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22 April 2009

Clerk to LegCo Panel on Environmental Affairs
Legislative Council Secretariat
3/F, Citibank Tower
Garden Road,
Hong Kong
(Attention : Miss Becky YU)

Dear Miss YU,

Panel on Environmental Affairs
Meeting on 24 November 2008

Early Replacement of Old Commercial Vehicles

In response to a request raised at the meeting of the Panel on Environmental Affairs held on 24 November 2008, we would like to provide the following additional information for Members' information: -

(a) **Basis for arriving at the percentage emission from diesel commercial vehicles**

The percentage emissions of respirable suspended particulates (RSP) and nitrogen oxides (NOx) emissions from diesel commercial vehicles are estimated based on the respective emissions of various vehicle classes. The emissions are estimated by using the EMFAC model developed by the U.S. California Air Resources Board (CARB). In its emission estimation for each vehicle class, the model will take account of the number of vehicles designed to various emission standards and their ages, the activity data such as mileages, and the average weather conditions of the year.

(b) **Problems associated with Euro IV diesel vehicles, and the progress of improvement made so far**

The major concerns of the transport trade over Euro IV minibuses/small buses are the seepage of diesel into their lubricating oil and the frequent regeneration of the diesel particulate filters (DPFs) on manual mode, which requires idling the vehicle for a typical period of 20 to 30 minutes.

Since April 2008, when the above problems were first made known to us, we have been following up with the transport trade and the authorized agents of the vehicle manufacturers through tripartite meetings (i.e. the relevant transport trade, the respective vehicle manufacturer and the Environmental Protection Department). So far, a total of 6 tripartite meetings have been held with various transport trade groups and the latest one was held on 19 March 2009. To better understand the problems, the vehicle manufacturers had sent their engineers to Hong Kong.

Below are a further elaboration of the problems and the progress in resolving them -

(1) **Seepage of diesel into lubricating oil**

To meet the tighter particulate emission limit of Euro IV emission standard, this new generation of diesel light buses/small buses are equipped with diesel particulate filters (DPFs), which are very effective in reducing particulate emissions. However, they need to go through a regeneration process from time to time to burn out the trapped particulates. This is done by injecting a little more fuel into the engine to raise the temperature of the exhaust gas. In doing so, a very small amount of diesel could seep into the lubricating oil. In the early stage of their introduction, some Euro IV diesel light buses or small buses experienced an excessive seepage of diesel into their lubricating oil.

There are two major suppliers of these vehicles. One of them has modified the engine control units (ECU) of his light buses/small

buses to resolve the problem. Since the installation of the modified ECUs in his light buses/small buses that are in use, the supplier has received no further complaints from the trade. Its new light buses/small buses are also supplied with the modified ECU. As for the other supplier, it has just installed a new ECU on three light buses to reduce the amount of diesel seepage into the lubricating oil in early April 2009. If successful, this supplier will extend the modification to the other light buses/small buses that are in use.

(2) Frequent regeneration of DPFs on manual mode

DPFs need to be regenerated from time to time to burn out the excess carbon particulates. When a sufficiently high exhaust temperature is attained – usually at high speed operation, the vehicle is able to carry out this procedure automatically. However, in a predominantly urban driving mode, where “stop-and-go” operation prevails, the regeneration will have to be initiated manually by the driver, and the process takes typically 20 to 30 minutes to complete. Occasionally, some drivers need to regenerate two to three times a day.

The vehicle supplier that has resolved the problem of diesel seepage into lubricating oil has also overcome at the same time the problem of excessive manual DPF regeneration because of the modified ECU.

The other supplier is attempting to resolve the excessive manual DPF regeneration problem by his new CPU. Its local agent will monitor its effectiveness.

We will continue to assist the trade in following up on the improvements.

- (c) **Can vehicle owners apply for the "Small and Medium Enterprises Loan Guarantee Scheme" when they replace their existing commercial vehicles?**

Vehicles owners who meet the eligibility criteria of the "Small and Medium Enterprises Loan Guarantee Scheme" and / or the "Special Loan Guarantee Scheme" may also apply for Government guarantee for loans obtained from the participating lending institutions of the above two Schemes. Details can be found from Trade and Industry Department' website www.smefund.tid.gov.hk.

Yours sincerely,



(Edmond Kaman HO)
for Director of Environmental Protection

cc:
CEO(CBD)/ EPD
Director-General of Trade and Industry
(Attn : Mr Simon Chan) (Fax: 2375 7105)