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Restoring Blue Skies
Review of the Policy Agenda on Air Pollution
Hong Kong General Chamber of Commerce
April 2008

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Synopsis of ideas and recommendations

This is a policy paper developed by the Environment Committee of the Hong Kong General Chamber of Commerce on tackling Hong Kong's air pollution problem. The paper consists of 43 ideas and recommendations, organized under ten headings. The purpose of this policy paper is to inform and guide further action and discussion on what we consider to be one of the most pressing issues confronting Hong Kong a world-class international city.

One: Global citizenship

1. Specific and more ambitious local green house gas emission targets, with the use of international emissions credits allowed towards achieving the targets.
2. Exploring ways to develop Hong Kong into a financial platform for trading emissions, including carbon emissions.
3. Developing and implementing carbon offset schemes.
4. Pursuing low-carbon developments through demonstration projects and relevant carbon audit schemes, starting with the public sector.
5. To be more proactive in international forums on climate change.
6. Through CEPA, enabling Hong Kong companies to take a more active part in CDM projects.
7. A tripartite partnership approach (government, business and the community) in addressing climate change, through promoting green building, green lifestyle and green business practices.

Two: Cooperation with the Mainland

8. Extending the emission trading regime between the HKSAR and Guangdong Governments to cover carbon emissions.
9. A moratorium on building any new coal-fired factories in the region.
10. An "environmental compact" campaign for Greater PRD investors across the border.
11. Hong Kong businesses to help bring in foreign capital and technologies to help contribute to sustainable development of the country.
12. Compiling and sharing a data set on stack emission in the region.
13. A "CEnPA" – Closer Environmental Partnership Arrangement between HKSAR and Guangdong to facilitate sustainable development and environmental improvement.

Three: Energy policy

14. Securing the sustainable supply of liquefied natural gas in long term and facilitating increasing use of natural gas.
15. Adopting a regulatory approach to encourage energy conservation by end users.
16. A joint monitoring system between HKSAR and Guangdong to establish the capacity limits on emissions and to enable regulation of the trading scheme and subsequent target setting.

Four: Demand-side Management

17. More ambitious targets to encourage delivery of greater energy saving by the power plants, including incentive schemes to encourage end-user efficiency.
18. A community-wide promotion of responsible electricity consumption, e.g. a "Better-Off" campaign to encourage households and workplaces to switch off electrical appliances which are not in use.
19. A "Save Electricity" educational programme to encourage the use of less power-consuming appliances.
20. Promotion of voluntary adoption of temperature control for air conditioning, e.g. 25.5C.
21. Promotion of green buildings and green roofing.

Five: Infrastructure and urban planning

22. Integrating sustainable development in respect of energy, transport and quality of life into urban planning.
23. Improving urban design and promoting "green space infrastructure" through urban greening.

Six: Sustainable transport

24. Developing new railways to meet future demand.
25. Introducing zero-emission vehicles such as electric cars, trams and trolley buses.
26. Ban on idling engines, with exemptions on certain types of vehicles and non-peak hours.
27. An annual air quality certification for vehicles to encourage eco-driving.
28. Reducing redundant public bus routes, rationalizing bus stops and restricting the proliferation of private bus transport.
29. Regulating the operating time of delivery vehicles in congested areas.
30. Electronic road pricing as a means to reduce road traffic in congested areas.
31. Government replacing its fleet with hybrid vehicles.

Seven: Green procurement

32. Support of the Green Procurement Charter developed by the Hong Kong Green Council.
33. Adopting the Chamber/BCE Clean Air Charter as a pre-requisite in government procurement.

Eight: Pollution tracking

34. The HKSAR and Guangdong governments to compile a complete database of pollution sources.
35. Pollution mapping to enable more specific emission reduction targets to be set, and to improve micro-climates of specific districts through appropriate town planning and urban design measures.
36. Studies to better understand acute exposure to pollution in the heavily trafficked and poorly ventilated street canyons.

Nine: Transparency and reporting

37. Full data disclosure of the air quality monitoring network for the whole region.
38. Re-orientating scientific resources towards providing quantitative information at more regular intervals, thus enabling productive scientific dialogue and engendering policy development.
39. All government departments and publicly-owned corporations to publish sustainability reports.
40. A "code of environment practices in the Mainland" for Hong Kong enterprises to help promote environmental management as a core business competence.

Ten: Building human capital for sustainability

41. Further development of human capital through our universities programmes in public health, urban planning, environmental sciences, meteorology, chemistry, engineering, energy, transportation, manufacturing, architecture, building services, information technology and instrumentation, and public policy.
42. Top government appointees in various policy areas that impact on sustainability to have strong subject matter expertise.
43. Through the Environment and Conservation Fund, to coordinate various programmes in public education targeted at different segments of the population.

