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16 October 2019

Chief Council Secretary (1)1
Council Business Division 1
Legislative Council Secretariat
Legislative Council Complex
1 Legislative Council Road, Central
Hong Kong
(Attention: Ms. Angel SHEK)

Dear Ms. Shek,

Panel on Environmental Affairs

Follow-up to meeting on 25 March 2019

I refer to your letter dated 27 March 2019 enclosing follow-up issues on agenda item IV "Review of Air Quality Objectives" of the captioned meeting raised by Hon. HUI Chi-fung on 26 March 2019, our response is set out in the Annex for Members' perusal please.

Yours faithfully,

(Dave T. Y. HO)
for Director of Environmental Protection

Encl.

Annex

Administration's response on issues raised by Hon HUI Chi-fung relating to agenda item IV "Review of Air Quality Objectives" at the meeting on 25 March 2019

Replies to the following issues raised in the letter dated 26 March 2019 from Hon HUI Chi-fung to the Chairman of the Panel on Environmental Affairs are as follows:

Air Quality Objectives in Hong Kong and Air Quality Standards in the Pearl River Delta Region

2. Based on our understanding, the review of the National Ambient Air Quality Standards is on a need basis without any specified timeline. The Class II concentration limits (i.e. applicable to urban environment) as stipulated in the National Ambient Air Quality Standards are used as the benchmark for assessing air quality in the Pearl River Delta (PRD) region. Details of the prevailing Class II concentration limits of the national standards, the AQOs in Hong Kong and the corresponding interim and ultimate targets of the World Health Organisation (WHO) Air Quality Guidelines (AQGs) are shown in **Table 1**.

Influences on local air quality due to extreme weather and regional air pollution

3. In 2012, the Environmental Protection Department (EPD) commissioned the Hong Kong University of Science and Technology (HKUST) to conduct a study, which indicated that the air pollution recorded by air quality monitoring stations in Hong Kong was subject to strong influence of non-local pollution sources. As for meteorological factors, the occasional calm wind conditions in Southern China could lead to accumulation of air pollutants within the PRD region. When north-westerly winds prevail, the polluted air mass from the PRD region may flow to Hong Kong resulting in increase in concentration levels. Furthermore, Hong Kong is situated at the subtropical zone and is susceptible to the influence of tropical cyclones and typhoons every year. Whenever a tropical cyclone or typhoon approaches Taiwan, the PRD region including Hong Kong will be influenced by its outer subsiding air, resulting in the accumulation of air pollutants in the to high levels, especially the increase in the concentrations of ozone and $PM_{2.5}$. These are the uncontrollable circumstances as referred to in the WHO AQGs.

Annex

Table 1: Class II concentration limits of the National Ambient Air Quality Standards, Hong Kong's AQOs and the interim and ultimate targets of the WHO AQGs

Pollutants	Averaging Time	Class II concentration limits of the National Ambient Air Quality Standards		WHO AQGs ($\mu g/m^3$) Note 5				No. of exceedance allowed in Hong Kong's prevailing AQOs
		Conc. Limit ($\mu g/m^3$)	No. of Allowable Exceedance Note 4	IT-1	IT-2	IT-3	Ultimate target	
Sulphur Dioxide (SO_2)	10-minute	-	-	-			**<u>500</u>**	3
	1-hour	500	Not specified	-				-
	24-hour	150	Note 1	**<u>125</u>**	50	-	20	3
	Annual	60	Not applicable	-				-
Respirable Suspended Particulates (RSP/PM_{10})	24-hour	150	Note 2	150	**<u>100</u>**	75	50	9
	Annual	70	Not applicable	70	**<u>50</u>**	30	20	Not applicable
Fine Suspended Particulates ($FSP/PM_{2.5}$)	24-hour	75	Note 2	**<u>75</u>**	50	37.5	25	9
	Annual	35	Not applicable	**<u>35</u>**	25	15	10	N/A
Nitrogen Dioxide (NO_2)	1-hour	200	Not specified	-			**<u>200</u>**	18
	24-hour	80	Note 1	-				-
	Annual	40	Not applicable	-			**<u>40</u>**	Not applicable
Ozone (O_3)	1-hour	200	Not specified	-				-
	8-hour	160	Note 3	**<u>160</u>**			100	9
Carbon Monoxide (CO)	1-hour	10,000	Not specified				**<u>30,000</u>**	0
	8-hour	-	-				**<u>10,000</u>**	0
	24-hour	4,000	Note 2	-				-
Lead (Pb)	Annual	0.5	Not applicable	-			**<u>0.5</u>**	Not applicable
	3-month	1.0	Not applicable	-				-

Figures in bold and underlined are the concentration limits of the Hong Kong's prevailing AQOs.
IT – Interim target

Note 1： 98th percentile of 24-hour average concentrations over a year

Note 2： 95 th percentile of 24-hour average concentrations over a year

Note 3： 90 th percentile of daily maximum 8-hour rolling average concentrations over a year

Note 4： Reference: Technical regulation for ambient air quality assessment (on trial) (HJ663-2013)

Note 5： The WHO Guidelines do not provide any recommendations on the number of allowable exceedances, but point out that “when the [air quality] standards are to be legally binding, criteria must be identified to determine compliance. This is quantified through the number of acceptable exceedances over a certain period of time. Compliance criteria are defined in each country in order to compare the most representative data with the standards, and to minimize the designation of non-compliance owing to uncontrollable circumstances (such as extreme weather)”