



**The Canadian
Chamber of Commerce
in Hong Kong**

La Chambre de Commerce Canadienne à Hong Kong
香港加拿大商會

14 February 2014

The Honourable Wong Kam Sing, JP
Secretary for the Environment
Environment Bureau
15/F, East Wing, Central Government Offices
2 Tim Mei Avenue, Tamar
Hong Kong

E-mail: sdccouncil@enb.gov.hk and enquiry@enb.gov.hk

Dear Chairman,

The Sustainable Development Committee (SDC) of the Canadian Chamber of Commerce in Hong Kong ("CCCHK") has provided leadership in advocating the business case for sustainability in Hong Kong for close to two decades. Our members are committed to actively promoting a sustainable future for Hong Kong – this includes taking care of our environment and managing our day-to-day business sustainably. CCCHK considers Air Quality to be its primary issue of concern with respect to sustainability.

CCCHK supports the initiatives outlined in the Clean Air Plan issued by the HKSAR Government. We present our position paper below to highlight the current issues and status of the air quality problem in Hong Kong and to urge and support immediate action.

Yours sincerely,

Philip Leung,
President, Canadian Chamber of Commerce in Hong Kong

cc Mr John WITT, Chairman, Canadian Chamber of Commerce in Hong Kong

Mr Hendrik ROSENTHAL, Chairman, Sustainable Development Committee, Canadian Chamber of Commerce in Hong Kong

Ms Carrie LAM, JP, Chief Secretary for Administration, HKSAR

Ms Christine LOH Kung-wai, JP, Under Secretary for the Environment, HKSAR

Dr KO Wing Man, BBS, JP, Secretary for Food and Health, HKSAR

Prof Anthony CHEUNG Bing-leung, GBS, JP, Secretary for Transport and Housing, HKSAR

Mr CHAN Mo-po, Paul, MH, JP, Secretary for Development, HKSAR

**The Canadian Chamber of Commerce in Hong Kong
Sustainable Development Committee**

Position Paper on Air Quality in Hong Kong

Summary

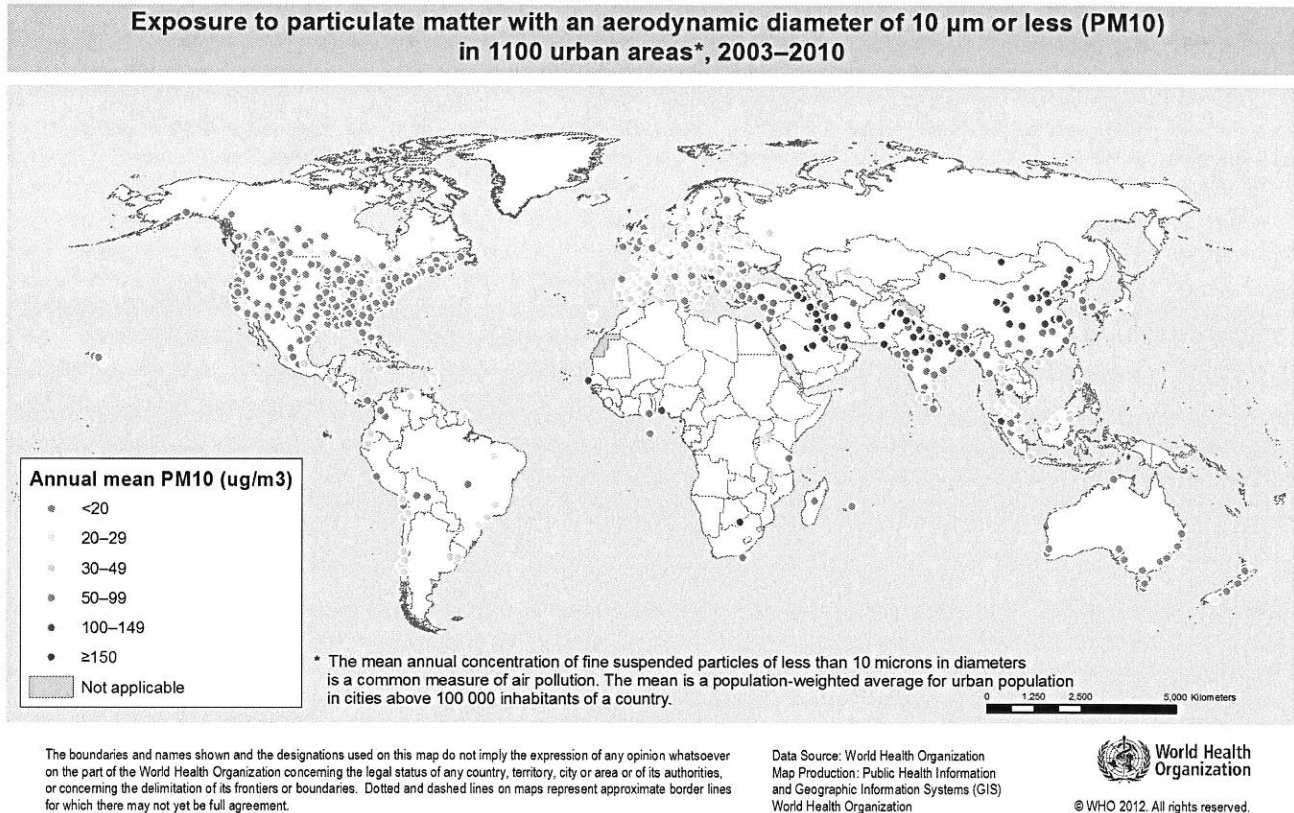
Air quality has been one of the most prominent issues facing Hong Kong over the past 15 years or more. Although historically air quality has been viewed as an environmental issue, research in recent years has demonstrated that poor air quality, in particular roadside air quality, is a direct and imminent health issue for Hong Kong citizens – attributable to thousands of pre-mature deaths and billions of dollars in medical cost and productivity loss every year. It is also a fundamental social and economic issue that directly impacts Hong Kong's viability as a responsible, sustainable, world-class city.