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Introduction

1. The Chamber cares about the environment. We share the community's concern over air quality, among other environmental issues. The HKSAR Government has taken bold steps and practical measures to tackle air pollution, such as replacing diesel light buses with cleaner fuel ones, retrofit particulate removal devices on pre-Euro diesel vehicles, enhance vapor recovery systems in petrol filling stations, tighten motor fuel standards, reduce VOC emissions from the printing process, etc. The 2007 Policy Address by the Chief Executive is laudable in promising a wide range of further actions to reduce emissions, including possible legislation on building energy codes and energy efficiency labeling, carbon audit, environmentally beneficial regulatory arrangement for power plants, legislation on ultra-low sulphur diesel and idling engines, possible introduction of road pricing, and facilitation of clean production technologies in the Pearl River Delta (PRD). These all have the Chamber's full support.

2. However, despite strenuous efforts over the past years, the air quality we experience has apparently deteriorated, not improved. Hong Kong as a community must be ready to acknowledge that the current emissions are exceeding the carrying capacity of the environment, and therefore total emissions must be reduced. Apart from the health hazard, we are also concerned that poor air quality is affecting our reputation as an international business and tourism centre, and is becoming a threat to our competitiveness.

3. And the picture does not look good for the future. If one takes the HKSAR Government's 2030 Planning Vision and Strategy study as a guide, one can anticipate substantial growth in energy and emissions arising from development and cross border transport. On business-as-usual basis, to achieve improvements in air quality and environment in general will be extremely challenging. What needs changing is not simply regulations and measures, but a whole new way of thinking and perhaps a different, more sustainable way of life. Truly, the sustainability of Hong Kong is at stake if environment is not given a higher priority in the policy agenda.

4. To achieve real improvements in air quality would therefore require a concerted effort by all sectors of the community. For the business sector, market forces remains the preferred means of problem-solving, but a pre-requisite has to be a fundamental culture

change to "internalise" social costs into corporate operations. Voluntary efforts like the Project Clean Air initiated by the Chamber in association with the Business Coalition on the Environment (BCE), while important, are unlikely to resolve the problem without the support of appropriate mandatory measures. On the other hand, regulations may create other problems such as rising cost of compliance, especially for SMEs. Given the diversity of the business sector in Hong Kong and the PRD – big companies versus small players, advanced plants operating to international standards versus small village productions, etc., – no single solution will be able to address the full range of challenges encountered by different enterprises.

5. Across the border, while the pressure for growth might have caused some reluctance to fully implement environmental policies in the past, both the government and the business sector have made tremendous progress in tackling pollution, as evidenced in the 11th Five Year Plan. This renewed energy for environmental protection should be fully harnessed.

6. Air pollution has been featured prominently in all of the Chamber's recent Policy Address Submissions. There is no shortage of ideas on combating air pollution, whether in policies and regulations (e.g. pollution control standards in the Mainland) or on public campaigns (e.g. the Chamber's Project Clean Air or the government's Action Blue Sky). What is needed is now to find the key drivers for change, to "press the right buttons" to achieve sustainable results. As the business Chamber with the broadest representation of the general business community, the Chamber would like to put forward a package of 43 action-oriented ideas and recommendations, organized under ten headings to reflect different aspects of the problem, to supplement the various initiatives in the Policy Address. These ten aspects include the following:

The wider context

1. Global citizenship
2. Cooperation with the Mainland

Everyday challenges

3. Energy policy
4. Demand side management
5. Infrastructure and urban planning
6. Sustainable transport
7. Green procurement

The support structures

8. Pollution tracking
9. Transparency and reporting
10. Building human capital for sustainability

7. Under these ten headings, there are a total of 43 ideas and recommendations (numbered in brackets throughout the text below.) Some of the proposals in this paper may be innovative, others may be potentially difficult, but we are hopeful that through continual discussion and debate, we shall help the government and the community build consensus on one of the most pressing issues confronting Hong Kong as a world-class international city.

One: Global citizenship

8. Globally, there is a strong drive for sustainable development and environmental management, requiring governments and businesses to fulfill environmental standards. In many advanced countries, environmental policy has become part of the economic policy. Japan re-defined pollution as an economic problem ten years ago. The Canadian government mandated all the policy ministries to develop a respective sustainable development agenda. In the Netherlands independent professional scientists have been appointed to analyze emissions. Even in Mainland China, where economic development is still a priority, environment regulations are increasingly taken seriously, despite the still disparate application across the nation. If Hong Kong were to follow the global best practice, we need to integrate environment into the HKSAR government's economic policy, with clearly-defined regulations that are environmentally relevant.

