

Providing a one-off grant to encourage owners of pre-Euro and Euro I diesel commercial vehicles to early replace their vehicles

The Administration's Response to the Submission of Clear the Air

Question 1: Was the minibus fleet actually replaced early with LPG vehicles on average?

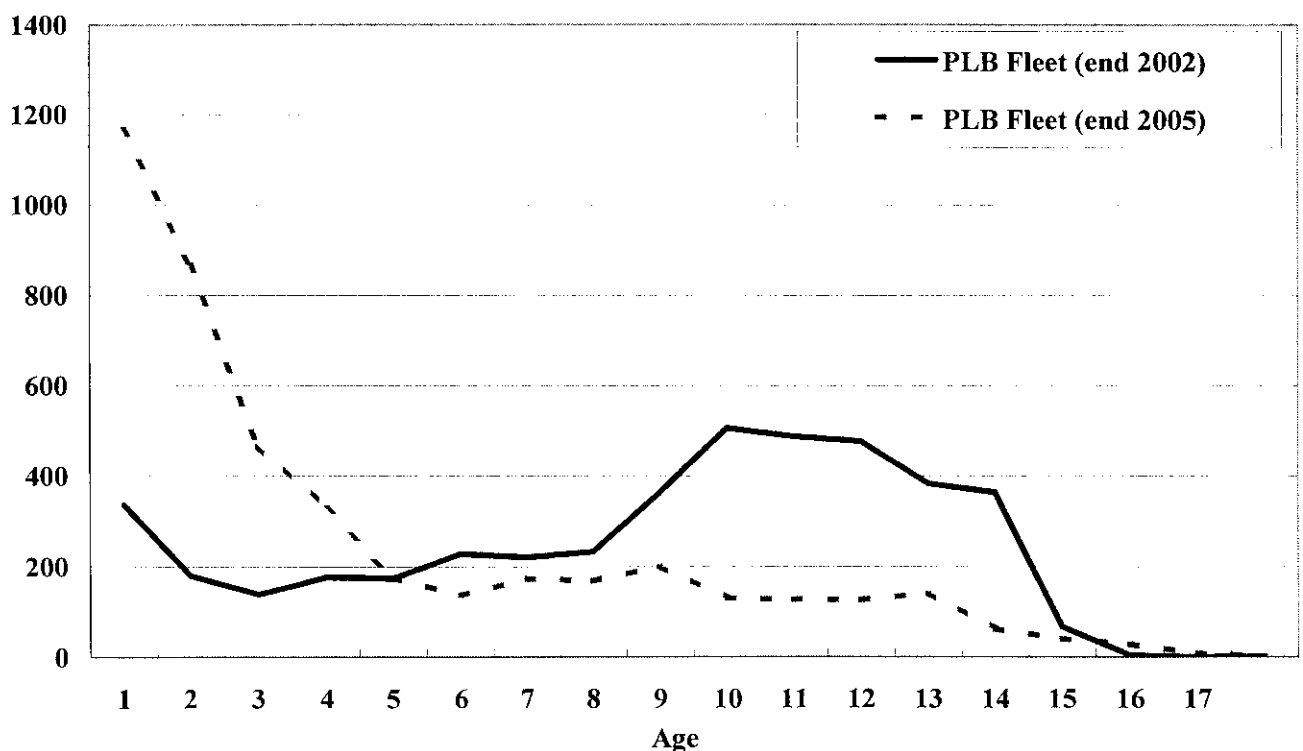
The one-off grant scheme had successfully encouraged the early replacement of diesel public light buses.

Immediately before the scheme was launched, the average ages of the green and the red public light bus fleet were 8 years and 10 years respectively. At the end of the incentive scheme, the average age of the green and red public light bus fleet had dropped significantly to 4 years.

The vehicle age profiles of the public light bus fleet at the commencement and completion of the incentive scheme are set out in the chart below. It clearly shows that the incentive scheme has substantially rejuvenated the public light bus fleet.