CanCham recognizes that the air quality issue emerged as both a local and cross-border problem that accompanied the rapid economic development of the PRD region in the past 2 decades, and that the HKSAR Government has developed and implemented numerous initiatives, including local-source reduction and cross-border collaboration, to achieve the current level of air quality. The fact remains that Hong Kong's air quality, although similar to many Asian cities, is poor compared to advanced regions such as North America, Europe and Australasia. Therefore, HKSAR Government needs to lead the community in implementing further initiatives to improve Hong Kong's air quality, not limiting to those described in the Clean Air Plan issued on March 2013. CanCham's position is for the HKSAR Government to:

- **Educate the community and stakeholders with respect to the health benefits and medical savings of such initiatives to minimize opposition and increase the community's willingness to pay for cleaning up the air.**
- **At the same time, recognize clean air as a public good and allocate sufficient public funds to implement the necessary "one-off" initiatives to achieve the desired level of air quality under a cross-departmental government body who can take a holistic view on the impact to public finance.**
- **Focus on implementing the identified initiatives in the Clean Air Plan, as well as other viable initiatives, with definitive target dates.**

Status of Hong Kong's Air Quality

The air quality of Hong Kong is frequently featured as a headline issue in local, regional and international media. However, it would be useful to review the status of HK's air quality in an objective manner. The following illustration by the World Health Organization (WHO) depicts the exposure to particulate matters (10µm or less) in different urban areas around the world:

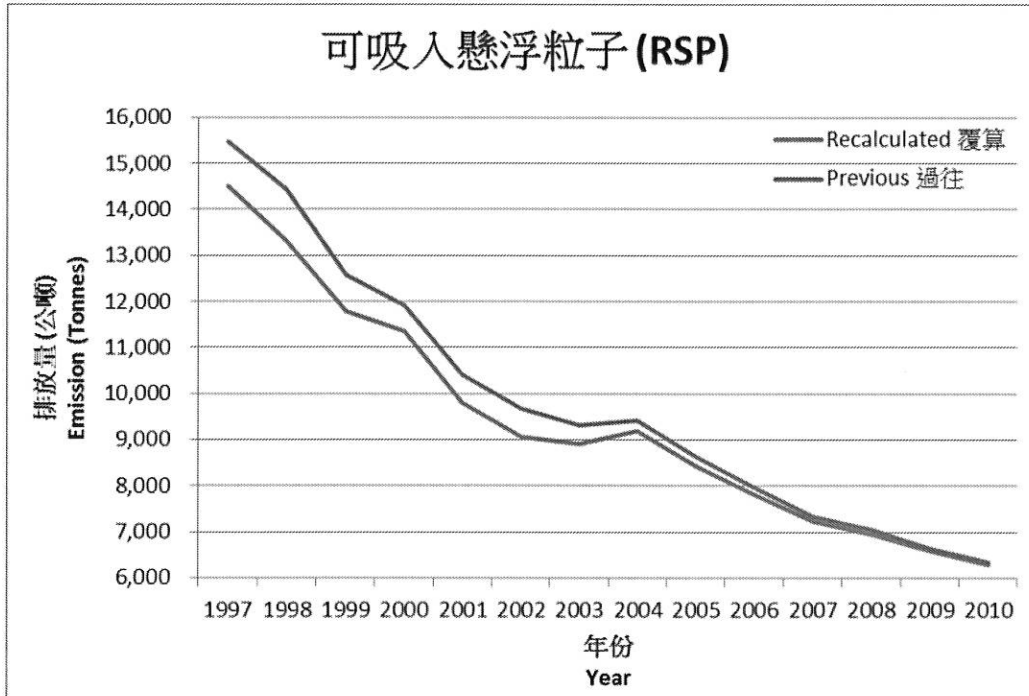


It is evident that Hong Kong's air quality is similar to other cities in Asia. However, this level of air quality is worse than most urban areas in advanced regions such as North America, Europe and Australasia; and Annual Mean PM10 concentrations are above the 20 µg/m³ guideline recommended by the WHO.

City	Country	Annual Mean PM10 (µg/m ³)	Year
Sydney	Australia	12	2009
Região Metropolitana Rio Janeiro	Brazil	64	2009
Toronto	Canada	21	2008
Beijing	China	121	2009
Shanghai	China	81	2009
Hong Kong	Hong Kong (SAR)	50	2009
Kuala Lumpur	Malaysia	49	2008
Singapore	Singapore	29	2009
Paris	France	38	2008
London	UK	29	2008
New York	USA	21	2009

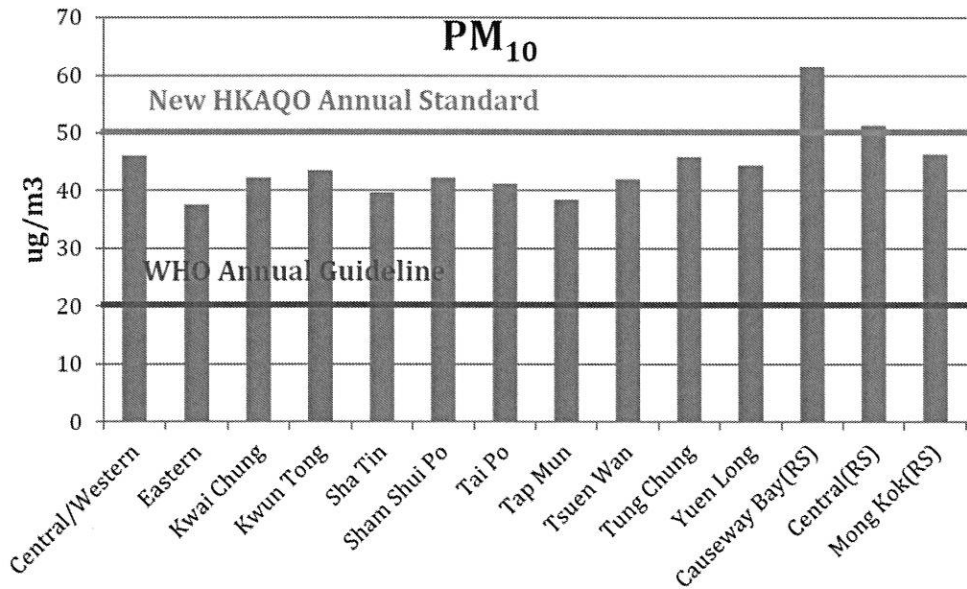
Source: http://www.who.int/phe/health_topics/outdoorair/databases/en/

In the past few years, there has been a decreasing trend of particulate matter (PM) and SO₂ pollution from local pollution sources in Hong Kong.