9. It is encouraging that in the 2007 Policy Address, environment is no longer treated as a local problem, but stated explicitly as a national and global issue, as exemplified by the reference to climate change. The government has committed to implementing the Sydney Declaration and, significantly, it accepted the invitation to join the C40 Cities Climate Leadership Group on 8 November 2007. Through the Chief Executive's Policy Address the government has undertaken to roll out the mandatory energy labeling scheme, conduct carbon audit for the new government offices at Tamar, promote bio-diesel, and commission a consultancy to study Hong Kong's adaptation to climate change. However, this is not enough, as both the Hong Kong community and literally the world community now have high expectations of Hong Kong, now that the HKSAR has signed the APEC Sydney Declaration and joined the "C40 Cities" Climate Leadership Group. In our view, Hong Kong should formulate a concrete action plan for the city to, among other things,

- set out specific local green house gas emission targets which should be more ambitious than that applicable to a developing economy, and allowing use of international emissions credits towards achieving the targets; ***(1)***

- explore ways to develop Hong Kong into a financial platform for trading emissions, including carbon emissions; ***(2)***
- develop and implement carbon offset schemes; ***(3)***
- pursue low-carbon developments, through demonstration projects and relevant carbon audit schemes, starting with the public sector; ***(4)***
- be more proactive in international forums on climate change, just as Hong Kong has been active in multilateral forums on trade. ***(5)***

10. Furthermore, Hong Kong should take a more proactive role in taking part in CDM (Clean Development Mechanism) projects under the Kyoto Protocol. Currently, Hong Kong based companies are treated as foreign entities in the Mainland, thus preventing them from taking up majority interests in CDM Projects. But a model for closer cooperation with the Mainland already exists, in the form of CEPA – the Closer Economic Partnership Arrangement between the Mainland and Hong Kong, initiated and championed by the Chamber. CEPA be used as the basis for qualifying Hong Kong companies as PRC entities for the purpose of meeting the requirement of majority Chinese ownership – as set out in the *"Measures for the Administration of the Operation of Clean Development Mechanism Projects"* – in renewable energy and other projects that are eligible for CDM. This will enable Hong Kong-based companies to more actively pursue CDM related business. ***(6)***

11. Although the pollutants that cause climate change do not necessarily contribute to local air pollution, emission control and energy efficiency have both local and global environmental benefits. Accordingly, we would continue to champion a tripartite partnership approach (government, business and the community) in addressing climate change through promoting green building, green lifestyle and green business practices. ***(7)***

Two: Cooperation with the Mainland

12. Pollution transcends boundaries – this is especially true of air pollution in the Greater Pearl River Delta. According to the Environmental Protection Department, 80% of Hong Kong's air pollution is contributed by emissions from the PRD. Controlling air pollution in the PRD is a matter of common interest for both jurisdictions.

13. Thanks to the Regional Air Quality Monitoring Network developed under the Regional Air Quality Management Plan by the HKSAR and Guangdong governments, we now know much more about regional emissions in the PRD, whether they are from energy (power generation), industry and transport, marine or aviation sources. However,

even if the controls on emissions are fully implemented, given that the economic development of the PRD is proceeding at a scale never before seen, we may only be playing a catching-up game, with no assurance that the environmental quality of the PRD would improve. With the year 2010 rapidly approaching, there is an urgent need to re-assess the long-term environmental strategy collectively of Hong Kong and the PRD, and to develop cross-jurisdictional solutions for the long term sustainability of Greater PRD region post-2010.

14. A comprehensive cross-border solution will not be easy. Critical to this will be the establishment of a transparent regulatory infrastructure and its effective enforcement. In addition, we would like to make a few suggestions in this paper, as follows.

15. First, and more immediately, the HKSAR and Guangdong governments should further develop the emission trading scheme. Emissions trading helps attain any given emission target efficiently, but in itself does not lead to reduced emissions. Hence it is important to implement emissions trading as part of under a "cap and trade" regime in which the "caps" (i.e. the allowable total amount of emission) are periodically lowered and then trading takes place to allocate the reduced total among those in the trading scheme. We note that the HKSAR government has recently introduced a Bill establishing caps and facilitating emissions trading. We welcome this introduction of market-based instruments to Hong Kong's regulatory "toolkit". Given that the Mainland has already introduced emission trading in a number of provinces since 2003, we do not see the need for extensive pilot-testing. The possibility of extending emission trading regime to cover also carbon emissions should be explored, and potential synergies with the Clean Development Mechanism examined. Having said that, target setting must be based on sound science and cost-benefits analysis, taking account of the region's capability of emission reduction as well as the need for economic development. ***(8)***

16. Secondly, and as a matter of priority, emissions controls should be instituted on coal-fired power plants that do not have it already, throughout the whole region. More directly, the governments of both sides could work together to find a mutually acceptable way to establish a moratorium on building any new coal-fired factories in the PRD noting that this has been in place in Hong Kong since 1997. ***(9)***