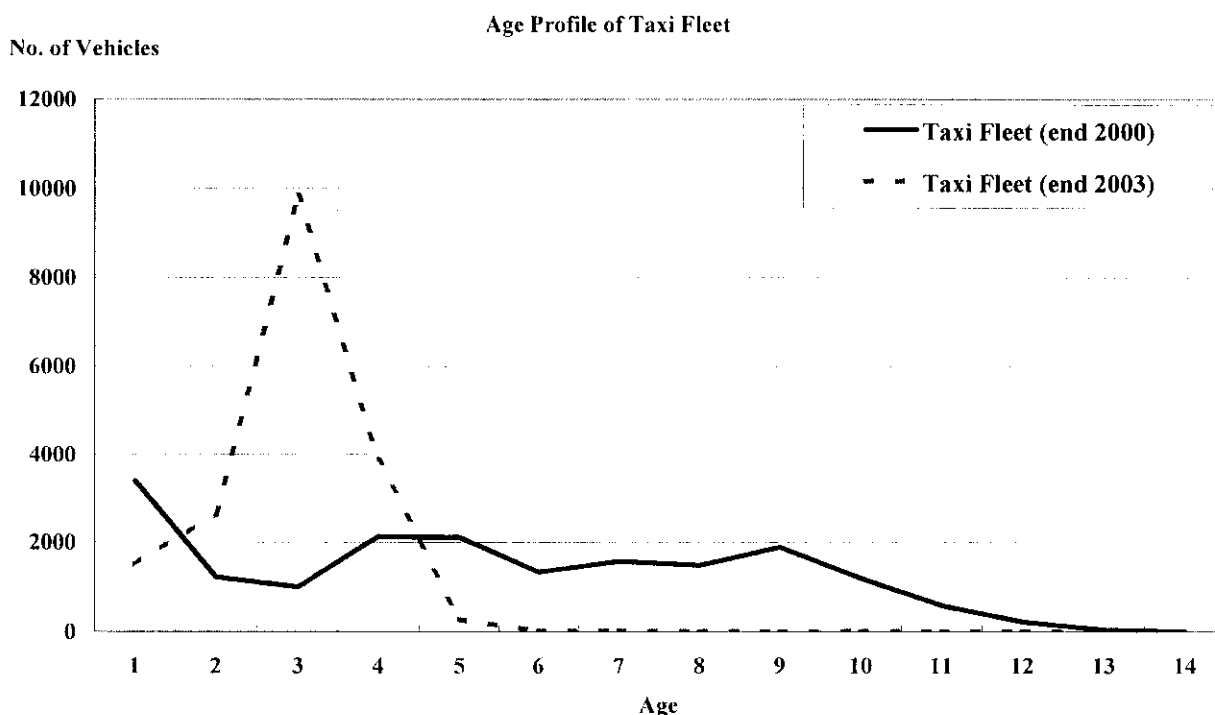
Age Profile of Public Light Bus (PLB) Fleet

No. of Vehicles



Question 2: Has a voluntary programme like the one proposed proven effective elsewhere? If so, where?

We do not have information on the effectiveness of similar incentive schemes in other countries. However, our incentive schemes for LPG taxis and light buses had been very successful in encouraging the early replacement of the polluting vehicles. Similar to the light bus case shown in the answer to Question 1, the following vehicle age profiles for taxis at the commencement and completion of the LPG taxi incentive scheme also show that the scheme had substantially rejuvenated the taxi fleet.



Question 3: How much is taxpayer being asked to pay per tonne of pollution avoided? And how does that cost compare with international experience and the recent Guangdong emissions trading scheme?

Under the proposed incentive scheme, the average cost for reducing one tonne of nitrogen oxides (NO_x) and one tonne of respirable suspended particulates (RSP) are \$340,000 and \$2,000,000 respectively. These costs should not be compared with those of emissions trading because the proposal and emissions trading are targeting at different air pollution problems. The former is to improve roadside air quality whereas the latter is to address regional air pollution problems caused mainly by power stations. Reducing power plant emissions would have little effect on roadside air quality which have a more direct and immediate impact on our citizens.

Since 2000, the Administration has embarked on a number of vehicular emission control measures, which have produced results. As compared with 1999, the NOx and RSP levels at the roadside had been reduced by 19% and 13% respectively in 2006. To further reduce roadside air pollution, the new measures will likely be more costly as other "cheaper" options have been implemented. Nevertheless, the Administration is determined to take every practicable measure for the further improvement. The present proposal is one of the measures.

Question 4: Clear The Air was "officially" consulted by the Environmental Protection Department (EPD). Conservancy Association made a submission to the LegCo Panel on Environmental Affairs

The two submissions are attached at **Annexes A and B**. The views contained in the two Annexes are the same as those in the latest submission from Clear The Air.

Questions 5-7 make reference to the Audit Report issued by the Audit Commission in January 2005.

Question 5: How many qualified vehicles have been tested under the most stringent conditions in the past year?