Source: Environmental Protection Department

However, the particulate matter (24-hours) emissions concentration recorded in air quality monitoring stations in Hong Kong has yet to achieve the WHO annual guideline, in particular with respect to the roadside monitoring stations. Therefore, much needs to be done in Hong Kong to improve the roadside air quality, and also in the Pearl River Delta region in order to improve the ambient air quality.



Source: Environmental Protection Department

The Impact of Poor Air Quality to Hong Kong

Although historically regarded as an environmental issue, research in recent years has demonstrated that poor air quality, in particular roadside air quality, is a direct health issue for Hong Kong citizens. According to a 2011 study by the Hong Kong University, the estimated annual health impact attributable to air pollution is over 2,100 deaths, 130,000 hospital bed-days, 8.6 million doctor visits, at an annual community cost of HK\$24

billion. Roadside pollution, in particular, presents the greatest daily health risk to the people of Hong Kong as air pollutant levels at roadside monitoring stations are usually much higher than those measured at general (roof top) stations¹.

There are other impacts of poor air quality to Hong Kong such as loss of tourist and associated revenue, potential lowering of property value as a result of decisions not to locate in HK, difficulty for businesses to attract talent to HK and the resultant reduction in the city's overall competitiveness – a key concern for the Canadian Chamber of Commerce.

Sources and Factors Affecting HK's Air Quality

Hong Kong's air quality has been affected by a number of factors including:

1. Local emission sources, such as motor vehicles, marine traffic, industry and power plants;
2. Concentrated cityscape in HK leading to the "street canyon" effect; and
3. Rapid economic development of the Pearl River Delta region in the past 2 decades.

The 2012 Clean Air Network Air Quality Review² also pointed out a number of important observations:

1. Kwai Chung and Tsuen Wan had the highest sulphur dioxide (SO₂) levels out of all government monitoring stations, indicating significant contribution from ship emissions.
2. NO₂ pollution at roadside stations was 2 times worse than at general stations, indicating significant impact from vehicle emissions.
3. There is, in general, a decreasing trend of air pollution (mainly PM and SO₂); the trend is likely due to the improvements in regional air quality in the PRD area where significant improvements were evident from 2006 to 2012.³

% of change in annual concentration (2012Jan-Jun vs. 2006)	SO ₂	NO ₂	O ₃	PM ₁₀
Regional	↓64%	↓20%	↓6%	↓26%
Hong Kong	↓55%	↑3%	↓3%	↓27%

CanCham recognizes that the HKSAR Government has developed and implemented a number of initiatives, such as regional collaboration in setting air quality targets, significant tightening of emission caps for local power plants, incentive programmes to encourage replacement of diesel taxis and mini-buses, introduction of new Air Pollution Health Index, etc., to achieve the current level of air quality. The HKSAR Government's Clean Air Plan also plans to tackle roadside emissions (e.g. rail as transport backbone, improved urban planning to minimize street canyon effects, replacement of 80,000 older commercial diesel vehicles between 2014-19) and marine emissions (e.g. requiring ocean-going vessels berthing in HK to use cleaner 0.05% sulphur fuels, commencing discussion to mandate fuel switching in HK and PRD ports, etc.). CanCham agrees with the major strategies to reduce roadside emissions, shipping emissions and intensifying cross-boundary collaboration. However, CanCham urges the HKSAR Government to take implementation actions on the additional initiatives recommended below.

CanCham's Position

1. **Educate the community and stakeholders with respect to the health benefits and medical savings of such initiatives to minimize opposition and increase the community's willingness to pay for cleaning up the air.** The Hedley Environmental Index can be a source of reference for such public education.

Although the Clean Air Plan recognizes its primary premise is to improve public health, the quantification of health benefits and medical savings to the public is absent. CanCham recommends that such savings quantification and the translation into tangible and easily understandable messages, for example the

¹ Response to the newly proposed Air Quality Health Index in Hong Kong, Hong Kong College of Pediatrics, Feb 2013.