17. Thirdly, the business sectors of Hong Kong and Guangdong must be properly engaged in the pollution abatement. Already factories in the PRD are feeling the pressure of tightening of emission regulations; some were banished by the Guangdong Government and unfortunately quite a few of these factories are Hong Kong-owned. The $93 million "cleaner production" programme announced in the Policy Address and

to be implemented by the Hong Kong Productivity Council is a welcome scheme that will help factories adopt clean technologies. The Chamber fully supports this scheme and would be happy to contribute to its management and promotion. As the environmental and economic objectives of the Hong Kong and Guangdong governments are increasingly aligned, there is an opportunity to develop sustainable solutions to benefit both sides, for instance, by extending the cleaner production programme and projects like the Chamber's Clean Air Charter more extensively across the border. The idea of an "environmental compact" for Greater PRD investors can also be explored. Although it is the private sector which will be signing charters or undertaking clean production programmes, government promotion would be essential if this were to become an effective campaign across the border. ***(10)***

18. For the private sector, there is also the opportunity to "turn the table" on pollution abatement: to find new opportunities amidst the challenges. Although the Mainland itself has developed rather advanced technological capabilities in environmental protection, Hong Kong businesses still have a role in bringing foreign capital and technologies to help contribute to sustainable development of the country. ***(11)***

19. As one foresees more environmental regulations, the compliance regime needs to be strengthened, whether for regulating the emission trading schemes, enforcing new measures on emission reduction, or implementing future policies on closure, relocation or subsidies. To that end, a data set on stack emission, both in Guangdong and in Hong Kong, should be compiled and shared by both sides, to enable total emission loading and total effects to be understood and hence the appropriate trading and regulatory regime designed. ***(12)***

20. Finally, riding on the success of CEPA, the Mainland and Hong Kong should consider developing a "CEnPA" – Closer Environmental Partnership Arrangement. This can be used to facilitate sustainable development and environmental improvement in both jurisdictions. Under the Arrangement, both sides may put forward "requests" and "offers" on environmental actions such as cleaner fuel, cooperation on trade in waste, development of water resources, aid for industry, and of course, emission reduction. A CEnPA framework would also be a useful platform to test out innovative policy ideas such as a regional fund to cover pollution abatement in the PRD funded by an energy tax or emission surcharge. Many possibilities may be considered; the key is to use the unique "One Country, Two Systems" set-up to engender creative policy solutions that benefit both sides. ***(13)***

Three: Energy policy

21. The government's energy policy objective is *"To ensure the public can enjoy reliable, safe and efficient energy supplies at reasonable prices, and to minimize the environment impact caused by the production and use of energy"*. The statement itself shows how inseparable energy is from the environment, and likewise, energy policy from environmental policy.

22. From the environmental point of view, we fully support stringent emission requirements for power plants. At the same time, Hong Kong needs a clear and effective energy policy that ensures that the territory continues to be supplied with the energy that we need with full regard to reliability, quality, social values and affordability, now and for the long term.

23. Now that environment and energy both come under the responsibility of the same policy bureau, there is an opportunity to re-formulate our energy policy so that it meets both energy and environmental objectives concurrently. In addition to a statement of aspiration, the energy policy should be truly comprehensive with clear *philosophy and principles,* e.g. an integrated approach across sectors; influencing energy choice at the production or consumption level; promoting efficiency, etc., as well as *explicit goals and objectives*. In this paper we would like to put forward three policy aspects which should be addressed by such an energy policy, namely, clean fuel, energy conservation, and cross-border relations.

24. The demand for clean energy means we have to contend with the reality that all fuel-generated energy gives out emissions. Large scale renewable energy is not a practical option for Hong Kong, given our high population density and scarcity of land. This does not mean we give up on developing renewable energy – we support setting ambitious targets and Hong Kong's geography does favour the development of some wind power and photovoltaic systems in certain locations; but we recognize that conventional combustion-generated electricity will remain the mainstay of Hong Kong's energy supply. The key question for a "clean" energy policy thus lies in the right fuel mix and emission control.

25. Currently, Hong Kong maintains a balanced fuel mix including coal, natural gas and nuclear energy, to ensure supply reliability. The need for energy security requires that the fuel mix remain diversified. The more specific question is how far the more polluting fuel, namely coal, should be retained in the fuel supply for Hong Kong. Should we switch completely to natural gas and nuclear energy?

26. If this is put in the global context, demand for energy continues to be strong for major developing nations like China and India. In Mainland China, electricity demand for the next 15 years is expected to grow by 6% per annum, as compared to 2.6% for the world as a whole. By 2030 energy consumption is expected to increase by 164% in India, and 100% in China, over today's levels. However, like the advanced countries before them, coal is likely to remain the dominant fuel for electricity for both China and India, given that they have limited reserves of oil and natural gas, and in any case global demand for the cleaner fuels is going to be increasingly competitive.

