dealers from profiteering from the scheme, we will continue to count on the free market mechanism and will not interfere with the pricing of vehicles.

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18. Regarding the supply of Euro IV vehicles, major vehicle suppliers have already put on the local market their Euro IV diesel commercial vehicles since the emission standard was made mandatory for newly registered diesel commercial vehicles over 3.5 tonnes on 1 October 2006. The Environmental Protection Department has already approved 168 Euro IV diesel commercial vehicle models
Encl. 4 up to 31 January 2007, the breakdown is set out at Enclosure 4. More Euro IV commercial vehicle models will be approved in coming months. Vehicle owners should not have any problem acquiring Euro IV commercial vehicles suitable for their operation.

19. Vehicle suppliers have advised that vehicle prices are determined by market competition, economic situation and sales strategy but not vehicle emission standards. To maintain competition in the market, we will continue to make our requirements for new vehicles fair and transparent. This will help vehicle suppliers provide compliant vehicles on the local market.

BACKGROUND

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

(a) introduce clean alternatives to diesel vehicles where practicable;

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

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

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

21. Since 1999, we have provided one-off grants to encourage diesel taxi and public light bus owners to replace their vehicles with LPG ones, introduced ultra-low sulphur diesel, increased the fixed penalty for smoky vehicles, tightened the emission requirements for newly registered vehicles in step with the European Union, and provided one-off grants to assist owners of pre-Euro diesel vehicles to install emission reduction devices on their vehicles. The current proposal to provide a one-off grant to encourage the early replacement of pre-Euro and Euro I diesel commercial vehicles with new vehicles complying with the prevailing statutory emission standard (i.e. Euro IV models based on the current standard) forms part of the overall strategy to achieve our clean air objective.

Environmental Protection Department
February 2007

Incentive Levels

Incentive for goods vehicles

Goods vehicle	Designed Weight (W)	Pre-Euro	Euro I
Light goods vehicle (non-van type)	W ≦1.9 t	$17,000	$25,000
	1.9 t＜W≦5.5 t	$29,000	$43,000
Light goods vehicle (van type)	W≦1.9 t	$10,000	$14,000
	1.9t＜W≦5.5 t	$20,000	$30,000
Medium goods vehicle	5.5t＜W≦10 t	$34,000	$51,000
	10t＜W≦13 t	$41,000	$61,000
	13t＜W≦16 t	$52,000	$77,000
	16t＜W≦24 t	$65,000	$97,000
Heavy goods vehicle	24t＜W	$76,000	$113,000

Remark : *For weight, the unit "t" means tonnes.*

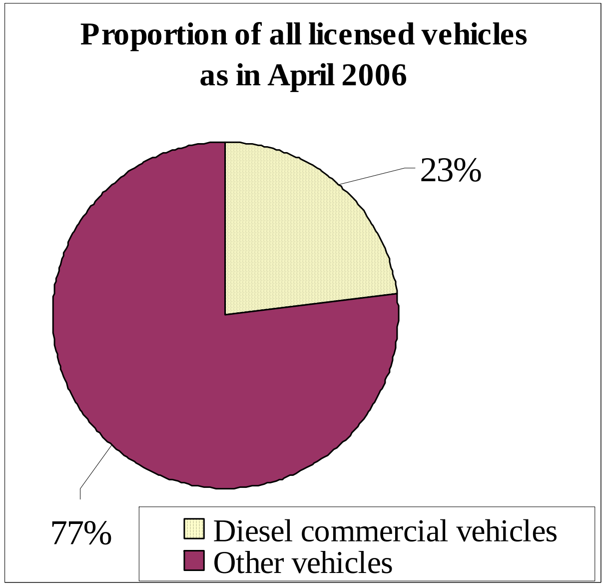
Incentive for non-franchised public buses and private buses

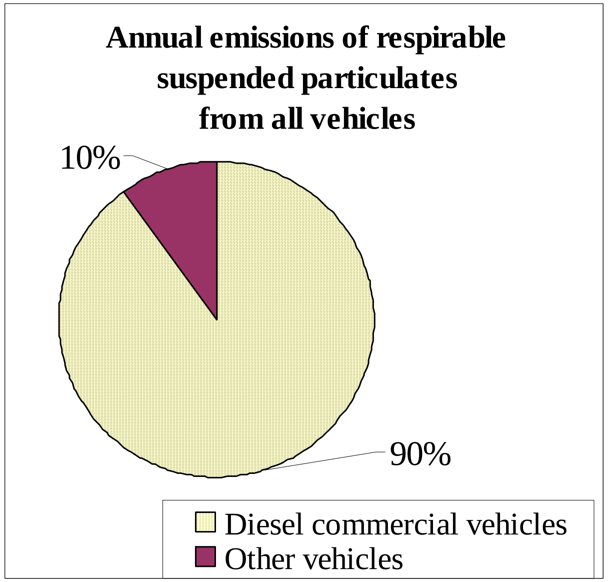
Non-franchised public buses and private buses	Pre-Euro	Euro I
17- 30 seats	$48,000	$73,000
31 seats and above	$115,000	$173,000

