

### **Hong Kong: Vehicular Related Air Pollution**

A set of measures aimed at significantly reducing air pollution produced by road vehicles:

- All vehicles must be maintained properly, no matter what fuel they use. The manufacturers recommended preventive maintenance scheme should therefore be adhered to. A properly maintained vehicle will burn less fuel and hence exhaust less pollution to the atmosphere.
- Motor mechanics / technicians need to be licensed. To best ensure good quality maintenance, mechanics and technicians need to be well qualified and appropriately skilled. A licensing system for motor mechanics and technicians, similar to that presently in place for electricians and gas installers, would therefore protect the public from the ‘ill effects’ of poor quality workmanship. The license should require the holder to have (i) a well-recognized academic qualification, (ii) be well trained / time served and, (iii) ensure a good level of skill.

*N.B. A wide range of Automotive Engineering courses are offered at the Hong Kong Institute of Vocational Education (Lee Wai Lee) VTC.*

*[Home Page >[vtc.edu.hk](http://vtc.edu.hk)<]*

*‘Off the job’ craft training and also skill testing are operated by the VTC Automobile Training Centre at Kwai Chung.*

- To further protect the public and also to introduce an enforceable ‘minimum maintenance’ policy, vehicle repair enterprises (garage workshops) need to be registered. In order to comply, garages would be required to:
  - (a) employ properly qualified and skilled (licensed) mechanics and / or technicians,
  - (b) have adequate levels of equipment and appropriate maintenance data (Manufacturers Specifications) to suite the vehicle types to be repaired,
  - (c) provide regular upgrading courses for their mechanics / technicians,

- (d) adhere to all health, safety and environment protection regulations,
  - (e) maintain premises which are suitable for the purpose and have sufficient internal space, and.
  - (f) put in place an 'IT' system capable of interfacing with the Transport Department computer (for service data transfer).
- Poorly maintained vehicles should be barred from use on the road. One idea would be to require 'registered garages' to upload "minimum maintenance" data to the Transport Department (TD) computer each time a vehicle is serviced (maintenance, safety & emission treatment). When an owner applies to the TD to renew his vehicle license this will only be successful if the TD computer shows that the vehicle has received the required level of maintenance within the previous 4 months.
- Strong enforcement of all relevant regulations must be put in place. Hong Kong currently has good vehicle 'Construction & Maintenance', 'Safety, Health & Environmental Protection' and 'Air Quality' regulations. However, these regulations can only be as good as the enforcement media applied. The relevant authorities must therefore explore ways of more effectively enforcing the current regulations.
- A change in the mindset / culture of the public at large is apparently urgently needed. If the public fail to gain an understanding and a strong empathy towards environmental protection it will be extremely difficult, if not impossible, to secure any lasting improvement.

***N.B. It is now well established, by a growing number of prominent persons within our business community that we need a clean and healthy environment to attract experts to work in Hong Kong.***
- Government currently tightly monitors the quality of maintenance of franchise bus companies. However, this seems not to be the case regarding the vast number of goods vehicles, taxis and public light buses. A comparable set of controls should therefore be applied across all vehicles used for the purpose of hire or reward.

***N.B. It should be noted that there are few regulations, which deal with the operational aspects of running goods vehicles.***