27. Given this reality and the need for fuel diversity, it seems coal will still remain part of Hong Kong's fuel mix, at least in the medium term. Instead of giving up coal altogether, there should be renewed investments to reduce emissions from coal-fired generation plants such as flue gas desulphurization facilities (to reduce SO_2 emissions) and selective catalytic reduction plants (NO_x emissions). For the longer term, to facilitate increasing use of natural gas, a reliable and sustainable supply of liquefied natural gas must be secured. ***(14)***

28. The second issue on energy policy has to do with the demand side, how to reduce energy by end users. From 1990, Hong Kong's population has increased by more than 20% (1.2 million), vehicle number has increased by almost 50% (by 200,000 vehicles), GDP by 78%, and electricity consumption by 65%. The increase in energy consumption, though less than GDP, has been much greater than population increase. Put simply, every citizen is using more energy than before. The most effective way of reducing emissions is thus for every one to use less electricity.

29. In terms of electricity generation, the new Scheme of Control Agreements between the government and the power companies have incorporated incentives for renewables and energy efficiency, which should be recognized. Elsewhere in this paper below, we have made some suggestions on demand side management. From the point of view of energy policy, we believe it important for the government to adopt the right regulatory approach to tariffs. Government's current approach is to regulate and limit the power company's profits, and to return the gains on efficiency to the public in the form of lower tariffs. While we agree with the policy intention, we have doubts over whether tariff reduction is the best means of returning the benefits to the public. If tariffs were to be a regulatory tool, it should be employed not just to contain the power company's profits, but also to encourage energy conservation by end users. Indeed, a drive to lower tariffs is inherently conflicting with the objective to conserve energy. Within the confines of affordability, therefore, tariffs should be higher, not lower, in order to induce energy conservation. We

are reminded of the situation of the cross-harbour tunnel: when the franchise expired, the government did the right thing by not reducing the fee to "return the benefits to consumers", but instead collected the same fee both to regulate traffic and to contribute to general revenue.

30. This raises the issue of a possible "energy tax", on which the Chamber does not yet have a set view. In principle the Chamber is skeptical of any changes to our current tax regime; on the other hand we have not ruled out simple, specific and well-designed charges for environmental purposes, and have indeed supported the sewage charge, landfill charge and plastic bags levy. ***(15)***

31. The third issue in energy policy is the cross border dimension. Here we reiterate the suggestion earlier in this paper that the emission trading scheme with the Mainland be developed further and consideration given to a local trading scheme for green house gas emissions. The HKSAR government and the Guangdong government should jointly establish an emissions monitoring system as a matter of priority, so as to establish the capacity limits on emissions and to enable regulation of the trading scheme and subsequent target setting. For the long term, our energy policy should also address the question of regional integration, tackling subjects such as possible opening of the energy market in Hong Kong to competition and liberalization of the utilities sector in the Mainland. ***(16)***

Four: Demand-side Management

32. In our response to the public engagement exercise by the Council for Sustainable Development, we have expressed support for the promotion of energy efficiency through public education and transparency of information, such as a more effective regime in energy efficiency labeling. Since energy efficiency translates into monetary savings, we have advocated the market mechanism, rather than mandatory measures, as the primary means for promoting energy efficient appliances. Government has a facilitating role in enhancing industry contribution to energy efficiency, for example, through providing more support in brand promotion and development of energy-related industries and services.

33. For more practical demand-side management (DSM) programmes, we propose that a two-prong strategy targeted towards both power plants and consumers be adopted. For power plants, initiatives such as energy efficiency, peak clipping and load shifting programmes have been promoted for some time and have produced tangible results. To

take these programmes further, more ambitious targets may be considered to encourage delivery of greater energy saving. Further incentive schemes should be devised to encourage power companies to actively support end-user efficiency and thereby ensuring that there will not be excessive generating capacity over the long term. ***(17)***

34. Engaging the public on the benefits of energy saving and efficiency will be as important as, if not more important than, mandatory measures. Besides the energy efficiency labeling schemes, we would advocate a community-wide promotion of responsible electricity consumption. This should include a four-prong campaign, namely:

- a "Better-Off" campaign to encourage households and workplaces to switch off electrical appliances which are not in use; ***(18)***
- a "Save Electricity" educational programme to encourage the use of less power-consuming appliances; and ***(19)***
- the promotion of voluntary adoption of temperature control for air conditioning, e.g. 25.5C; ***(20)***
- promotion of green buildings and green roofing by the HKSAR Government in conjunction with the building industry through, among other things, engagement with the World Green Building Council. ***(21)***

Five: Infrastructure and urban planning

35. Infrastructure consists of major construction and facilities that once built, last for many years. In many cases, the emissions caused either directly or indirectly by the facility are "locked in" once the infrastructure begins operation, and it may be difficult to reduce its emissions later without a major overhaul. Therefore it is important to plan for transition to a low-emission infrastructure in the future, whether in transport infrastructure (roads, rail, tunnels, bridges, sea and water ports), energy infrastructure (power plants, fuel depots and distribution networks), industrial infrastructure (factories with varying energy footprints), or building infrastructure (raising the energy performance of commercial and residential buildings). Sustainable development requires that urban planning be no longer undertaken in isolation but should be integrated with energy, transport and quality of life. ***(22)***