Transport Department (TD) carries out annual inspection on diesel vehicles to ensure their roadworthiness and their smoke emissions meeting the statutory requirements under the Road Traffic (Construction and Maintenance of Vehicles) Regulations (Chapter 374A). The current statutory smoke requirement is that the maximum should not exceed 60 HSU. TD is now preparing the legislative amendment to tighten its smoke standard to 50 HSU, in line with EPD, with the aim of submitting the amendment proposal to the Legislative Council for approval in mid 2007.

Owing to space constraint, TD cannot have sufficient dynamometers to test the smoke emissions of all diesel vehicles on dynamometers. It randomly selects the diesel vehicles presented for annual inspection to undergo dynamometer test with the rest undertaking the free acceleration smoke test. In 2006, the total number of dynamometer test conducted for diesel vehicles was 4560. Among the 4560 tests, about 1700 tests were on pre-Euro diesel vehicles and about 1100 tests were on Euro I diesel vehicles. TD is installing an additional dynamometer for conducting smoke test, which is expected to start operation in the second quarter of

2007.

The dynamometer smoke test is EPD's standard smoke test for vehicles being spotted to emit black smoke. In 2006, EPD's smoky vehicle control programme had tested 3321 pre-Euro and 1777 Euro I vehicles.

Question 6: Regarding the promise (of TD) to strictly enforce the monitoring systems

TD has already strengthened the monitoring of executing of the smoke test in its roadworthiness examination on all diesel vehicles irrespectively whether they are designed to pre-Euro, Euro I or more stringent emission standards. Specifically –

- (a) TD's vehicle tester, instead of the vehicle driver, now insert the smoke sampling probe into the exhaust pipe.
- (b) TD has strengthened the monitoring of driver action in free acceleration test to make sure that the tests are carried out properly. As a standing practice, a TD tester will stand right by the door of the driver cab to monitor the accelerator speed.
- (c) TD has also instructed the inspection lane supervisor (Motor Vehicle Examiner) to enhance close supervision on Vehicle Tester's work. Surprise check would be conducted by more senior Motor Vehicle Examiner on the inspection quality randomly to ensure compliance with inspection procedures.
- (d) Furthermore, TD has installed 5 more tachometers in late 2005 on the diesel vehicle inspection lanes to measure the engine speed during free acceleration test to guard against tampering of engines.

The additional monitoring measures have been working well and no malpractice was detected.

Question 7: Smoke Test

The current smoke test of 60 HSU is worse than in Pakistan, according to the Audit Report. TD claims that it expects that the tighter smoke limit will take effect in early 2008.

Smoke standard is not the sole nor a reliable indicator of how effective an emission reduction programme is. Through EPD's smoky vehicle control programme, TD's annual roadworthiness inspection, the Police's enforcement actions and the introduction of the dynamometer smoke test, Hong Kong has reduced the number of smoky vehicles by about 80%

between 1999 and 2006.

Our successful experience has been recognised by other places and international bodies such as the World Bank and the Asia Development Bank's Clean Air Initiative for Asian Cities. Cities such as Singapore and South Korea have also made reference to our programmes to set up similar programmes.

The Government would continue these successful concerted efforts to tackle the problem of smoky vehicles from all fronts such that vehicles in operation, irrespective of whether they are the target vehicles under the proposed incentive scheme, should comply with our statutory smoke emission requirements.

As stated earlier, TD will introduce legislation to tighten its statutory smoke standard to the same level as EPD in mid 2007.

Environmental Protection Department
8 February 2007

Submission from Clear the Air (31 December 2006)

31 Dec, 2006

LcgCo Panel on Environmental Affairs
Special meeting - 5 January 2007

Re: Pre-Euro and Euro I diesel commercial vehicles "grants"

Honorable members,

Have the "incentive" grants for taxis and minibuses actually reduced air pollution more quickly than if the subsidy had not been established?

If they did reduce air pollution more quickly, how much did the taxpayer spend per unit of pollution that was not created?

This submission reviews the minibus and taxi incentive grants, calculates how much money was spent, where it was spent and shows if that money cost effectively reduced pollution.

We try to give an accounting of the money spent and offer an evaluation of the success or failure of the "grant" concept to successfully reduce pollution faster than existing laws normally would without any financial incentives.

Regards,

Annelise Connell
Chairperson
Clear The Air

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Executive Summary:

The money spent on "incentive" grants for taxis and minibuses was a failure of environmental economics. Pollution was not reduced faster than would have happened under existing law and natural business practice. However it did cost the Hong Kong taxpayer millions of dollars. The "incentives" failed for several reasons.