- The age of the vehicle fleet (all types) needs to be kept low so that we may fully benefit from the latest technology designed to counter harmful emissions.
- Discourage harsh driving, such as rapid acceleration and severe braking. By driving smoothly wear and tear is minimized, fuel consumption is reduced, emission levels are lowered and road safety is enhanced. The bonus for smooth driving is significantly lower operating costs. Driver selection mechanisms, training and professional development, systems especially for commercial drivers, should therefore be strengthened.
- We must prevent poor quality fuel from entering Hong Kong. It appears that the present border checks are not sufficiently effective! One way to solve this would be to neutralize the financial gain presently enjoyed by the fuel smugglers. High sulphur, poor quality fuel increases the danger of respiratory ailments, produces more concentrated acid rain and even damages the engines in which it is used. In addition, modern vehicles with sophisticated engine and emission control systems must have high quality fuel (e.g. Citydiesel) in order to operate efficiently / realize intended emissions levels.
- We need to ensure that new vehicles are able, not simply to meet our present standards (Type Approval), but to continue meeting these over the service life of the vehicle.
- We need to introduce well proven LPG technology to taxis, light buses and vans as quickly as possible.
- Vehicle manufacturers should be required to make all repair manuals openly available to the Hong Kong public. Such information is apparently 'open to the public' in many other countries where repair manuals may be purchased from a wide range of sources.

***N.B. The Automotive Engineering Department of the Hong Kong Institute of Vocational Education has a wide range of such manuals but not all vehicle makes / types may be represented.***

- We should encourage the use of car and taxi sharing to minimize the overall number of vehicle journeys and thus reduce the number of vehicles entering urban areas. The fuel consumption per person, of a vehicle carrying two persons instead of one, is effectively halved! Furthermore, a bus carrying 90 or 100 passengers will have a better fuel consumption per person, compared to most cars.
- There are ways to minimize the number of vehicles entering the urban area. In Paris, whilst the pollution index is high, the authorities only

allow 'even' numbered (license plate) vehicles one day and 'odd' numbered vehicles the next day, into the urban areas. In Germany, only vehicles with a 'low pollution' badge may be used when the pollution levels are bad.

- We should educate the public to avoid non-essential car journeys especially on days when the air pollution is at a critically high level. The public would need to be educated about the harmful and wasteful aspects of non-essential journeys.
- Low priced (subsidized) car parking should be available at suburban MTR, KCRC, Bus and Ferry stations / piers to encourage drivers to use mass transport as the preferred means to enter urban areas.
- We should apply penalties to penalize any driver who excessively idles his engines whilst the vehicle is stationary.
- We should strive to minimize traffic congestion / jams. Stationary vehicles waste 100% of their fuel by not moving and at the same time heavily pollute the surrounding environment. Likewise, slow moving vehicles suffer low fuel efficiency and hence pollute more. Such congestion is usually associated with the urban areas where there are large numbers of pedestrians adversely affected by such masses of pollution and heat released to the atmosphere. Traffic control and road planning systems must be put in place to keep vehicles on the move and if possible to provide information to drivers regarding the best times to use and routes to take to avoid congestion. Satellite navigation systems may be applied to assist drivers avoid such congestion.
- 'Vehicle free' shopping / urban areas need to be introduced to provide a safe, comfortable and healthy environment for pedestrians. Restaurant and cafe owners may provide services, in such new areas, which would become attractive to both tourists / shoppers alike. Pedestrian areas are now very popular in many cities around the world for shopping, resting and other leisure / dining activities.
- The smoky vehicle spotter programme should be expanded and the penalties against the polluter greatly increased.
- The most important action would be to educate all concerned especially our children to encourage a strong empathy for environmental protection.

It must be mentioned here that there is no such thing as an "Environmentally friendly engine". Perhaps our bus companies could therefore

remove any such obvious misleading statements from their vehicles. All internal combustion engines must continually suck in large amounts of fresh air and exhaust similar amounts of heat and gaseous substances, most of which are harmfully to our environment!

Even if most of the aforementioned suggestions were implemented tomorrow, we would still need to quickly find alternatives to the current unhealthy bad habit of combusting fuel. To save our atmosphere we must put in place a sustainable mobility industry. A finite amount of crude oil is available and this will run out one day! In addition, we all must depend on the same air as do the vehicles we presently ride in and this air deteriorating at an increasing rate. It is therefore imperative that we upgrade our vehicle maintenance no matter what kind of vehicles we use!

Actually, if you think about it carefully, we have **NO CHOICE** but to quickly mend our ways otherwise our collective future is extremely limited.

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