36. Besides long-range planning, the immediate urban environment can benefit from more urban greening and natural ventilation. Good urban design must comprise a good-quality "green space infrastructure", whether public park, green spaces or

"no-emission" zones that encourage walking and provide higher air quality outdoors for public enjoyment. In the congested urban areas, improvements in pedestrian walkways and the creation of more pedestrian zones is an urgent need that should be accorded higher priority. ***(23)***

Six: Sustainable transport

37. As long ago as 1995, the Strategic Environmental Assessment Report of the Territorial Development Strategy Review already foresaw poor air quality in 2006. Hong Kong's development was simply not sustainable under the prevailing transport and energy policies. Despite vigorous efforts over the past ten years such as introduction of unleaded petrol and catalytic converters, the conversion from diesel to liquefied petroleum gas (LPG) for taxis, and more recently incentives for low-emission vehicles, pollution concentrations in urban areas such as Causeway Bay, Central, Mongkok, Kwun Tong, Tsuen Wan, and Shamshuipo, where millions of people live, remain unacceptable.

38. In 1997, in light of the worsening vehicle emissions, the Chamber issued a position paper titled "Air Quality in Hong Kong: Time for Further Action?" In the paper the Chamber called on the government to develop a comprehensive transport-environment policy covering financing of rail systems, innovative surface electrified transport, and alternative fuels for large vehicles. The Chamber's call is as relevant today as it was ten years ago.

39. We believe the community has reached a consensus that our city's public transport should be served primarily by a railway-based system. We have developed a world-class system of mass transit, which will be further expanded as announced in the recent Policy Address, but we believe it can and should go even further. Despite the top quality of the rail network, its coverage is still skeletal compared to systems in other world cities. To expand the rail network further, government should consider developing new railways to meet future demand. The sustainability of the city depends on our taking a pre-emptive and pro-active approach in planning for our future transport needs. ***(24)***

40. At the street level, radical as it may sound, the Government should aim at zero-emission vehicles to supplant those powered by internal combustion engines. This means not only free wheeling, but also tethered electric vehicles such as trams and trolley buses. Ten years ago the Chamber advocated the introduction of electric trolley buses into the city center, and we called for the tramlines to be extended. With advances in town planning and urban design, fresh opportunities now arise in the new waterfront in

Central, Wanchai and Causeway Bay. Sustainable transport should therefore be built into these plans, to enable the central business district to get a "breath of fresh air" instead of more vehicle exhausts. Furthermore, proven electric technology now exists for scooters, cars, shuttle buses and light vans which matches the performance, autonomy (the distance between stops for re-powering) and reliability of conventionally powered vehicles. As the technology is already available, Government can provide much-needed leadership in making this a reality. ***(25)***

41. Clean transport such as rail and electric trolley buses notwithstanding, vehicles on combustion engines will remain a reality for a long time to come. Much progress has been made in controlling omissions and smoky vehicles, but the everyday experience remains that emission at street level is still a problem. This is particularly so on the days of high air pollution where the Air Pollution Index (API) nears (or exceeds) 100, with the ambient pollution amplified by the roadside emissions.

42. If cleaning up regional smog is a long-term effort, at the street level some improvements can be made through controlling idling engines. The Chamber therefore supports legislation to require motorists to switch off the engines of their vehicles while waiting, as proposed in the consultation paper entitled "A Proposal to Ban Idling Vehicles with Running Engines". Although such a law would only produce a very small effect in terms of reducing overall pollution, given the highly compact nature of our city and the deteriorating ambient air quality, such legislation does help make the city more liveable. ***(26)***

43. On the specific arrangements to implement the ban on idling engines, the Chamber has the following views.

- The fine for non-complying motorists should be akin to that of illegal parking.
- As the consultation paper suggests, the ban should be across the board except for disciplinary or emergency service vehicles.
- To provide flexibility for vehicles which need to keep their engines running for operational reasons, we would support one more exemption for licensed public vehicles above certain ambient temperature (e.g. 28 degrees Celcius, or when the Observatory issues a Very Hot Weather Warning) and within certain time limit (e.g. 5 minutes).
- It is understandable that the ban on idling engines cannot be enforced completely, just as the legislation on illegal parking and wearing of seat belts, To make it more effective, there should be an explicit administrative commitment to strictly enforce the legislation when the API is above 100.

44. In the broader picture, eco-driving is more than just turning engines off. It should also be about managing emission control and more rational and efficient use of road space.

