

Written Submission to the Legislative Council
Panel on Environmental Affairs Subcommittee on Improving Air Quality
Discussion on “Air Quality Objectives and their associated health impacts”

12 February 2009

Honourable Members of the Legislative Council:

I understand that two health experts, Professor Anthony Hedley and Professor TW Wong, have commented from the medical and health perspectives of this Air Quality Objectives (AQOs) review. They have kindly provided me with their submissions. Hence, I shall not focus on these aspects but instead highlight other issues relevant to the current review. Nevertheless, I want to state clearly that I am in support of their comments.

Here are my comments:

What is the problem with Hong Kong’s current AQOs, and why it is so important to have an up-to-date set of AQOs?

In Hong Kong, AQOs are regularly used in two places: (1) to determine the approval or rejection of projects in the Environmental Impact Assessment (EIA) process, and (2) to inform the public the status of our air quality through annual Air Quality Reports and hourly Air Pollution Index (API) published by the Hong Kong Environmental Protection Department (EPD).

EIA is the process through which the community can stop new projects that are harmful to the public. For air impact, any project resulting in a violation of an AQO cannot go forward unless mitigation measures are taken to avoid such exceedence. Project proponents have to improve the environmental (in particular, air) performance so that there is no violation of the AQOs; project proponents would not have to reduce their air

impact if the AQOs are loose. **Hence, a loose set of AQOs is a license to pollute, while a good set of AQOs is a driver for air quality improvement.**

Moreover, the AQOs are the government's reference of "acceptable" air quality. The government informs the public whether the air quality is acceptable by comparing pollutant concentrations against the AQOs. These comparisons are published in EPD's annual air quality reports and in hourly API announcements.

If one goes back to the record and check how often our AQOs are violated, one will find a low percentage. Take RSP (respirable suspended particulate) as an example, EPD record shows that the daily AQO for RSP is violated about 1-2% of the time at general stations and up to 5% of the time at roadside stations. This does not seem to show that our air quality is poor as only a few percent of the time the pollutant concentrations are above "acceptable" level.

However, if one uses an up-to-date AQ standard, say that of the European Union (EU), one will find that around 60% (not 1-2%) of the time the daily RSP concentrations are above the EU standard (i.e. considered unhealthy in the EU) at the general stations. Worst, the same data show that about 80-90% (not 5%) of the time the air is unhealthy at our roadside stations. We certainly would have recognized that our air quality is poor if we have used the EU standard to describe our air quality. **Hence, with a loose AQO, the public is not being properly informed of the health risks they face.**

There is perception that Hong Kong's air emission is small, and that much of our air pollution problem is related to the transport of pollutants from neighbouring regions. This may be related to the rapid deterioration of visibility in the past decade, which is the "visible" part of our air pollution problem. Yes, we acknowledge that Hong Kong has a severe regional air quality problem that has become more serious during the past decade. However, the air pollutant concentration data also show that, for as long as data have been available, Hong Kong has had an even more acute (although less visible) roadside air pollution problem that is related to our local transport and build environment. I would argue that most of the public were not aware of this because of

our loose AQOs, which suggested only 5% (not 80-90%) of the time the air at the roadside is unacceptable.

Improvement of air quality requires support from all sectors of the community. To get public support, it is critically important that we accurately inform the public of the true health risks (and economic costs) of air pollution. **If the public is not informed with the most up-to-date scientific information on the health risks they face, how can we expect them to make the difficult choices to help improve Hong Kong's air quality?**

How should we revise the AQOs? What should be the guiding principle?

According to EPD documents, Hong Kong's AQOs were established in 1987 after making reference to researches done mainly in the United States (US). Hence, it is useful to compare the air quality management systems and the establishment of air quality objectives / standards in Hong Kong and in the US.

In the US, the Clean Air Act requires the Administrator of the Environmental Protection Agency (EPA) to set air quality standards that "*are requisite to **protect the public health***" with "*an adequate margin of safety*". The Clean Air Act also requires the EPA to review their air quality standards every five years, and to update the standards to ensure that they provide adequate health protection as necessary. In contrast, according to Hong Kong's Air Pollution Control Ordinance (APCO), the AQOs are set up "*to **promote the conservation and best use of air in the public interest***". This is vague, does not refer specifically to protection of public health and therefore open to different interpretations. There is no requirement for period review of the AQOs in Hong Kong.

Prof. Hedley and Prof. Wong have commented on the fundamental importance to state clearly that the primary purpose of AQ management and hence the AQOs must be for protection of the public health, and I will not drill on that here.