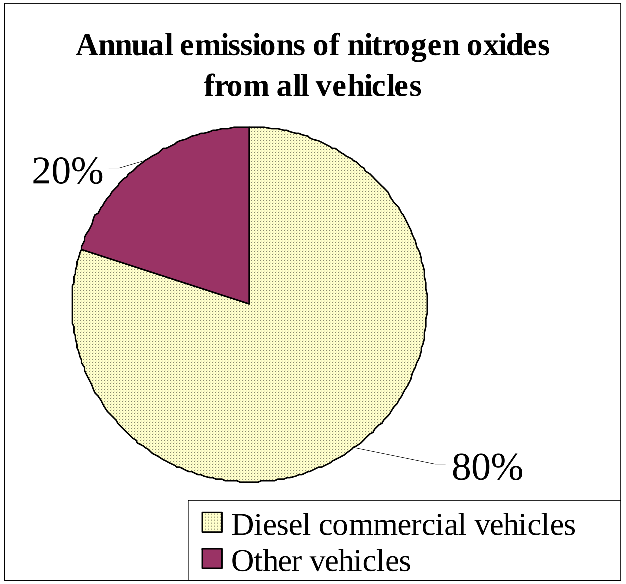
Incentive for public light buses and private light buses

In-use old diesel light buses	Replacement (Including public and private light buses)		
	Electric light bus	Euro IV LPG light bus	Euro IV diesel light bus
Pre-Euro and Euro I	$80,000	$60,000	$40,000

Distribution of all licensed vehicles by vehicle types and their emission contributions

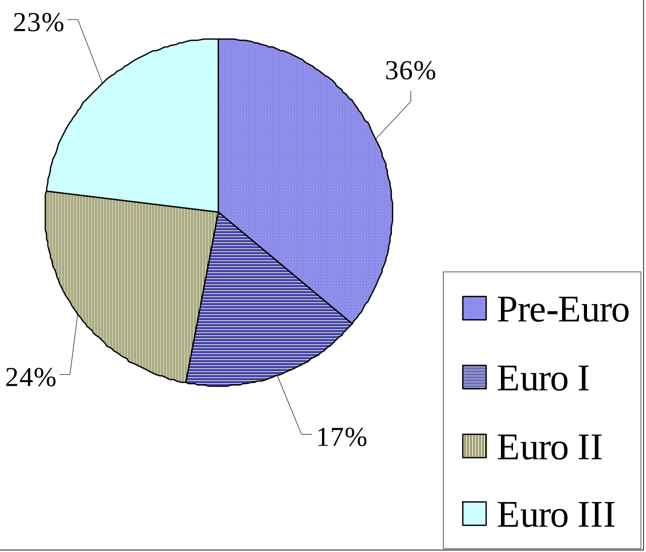




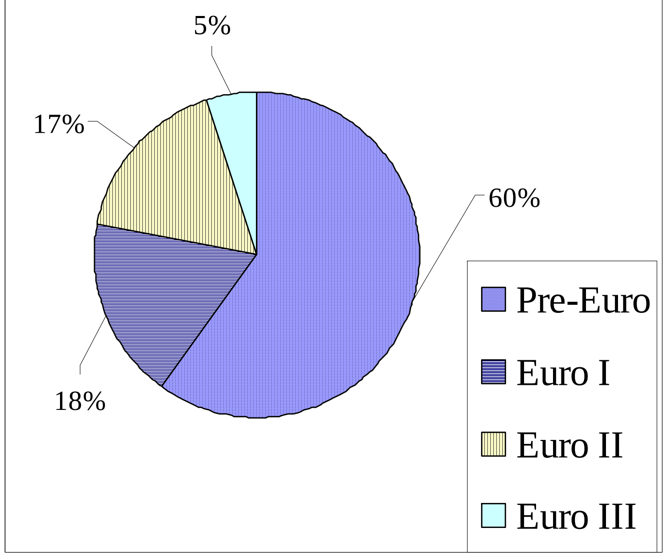


Diesel commercial vehicles by emission standards and their emission contributions

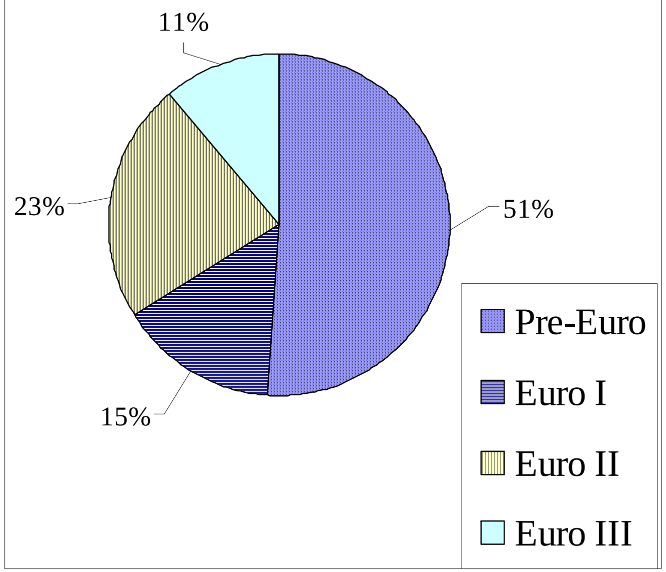
Diesel commercial vehicles by EU emission standards