45. On emission control at the street-level, installations such as catalytic converters for relevant vehicles would surely help, but we need more aggressive measures to promote energy efficient vehicles. Regulation of fuel type would be useful (e.g. mandating ultra low sulphur diesel) but the government should also explore more options to regulate emissions directly – this could make possible solutions provided by environmental technology companies, instead of relying too heavily on fuel control. To strengthen enforcement, an option worth exploring would be to introduce an annual air quality certification for vehicles. ***(27)***

46. On efficient use of road space, there should be room for further improvements in reducing inefficient road use.

- For public transport, this means reducing redundant public bus routes, rationalizing bus stops and restricting the proliferation of private bus transport. ***(28)***
- More efficient road use could also be achieved if the time for delivery vehicles to operate could be effectively regulated, e.g. limiting delivery time to off-peak hours in congested areas. This may cause some inconvenience to businesses that require frequent and timely deliveries, and no doubt the impact on these businesses should be fully explored, but as an option it should be seriously pursued. ***(29)***

47. The road pricing concept put forth in the earlier public engagement exercise by the Council for Sustainable Development is also relevant. The Chamber reiterates our support for electronic road pricing (ERP) as a means to reduce road traffic in congested areas, and hence alleviate roadside air pollution. In implementing ERP, alternative routes and bypasses must be provided, and the traffic impact on the alternative routes must be acceptable. To minimize the impact on commuters and business vehicles, exemptions should be provided for public transport, and ERP should be implemented flexibly to allow loading and unloading during designated non-peak hours. Other market schemes consistent with ERP such as time-of-use tunnel pricing should also be considered to reduce traffic congestion. ***(30)***

48. Finally, as a major owner and user of vehicles, the government should lead by example. A commitment to replace its own fleet by eco-friendly vehicles (e.g. hybrid vehicles) will be a welcome move. ***(31)***

Seven: Green procurement

49. The Chamber is a supporting organization of the Green Procurement Charter developed by the Hong Kong Green Council. Green procurement involves many aspects of environmental protection, particularly in relation to resource management. In terms of combating air pollution, it can help by encouraging business practices that are less emission-prone. We thus support a concerted campaign to promote the Green Procurement Charter. ***(32)***

50. Specifically, the Chamber would encourage the adoption of the Chamber/BCE Clean Air Charter as a pre-requisite in procurement practices. The government can lead by incorporating the Clean Cir Charter into its own procurement codes. We propose that this be considered in three stages: ***(33)***

- moral suasion: issuing an advisory to suppliers and service providers on government's tender lists, advising them that the government is a signatory of the Clean Air Charter and encouraging them to also adopt the Charter;
- incentivising: advising suppliers and service providers that for government tenders, certified Charter signatories will be favourably considered among bidders of identical scores;
- mandatory requirement: making Charter endorsement a pre-requisite for supplying goods or services to the government (in the same manner as the Wage Protection Movement).

51. Once the government has taken the lead, the same procurement requirement (i.e. prior endorsement of the Clean Air Charter) can be promoted to business corporations.

Eight: Pollution tracking

52. That air pollution affects health is a fact that almost goes without saying. On the other hand, the effect of emissions from vehicles, factories and power plants varies for different districts, and we know very little about the precise relationship between the emissions and public health apart from generalities, e.g. that air quality in Tung Chung, Tuen Mun and West Kowloon is more directly affected by PRD emission; the central business district suffers mostly from local traffic emissions; while fine particulates (PM2.5) is probably a problem common to all. The public health authorities should pay greater

attention to researching and dissemination information about the impact of pollution on health.

53. The Environmental Protection Department conducted a sophisticated modeling study in 1999, upon which the current emission targets are derived. However, more information would be needed to correlate the relationship between air pollution and health, and to track the causes and effects of pollution in different districts. Instead of sporadic and ad hoc studies, government should conduct regular and systematic research on the effect of pollution in different districts, to enable the cost, benefits and effectiveness of various abatement measures to be assessed.

54. The starting point is to establish a database identifying main pollution sources. In Hong Kong, the Air Pollution Control Ordinance already requires all licensees to submit emission reports. For non-licensed sources such as roadside emissions, the data will have to be estimated by the EPD and Transport Department. The same should then be done for the Mainland. The EPD's 2002 study (using 1997 as the base year) already provided a framework with the now well-known emission reduction objectives for the four major pollutants. Now that the Guangdong Province has launched a comprehensive study to identify the main sources of pollution in the PRD, refinements could be incorporated over time to yield higher-quality data and to mirror changing circumstances. In other words, a complete database of pollution sources can now be technically compiled, say after five years of data collection. ***(34)***

55. The comprehensive database will enable a geographical contour of emissions to be drawn up, which will be a useful information tool for the public. Such pollution mapping will shed light on the correlation between emission source and pollution concentration, thus providing a basis for setting more specific emission reduction targets over time. How and to what extent power plants or mobile sources affect the air quality in specific areas like Causeway Bay or Mongkok can be studied more thoroughly, with a view to improving the micro-climates of these districts through the appropriate town planning and urban design measures. The correlation between public health and district pollution will thus help address the risk to public health more effectively. ***(35)***