1. The money was given toward the purchase of new vehicles instead of being spent on the market value of the old vehicle. This means that the Government paid far more than the actual market value of the old vehicle being replaced, guaranteed payment of an abnormally high market value (established by the subsidy) even if the vehicle was left on the road for several years after the subsidy was introduced. The actual "incentive" was now to leave the polluting vehicle on the road as long as possible because the "purchase" price was the same whenever it was retired and it could even be left on the road after the subsidy had ended -- with perhaps a new subsidy offered.

2. There was no calculation of how many months or years worth of pollution was actually reduced because of the payment. The numbers suggest that natural attrition and, in the case of taxis, the change in law, achieve the results. The subsidy did not contribute at all.

Note: Members should require this calculation be presented to them before considering any further "polluter profits" proposals.

3. These policies, initiated under a weak government, established a precedent that polluters, rather than being responsible members of society, may instead extort large amounts of money from the government in exchange for supporting government policies that costs the polluter nothing to implement and do not reduce pollution more quickly than normal business practice under existing laws.

There is a more economically sound and more cost effective way to use taxpayer money to reduce diesel pollution more quickly without needing the support of any industry.

Government must first declare that all vehicles on the road must be of a certain standard, for example Euro II by 2008. Then the true market value of the oldest and most polluting vehicles should be calculated based on existing transactions. This protects the government from claims by vehicle owners that they are being deprived of their property rights. Government can then offer to purchase those vehicles outright -- and scrap them -- at or even slightly above their true competitive market price. This economic model guarantees fair compensation under true market conditions to owners of old vehicles.

In this way, Government pays the fair price for an asset that is causing significant health problems to the Hong Kong people and makes sure society is protected. Vehicle owners get the fair market value for their property and so special interest groups do not need be paid off to gain their political support.

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Why previous subsidies failed to reduce pollution faster

The Industry - Taxis

Taxi owners buy a new car every two years because they are driven 24 hours a day and they wear out quickly. The new law required that new taxis be LPG – and the industry fought against it. The money paid was to purchase support of the new law, not from taxi license holders (who got no money), but by those who owned the taxis. No vehicles were taken off the road early because of the subsidy – but the law was passed and now all taxis, by law and through natural attrition are LPG.

The Industry - Minibuses

The Government grants a license, called a Public Service License (PSL), to a company or person giving permission to operate one or more vehicles on a particular route for a particular purpose. What are commonly called green and red minibuses in Hong Kong are officially called Public Light Buses. Green minibuses operate on a fixed schedule with fixed prices and are under the control of the government while Red minibuses do not operate on a fixed schedule and their fares are not regulated by the Government.

The stated purpose of the minibus incentive was to encourage the holders of PSLs to use LPG minibuses instead of diesel ones to reduce the pollution that is blown directly into people's faces on our streets.

Little public accountability

The Grant "incentives", were paid to the vehicle owner to buy a new minibus, not the holder of the Public Service License or the person or company renting or leasing the vehicle. The true market value of the old minibus is unknown. Therefore, there was no "incentive" to convert early – but only replace on the original schedule, or even delay replacement until the very last minute of the incentive. We note that almost 10% of the minibuses were replaced only 4 months before the deadline of the "incentive".

Of the 152 companies that received grant money, only 50 actually run Green Minibus routes.

The number of individuals and how much money each received were NOT listed, and no information regarding Red minibuses was provided even though it was specifically requested.

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Bad result

Taxpayers paid out \$142.2 million on the minibus subsidy.

As of September 2005, 42% of the minibuses still had NOT converted to LPG, and 10% had replaced their minibuses with new diesels. Yet, according to the Environmental Protection Department 98% of minibus routes have an LPG station available.

As of Sep 2005, owners of 886 polluting old Red minibuses (over 40% of the total cash paid out) had received the grant money, but the Transport Department has provided no accountability for those Red minibus owners. In fact, EPD replied to us that

"Transport Department has not kept the information regarding the "type" of vehicles (i.e. red/green minibus)"

Only 14% of vehicles were retired before their natural end of life of 10 years. An unknown number were much older than 10 years.

This means that if you look at the money spent to replace minibuses that are under 10 years old, the "incentive" actually cost \$433,000 per minibus – 120% of their total replacement cost. Also, the EPD has no proof that these buses were scrapped – only that they were de-registered and that export licenses have not been obtained.

So, 86% of the subsidy, or \$122 million was paid to companies who did nothing to reduce pollution, yet still were paid the "incentive".

Conclusion

"Incentives" without laws to require compliance of all vehicles by a certain date does not reduce air pollution faster. Paying the market value of the old vehicle may be cost effective, but subsidizing a new vehicle is not.