Annual emissions of respirable suspended particulates from diesel commercial vehicles



Annual emissions of nitrogen oxides from diesel commercial vehicles



Details of Non-recurrent Expenditure

Vehicle types	Average taxable value [A] ($)	Pre-Euro			Euro I			Total incentive [H]=[D]+[G] ($)
		No. of vehicles [B]	Incentive per vehicle [C]=[A]x12% ($) [Note 1]	Subtotal [D]=[B]x[C] ($)	No. of vehicles [E]	Incentive per vehicle [F]=[A]x18% ($) [Note 1]	Subtotal [G]=[E]x[F] ($)	
Public and private light buses	N.A.	1 100	Note 2	**55,000,000**	1 000	Note 2	**50,000,000**	**105,000,000**
Light goods vehicles (non-van type, weight ≦ 1.9t)	140,000	1	17,000	**17,000**	0	25,000	**0**	**17,000**
Light goods vehicles (non-van type, 1.9t< weight ≦ 5.5t)	240,000	13 300	29,000	**385,700,000**	7 500	43,000	**322,500,000**	**708,200,000**
Light goods vehicles (van type, weight ≦ 1.9t)	80,000	800	10,000	**8,000,000**	0	14,000	**0**	**8,000,000**
Light goods vehicles (van-type, 1.9t< weight ≦ 5.5t)	165,000	12 325	20,000	**246,500,000**	10 200	30,000	**306,000,000**	**552,500,000**
Medium goods vehicles (5.5t < weight ≦ 10t)	284,000	2 200	34,000	**74,800,000**	300	51,000	**15,300,000**	**90,100,000**
Medium goods vehicles (10t < weight ≦ 13t)	340,000	1 300	41,000	**53,300,000**	400	61,000	**24,400,000**	**77,700,000**
Medium goods vehicles (13t < weight ≦ 16t)	430,000	11 700	52,000	**608,400,000**	2 400	77,000	**184,800,000**	**793,200,000**

Vehicle types	Average taxable value [A] ($)	Pre-Euro			Euro I			Total incentive [H]=[D]+[G] ($)
		No. of vehicles [B]	Incentive per vehicle [C]=[A]x12% ($) [Note 1]	Subtotal [D]=[B]x[C] ($)	No. of vehicles [E]	Incentive per vehicle [F]=[A]x18% ($) [Note 1]	Subtotal [G]=[E]x[F] ($)	
Medium goods vehicles (16t < weight ≦ 24t)	540,000	4 100	65,000	**266,500,000**	1 700	97,000	**164,900,000**	**431,400,000**
Heavy goods vehicles (24t < weight)	630,000	1 200	76,000	**91,200,000**	500	113,000	**56,500,000**	**147,700,000**
Non-franchised public buses and private buses (17-30 seats)	404,000	460	48,000	**22,080,000**	460	73,000	**33,580,000**	**55,660,000**
Non-franchised public buses and private buses (31 seats and above)	960,000	675	115,000	**77,625,000**	746	173,000	**129,058,000**	**206,683,000**
TOTAL		**49 161**		**1,889,122,000**	**25 206**		**1,287,038,000**	**3,176,160,000** **Say $3,176 million**

Note
(1) Rounded to nearest thousand.
(2) An incentive of $80,000, $60,000 and $40,000 will be provided for a replacement light bus with an electric, Euro IV LPG and Euro IV diesel model (or model complying with the prevailing statutory emission standard) respectively. We assume 50% replacement vehicles are Euro IV LPG models while the remaining 50% are Euro IV diesel models.

Remark : For weight, the unit "t" means tonnes.

Enclosure 4 to FCR (2006-07)41

Number of approved Euro IV diesel vehicle models
(up to 31 January 2007)

Goods vehicles

Goods vehicle	Designed weight(W)	No. of Euro IV models
Light goods vehicle	W ≦5.5 t	61
Medium goods vehicle	5.5t＜W≦10 t	37
	10t＜W≦13 t	9
	13t＜W≦16 t	13
	16t＜W≦24 t	26
Heavy goods vehicle	24t＜W	7
Total		**153**

Remark *: For weight, the unit "t" means tonnes.*

Non-franchised public or private buses

Bus model	No. of Euro IV models
17- 30 seats	4
31 seats and above	6
Total	**10**

Public or private light buses

Replacement type	No. of Euro IV models
Electric light bus	N/A(Note)
Diesel light bus	5
Total	**5**

Note : Electric light bus does not require emission type approval due to zero emission.