56. In addition, it is important also to better understand *acute* exposure to pollution in Hong Kong's heavily trafficked and poorly ventilated street canyons – for example, how many people are pedestrians or are in the vehicles each day and for how long on average are they exposed? How many vendors and shop workers spend their entire working day in such conditions? What is the air quality indoors for offices/residences along such routes and how many people are thereby routinely exposed to acute levels of roadside air

pollution? With such information it should be possible to also survey the respiratory health of a sample of people from the above groups so that we can begin to get a better picture of the consequences of frequent acute pollution exposure episodes. ***(36)***

Nine: Transparency and reporting

57. With continuous improvements in the air quality monitoring network, the government should seek to undertake full data disclosure to the public for the whole region. Through the cross-border liaison mechanism, the HKSAR government should encourage and facilitate the Guangdong counterpart to adopt mandatory public reporting of emissions for large emitters in the region, as well as publication of an annual emissions inventory, broken down by individual pollutants and greenhouse gases as well as by type of emission sources, as is now done in Hong Kong. ***(37)***

58. More generally, the HKSAR government has plenty of good scientific resources and if they can be re-orientated towards providing quantitative information at more regular intervals, this may help catalyse a change to transparency and enable both government and other stakeholders to engage in scientific dialogue productively, and hence engender policy development more effectively. Given that health impact information is being continually studied and updated, sound and scientifically-based policy development is crucial lest the gap between mitigation needs and what may be affordable in socio-economic terms should be larger than policy makers are prepared to adopt. ***(38)***

59. In the case of the private sector, many Hong Kong companies have already incorporated social responsibility objectives and programmes into their business process, but have not yet taken on the task of reporting these activities. There should be a vigorous campaign to encourage environmental or sustainability reporting, building on the best practices promoted by bodies such as the Global Reporting Initiative.

60. The Government can help kick-start this campaign by requiring all government departments and publicly-owned corporations to publish sustainability reports. With the support of the Hong Kong Exchanges and the Securities and Futures Commission, a campaign should be launched to encourage all listed companies to undertake environmental or sustainability reporting, especially on the measures they and their subsidiary companies are taking to reduce air pollution. The reports can become a driver of corporate social responsibility by enhancing communication and trust between the respective organizations and their stakeholders. If these companies can be measured and rated on this front voluntarily, with more companies adopting such reporting, it could

eventually become part of the reporting requirement of the Hong Kong Exchange for listed companies. Already, some international funds are giving credit to investee companies that are socially responsible. ***(39)***

61. The situation is more complicated in the cross-border context, manufacturers in the PRD being more reluctant to disclose information on emissions lest they should be targeted for enforcement and possible financial penalties. The lack of transparency results in insufficient data to determine emission reduction targets, develop the environmental services industry, or formulate policies on emission trading.

62. To help enhance transparency of environmental performance across the border, perhaps a voluntary self-regulatory approach is worth exploring. On the part of Hong Kong enterprises, a "code of environment practices in the Mainland" could be established, perhaps initially by the Hong Kong Exchanges and Securities and Futures Commission for listed companies, providing guidelines on disclosure of emissions and regulatory compliance. Apart from encouraging Hong Kong companies to be responsible global citizens, this may also have an effect on their Guangdong counterparts. In time, such a code can be promoted more widely to the business sector as a whole, through institutions like the Greater Pearl River Delta Business Council. The ultimate aim is to help promote environmental management as a core business competence. ***(40)***

Ten: Building human capital for sustainability

63. Improvement air quality is a key issue in Hong Kong's sustainability. If we are to succeed, an important element is to continue to build the skills and expertise for sustainable development.

64. At the higher level, we should encourage the development of human capital through our universities' programmes in public health, urban planning, environmental sciences, meteorology, chemistry, engineering, energy, transportation, manufacturing, architecture, building services, information technology and instrumentation, and public policy. This is also an area where cross-border cooperation could be potentially most fruitful. ***(41)***

65. At the public policy level, strong subject matter expertise should increasingly become a necessary qualification for the top government appointees in the various policy areas that impact on sustainability. ***(42)***

66. For the general public, the green groups have already done much work in creating awareness. As pollution abatement now cuts across many policy areas that impact on people's lives (e.g. health, transport, energy, planning, business, etc.), the public campaign should now transcend the interest of any sector or group to be a cross-sector cooperation. The government, through the Environment and Conservation Fund, will have a useful coordinating role in various programmes in public education targeted at different segments of the population. ***(43)***

The Way Forward

67. In this paper we have considered ten aspects of the pollution problem and put forward 40 ideas and recommendations. Some of the ideas may generate immediate action, while others may take long to implement, and still others will need more thorough consideration before decisions can be made. We shall need to work on building the right infrastructure (such as the ideas on energy and transport), and to use our current infrastructure efficiently. Above all, we need to continue to develop policies and institutions, whether in cross-border cooperation or in engaging the various stakeholders within Hong Kong. But we believe the problem is now so critical that action must be taken. There will be many ways of setting priorities, and many more issues to discuss and debate. This policy paper will have served its purpose if it can inform and guide further action and discussion, both within the business sector and the wider community.

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