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**Submission from The Conservancy Association
(3 January 2007)**

Submission on Government's Proposed Subsidy Scheme to Encourage
Replacing Pre-Euro and Euro-I Diesel Vehicles to Euro IV Vehicles

5 January 2007

Understanding of Government Scheme

1. Government proposes to spend HK\$3.176 billion to subsidize owners of diesel vehicles of pre-Euro and Euro-I standards to change their vehicles to Euro-IV standard. The main justification is that these vehicles are very dirty and emit a lot more air pollutants than the rest of the vehicle fleet in Hong Kong and the owners are not willing to replace their vehicles without a subsidy.
2. The amount of subsidy varies according to the scrap value of the vehicles. Subsequently, the older and smaller the vehicle, the lesser is the subsidy. Therefore, the smallest pre-Euro diesel vehicle gets the least money and the largest Euro-I vehicle gets the largest amount.
3. For light buses, as there are more options for replacement, i.e., Euro IV diesel, LPG and electric, the subsidy varies according to the cleanliness of the vehicle type. Subsequently, electric vehicle gets the largest subsidy and diesel vehicle gets the least.

Justifications of the Scheme

4. Government's logic of the scheme is that if we can replace the 49161 pre-Euro and 25206 Euro-I diesel vehicles with cleaner vehicles (Mainly Euro IV, partly LPG and Electric), there will be 74% and 38% less vehicle emissions of particulates and nitrogen oxides, implying cleaner air.
5. Majority of the 49161 pre-Euro diesel vehicles are very old (12 to 15 years) and have exceeded their normal operating life span. The Euro-I vehicles are close to the end of their operating life span (10 to 12 years). The pre-Euro vehicles should have been scrapped and the Euro-I vehicles should be retired very soon. Government's subsidy (average HK\$38377 for each pre-Euro vehicle and HK\$51160 for each Euro-I vehicle) is to expedite the phasing out of these vehicles.
6. There are some fundamental flaws of this logic: (a) this is totally against the principles of polluter pays which we persistently and Government occasionally uphold; (b) subsidizing the Euro-I vehicles is not effective at all compared to the case of pre-Euro vehicles – Government pays HK\$ 1.87 billion for 1044 tons of particulate and 4950 tons nitrogen oxides reduction (aggregate HK\$314,752 per ton) to pre-Euro vehicles but HK\$1.29 billion for 299 and 953 tons of these two pollutants (aggregate HK\$1,029,982 per ton) to Euro-I vehicles and (c) the subsidy to the light buses passes a very wrong message to these owners, i.e., there would be more rewards for not joining the LPG scheme before 2005 – remaining to use the diesel vehicle can still have a subsidy of HK\$40,000. This is unfair to those operators/ owners who listened to Government to switch their diesel vehicles to LPG version.

Dilemma

7. These flaws as said above develop "naturally" from the contradictions of Government's environmental policy and industrial/ commercial support policy. It is Government's long standing policy to support SMEs and that is why the tax on diesel is still lower than that on petrol although diesel in many aspects is more polluted than petrol.
8. The need to support these SMEs (including many diesel vehicle operators) is well understood as they provide many job opportunities. However, this support has a limit. SMEs cannot pose danger to public health and safety. Government and legislators have full responsibility to ensure public health and safety. There must not be any compromise.
9. The policy makers (Government and Legislative Council) must be very clear that public health is an uncompromised objectives and survival of SMEs is only one of the many constraints. We cannot put the carts in front of the horse. Otherwise, our community will be the same as triad society ruled by force and balance of benefits.

Our Counter-proposal

10. The citizens of Hong Kong certainly are not willing to see the money spent but the dirty air problem persists. The main problem of the Government's proposed subsidized scheme is that it is solely voluntary; the polluters have a freedom of not joining the scheme. They may even have a "reasonable expectation" of a better scheme for them if they do not join this time, same as the LPG scheme for light buses.
11. If these pre-Euro and Euro-I diesel vehicles produce 30 and 15 times more particulates and 2 and 1.5 times more nitrogen oxides than the current Euro-IV versions, it is highly likely that these vehicles do not pass a proper emission test. And, by tightening the law enforcement, not to mention the vehicle emission laws, most of these vehicles shall be forced out of the road. So, one of the logical options is to step up the law enforcement. As such, these vehicles have to undergo an annual emission test (at least for particulate and NOx emissions) for re-issuing of road license and more roadside emission tests should be performed.
12. Another tidier option is that the Transport Department will stop re-issuing the road license for these vehicles when this subsidy scheme expires.