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LEGCO PANEL ON ENVIRONMENTAL AFFAIRS
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FUNDAMENTALS OF A MORE SUSTAINABLE TRANSPORT SYSTEM FOR HONG KONG

> *A more sustainable transport system is one which reduces health and safety threats to the local population. while meeting the public's needs for affordable and convenient mobility. From a regional and planet-wide perspective, a more sustainable transport system is one which reduces overall environmental damage from transport's use of energy, and draws on relatively plentiful and safe fuels.*

In large measure health effects depend on where the pollution from each transport mode is emitted. In this respect, *electric powered systems.* are far superior to ones using internal combustion engines, since they emit their pollution away from population centres. With respect to regional and global concerns, here again for the SAR. electric powered systems are superior, especially to the extent that they draw on natural gas-fired power plants.

With the driving force of the projected large population increase in the SAR over the next two decades. it is simply not sustainable to continue to move two thirds of people by road, and to have all of the road transport powered by the internal combustion engine. We must think about *basic structural change,* since more of the same approaches simply won't work when the air is already unhealthy and everyday there are more people requiring transport.

Moving towards more sustainable transport for Hong Kong will require going well beyond issues of emission standards or fuel choice for motor vehicles.

- O It must also include careful consideration of the role for rail and other forms of 'tethered' electric transport such as trolley buses and modern trams (which are zero local emission modes of transport) versus transport modes which rely on the internal combustion engine.

- O This in turn raises issues of *funding schemes* and *tariff structures* for rail systems as well as means of facilitating the introduction of trolley buses and modern trams.[1]
  - Need to rethink how the MTRC and KCRC and any new rail agencies are funded.
  - How to facilitate overhead trolley-bus power lines and rails for modern trams.

- O It is for the residual internal combustion engine transport vehicles (including quite importantly -- *goods vehicles*) that matters of fuel options and enforced emission standards come into the picture for sustainable transport.

[1] Fuel choice for power plants is important, since natural gas is far cleaner than coal.

A further consideration is the proximity of road vehicles to large number of pedestrians. Internal combustion engines emit their pollution in highly concentrated and toxic form near people, while all vehicles generate noise and present a safety risk. Separating, road vehicles from pedestrians greatly reduces the concentration of toxic exhausts breathed by people on the street. lowers irritating noise and improves safety.[2] Present assessments and plans for *pedestrianisation* in Hong Kong are far too timid and small compared to its potential and significance of the benefits.

Finally, we need better *road management* to reduce congestion. Whether such traffic management is accomplished through electronic road pricing or by time-of-day restrictions, to be adequately effective it must include also trucks and vans for goods delivery.

To sum up. moving to a more sustainable transport system for Hong Kong will require *structural changes.* Moving towards a more sustainable transport system for Hong Kong must involve:

1. Re-thinking the manner in which rail systems are financed and tariff structures set.

2. The cooperation of all relevant agencies in the development of safe and appropriate infrastructure with respect to the power lines for trolley buses and modern trams.[3]

3. Continue to look for less polluting fuels and engines for free-wheeling (non-tethered) vehicles including not only less polluting fuels but also hybrid electric vehicles.[4]

4. Imposing time-of-day restrictions on goods vehicles during peak periods.

5. Making Hong Kong, a city where the vast majority of people are pedestrians every day, a far more *pedestrian friendly* -- rather than, as at present, a *pedestrian hostile* -- place.

Obviously, to move in these directions is go beyond the *end of pipe* measures available to the Environmental Protection Department. The active involvement of the Transport Bureau and Transport Department, as well as other agencies, is essential. With respect to the Transport Department this also means recognising that its policy of continually expanding the road system is not only futile but counterproductive.[5] Without such changes in fundamental thinking, there is little prospect of Hong Kong moving towards a more sustainable transport system.

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[2] Elevated walkways along roadways do improve safety but have only modest benefits with respect to pollution and noise compared to creation of street-level vehicle free zones.

[3] Experience from around the world and assessments for Hong Kong show that trolley buses and trams overall are far less environmentally damaging than internal combustion engine buses and for high density routes are highly cost-competitive.

[4] The term 'hybrid vehicle' includes various options. Here we are referring in particular to battery electric vehicles with an auxiliary internal combustion engine.

[5] This policy results not only in destruction of amenity value for neighbourhoods, it usurps large portions of prime land on reclamation sites and along waterfronts. It will always be easy to show the 'need' for new highways and taking prime new reclamation land or shorelines will be the apparently most 'efficient' solution, *when one ignores the externalities.* The challenge which Hong Kong transport planners seem to prefer to sidestep is to (i) acknowledge the negative externalities of roads, and (ii) then search for ways in which future transport demands can be met through less environmentally damaging solutions.

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