However, as the government had noted in its January paper that the consultants are recommending a regular review mechanism of the AQOs, it is hence **important to**

amend the APCO and state unambiguously that the primary guiding principle for revision of our AQOs must be for protection of public health. If the guiding principle for the setting of the AQOs is open for interpretation, the regular review mechanism will not be able to ensure that future revisions will help really help protect the public health.

Also, the government's January paper highlighted "practicality" as a criteria for consideration of further tightening the AQOs in future reviews. We must be very careful about this. Experiences from the US and EU showed that (1) improvement of air quality is technically feasible, and (2) the successive tightening of the AQ standards in response to new medical findings are by far the most important mechanism driving air quality improvements in these countries. Hence, what is practical depends not only science, technology, and also very much on political will. Implicit in the "practicality" or "feasibility" argument is the notion that we need to wait until for the attainment of one set of AQOs before we can consider further tightening it; in other words, if you cannot even achieve the current AQOs, how can you consider achieving a tighter set of AQOs?!

This is not true because **AQOs or Air Quality Standards are driver for policy change.**

Take California as an example, the state has never been in total compliance with their ambient AQ standards. Nevertheless, California continues to tighten its standards with new medical evidence, and we see that its pollutant concentrations had been steadily decreasing in response to this proactive policy. In contrast, Hong Kong's not-tightening of our AQOs did not help us attain the AQOs in any of the past 21 years. The critical factor is political will, as successfully and brilliantly demonstrated by the dramatic improvement in air quality in Beijing during the 2008 Olympics.

We must set a set of AQOs that protect public health, and not one dictated by some limited vision of what can or cannot be done in a few years. To set a loose target is to give up on the public expectation and the government's responsibility to push hard policy for public health protection.

Should Hong Kong adopt the Air Quality Guidelines (AQGs) of the World Health Organization (WHO) as our AQOs?

My first answer is “why not?”

First, I acknowledge WHO’s note that each country should consider its own circumstances in setting its own standards, with specific reference to risks to health, technological feasibility, economic consideration, country’s level of development, capability in air quality management, political and social factors, etc.

Nevertheless, Hong Kong has much to be proud of in its air quality management experience. For example, our adoption of low-sulphur and ultra-low sulphur diesel was examples for others to follow; our air quality data monitoring and management system is one of the best in the world; we have good understanding of health impact through local health studies. We may be short on some of the specific items listed above, but **our understanding on the risks to health, our access to technology, our level of development, our economic conditions, and our capability in air quality management are all first-rated and benefit our name as Asia’s World City.** Hence, I agree with Prof. TW Wong’s submission that Hong Kong should take bold step to adopt the WHO AQGs as our AQOs, and show the world that Hong Kong has real vision and commitment for cleaning our air.

One may question the feasibility of having the WHO AQGs as our AQO, and achieving in the short or medium term. However, we may take note of the approach used by the EU, which adopted a very protective set of air quality standards that are not met by most of its member states at this time. The EU, in determination of compliance of its air quality directives, allows the member states to have a fixed number of exceedances (i.e. days with pollutant concentrations higher than the air quality standards), and the number of exceedances allowed decrease with time.

Hong Kong can consider a similar approach by adopting the AQGs as our AQOs, allowing a realistic number of exceedances in the short-term, and progressively

reducing the number of allowed exceedances until an acceptable value is reached. This approach is practical, shows Hong Kong’s commitment and leadership towards the WHO AQG, and clearly informs the public of the actual health risks they face.

If the community decides that it is too difficult to adopt the WHO AQGs now and chooses to use Interim-Targets (ITs) as our interim AQOs, I strongly recommend that (1) we use **the WHO AQG as the starting point to consider limited loosening of the guideline values to interim-target values** (i.e., move from AQG to IT-3) as our immediate AQOs, and (2) we must **set a clear schedule as when Hong Kong will adopt the WHO AQGs as our AQOs.**

As Asian’s world city and after more than two decades of experience in environmental management, we certainly should not use the most lenient set of “entry level” interim targets (IT-1) as our starting point. If we must deviate from AQG, we should at least start with a set of objectives commensurate with our status as a world city. A good “entry point” would be one similar to the current EU standards.

Moreover, even if we do not adopt the WHO AQGs, we must set a schedule for its eventual adoption within this review exercise. **To fail to do so suggests that we dare not envision our city achieving the AQGs, and set a precedent and a very bad example for subsequent reviews of the AQOs.**

Submitted by

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