² http://www.hongkongcan.org/doclib/2012%20Air%20Quality%20Review%20-%20ENG_v3.pdf

³ There were significant air quality improvement initiatives in HK as well including imposition of stringent emissions caps on local power plants, installation of emission reduction equipments in coal-fired power plants, replacement of Euro II commercial vehicles in 2010, etc.

increased health/medical cost per 1-hour of roadside exposure on Nathan Road, are essential in the public dialogue to minimize opposition and increase the community's willingness to pay (either in monetary or inconvenience terms) on clean air. The economic benefits arising from talent retention and the growth of a sustainable business community should also be included. We recommend a clear and direct awareness campaign to the community on the status of 1) air quality, 2) current and planned initiatives, and 3) the benefits and impacts of such initiatives.

2. The government should clearly articulate which measures would be required and what costs and benefits would arise in implementing a phased programme to meet the WHO guidelines. The new HKAQO must be clearly and transparently linked to WHO thresholds to make it credible and for it to provide a meaningful barometer of progress on air quality and health risk.

3. At the same time, recognize clean air as a public good and stand ready to use public funds to implement the necessary "one-off" initiatives to achieve the desired level of air quality under a cross-departmental government body who can take a holistic view on the impact to public finance.

CanCham commends the HKSAR Government for the willingness to invest public funds to improve air quality, as evident by the Subsidy Programme for Replacement of Catalytic Convertors on Taxis & Light Buses and for the local supply of ultra-low sulphur diesel and the incentive programme to retire old Diesel Commercial Vehicles. CanCham encourages the HKSAR Government to explore and implement other similar "one-off" subsidy programs or initiatives under a cross-departmental government body, including Environmental Bureau, Transport & Housing Bureau, Food & Health Bureau, Development Bureau as well as the Financial Secretary. This cross-departmental body can then take a holistic view on public finance; recognizing that public funds invested in a particular clean air subsidy programme can be evaluated against reduction in medical and other public costs.

4. Focus on implementing the identified initiatives in the Clean Air Plan, as well as other viable initiatives, within definitive target dates. As the HKSAR Government is implementing various initiatives on marine emissions and local power plant emissions as outlined by the Clean Air Plan, CanCham supports the Government's initiatives and has no additional recommendation in these areas, other than to add definitive target dates to the initiatives outlined. CanCham recommends the HKSAR Government to study and consider the following additional initiatives in the roadside emissions and regional collaboration areas:

- a. Introduce Low Emission Zones (LEZ) at busy corridors not only for buses but for all vehicles by a definitive date, such as 2017 to allow approximately 3 years for fleet change. Given 56% of vehicular PM10 emissions and 31% of vehicular NOx emissions come from Heavy Goods Vehicles, LEZs should apply to all vehicles rather than limited to buses. Such LEZs would create the demand and increase the penetration rate of hybrids and electric vehicles given a sufficient lead time. To minimize opposition and provide optionality to road-users, non-hybrid/non-electric vehicles may also be considered to enter the LEZs under an electronic road pricing scheme. Moreover, given the relentless growth in the number of private vehicles, an increase in the first registration tax should also be considered as an economic dis-incentive to lower the vehicle growth rate.
- b. Mandate the use of electric or trolley buses in a small number of busy corridors as a pilot scheme. For busy corridors such as Nathan Road and Hennessy Road which are both traffic and pedestrian-heavy, the public health impact at these locations is likely to be the most significant. Limiting the number of such busy corridors would help the HKSAR Government manage any opposition. As trolley buses are being used in many advanced European and North American cities, the practicality and "implement-ability" is expected to be high, especially with the advent of technological advances such as super-capacitor and electric buses.
- c. Enhance cross-border collaboration, including sharing of best practices to enhance enforcement of emission reduction initiatives. Although the Clean Air Plan recognizes regional collaboration as the key to solving Hong Kong's pollution issue, it has limited coverage on the means and steps to enhance such collaboration other than striving to be the leader in air quality management and research. CanCham recommends such regional collaboration to focus on enhancing monitoring

and enforcement of emission targets. Sharing of best practices in audits and enforcement is recommended to be an area of focus.

END