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Panel on Environmental Affairs

Meeting on 2 July 2019

Updated background brief on combating climate change prepared by the Legislative Council Secretariat

Purpose

This paper provides updated background information on combating climate change in Hong Kong. It also gives a brief account of the major views and concerns expressed by Members when related issues were discussed by the relevant committees of the Legislative Council.

Background

The problem of climate change

2. The United Nations' Intergovernmental Panel on Climate Change has found that the earth's atmospheric carbon dioxide ("CO₂") concentration, the main driver of global climate change in the last century, has increased by over 40% since pre-industrial times. It has also confirmed that human influence has led to the warming of the atmosphere and the ocean, changes in the global water cycle, reduction in snow and ice, rise of global mean sea level and more frequent extreme weather. In Hong Kong, the effects of climate change have already emerged with the city experiencing raised temperatures, more frequent extreme rainfall and rising sea level.

International efforts to combat climate change

3. The Paris Agreement, a legally binding global agreement within the United Nations Framework Convention on Climate Change ("UNFCCC") dealing with greenhouse gas ("GHG") emissions,¹ was adopted by 195 countries

¹ GHGs are gases in the atmosphere that absorb and trap heat. UNFCCC requires national reporting on six key GHGs: CO₂, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride. CO₂ is the most common GHG emitted by human activities, in terms of the quantity released and the total impact of global warming through the combustion of fossil fuels.

including China in December 2015 with a view to containing global temperature rise to well below 2°C compared with pre-industrial times, while striving to limit it even to 1.5°C.²

4. In October 2018, UNFCCC published the Special Report on Global Warming of 1.5°C ("Special Report"), making an urgent call for policymakers that limiting global warming to 1.5°C would require rapid, far-reaching and unprecedented changes in all aspects of society. The Special Report presents the multiple benefits of limiting global warming to 1.5°C compared to 2°C including a slower rate of sea-level rise, lower impact on terrestrial, freshwater and coastal ecosystems, lower ocean warming and acidification, lower climate-related risks to health, food security, water supply, human security and economic growth. To contain global warming within 1.5°C, human-caused carbon emissions have to decline by about 40% from 2010 levels by 2030, reaching net zero around 2050.

Hong Kong's strategies and measures to combat climate change

5. In Hong Kong, the Government established the Steering Committee on Climate Change in 2016 under the chairmanship of the Chief Secretary for Administration to steer and coordinate actions amongst different bureaux and departments and released Hong Kong's Climate Action Plan 2030+ in January 2017.³ The Action Plan has set out the target to reduce Hong Kong's carbon intensity by 65% to 70% by 2030 compared with the 2005 level, as well as the key measures on mitigation, adaptation and resilience to combat climate change. Reviews on Hong Kong's climate actions would be conducted every five years starting from 2020 so as to meet the relevant requirement of the Paris Agreement.⁴

6. According to the Administration, the long-term climate mitigation strategy for Hong Kong may cover the following key elements:

- (a) decarbonization of the electricity generating sector by widely adopting renewable energy;

² The Paris Agreement came into effect in November 2016.

³ The Steering Committee on Climate Change was formed with membership from 13 policy bureaux and three departments (i.e. Information Services Department, Office of the Government Economist and Hong Kong Observatory). Other bureaux and departments may attend its meetings on an ad hoc basis. The full membership list is available at the following hyperlink: <https://www.climateready.gov.hk/page.php?id=55&lang=1>

⁴ The Paris Agreement requires parties to UNFCCC to review their GHG emission reduction targets every five years.

- (b) enhancing energy efficiency and conservation especially for buildings;
- (c) greater use of public transport and promotion of walking and cycling;
- (d) wider use of electric vehicles;
- (e) enhancing city planning; and
- (f) enhancing waste reduction and further exploitation of waste to energy opportunities.

7. Pursuant to the Paris Agreement, Hong Kong (as part of China) needs to draw up its own long-term decarbonization strategy up to 2050 by 2020. To this end, the Government has invited the Council for Sustainable Development ("SDC") to launch a public engagement exercise in 2019. The public engagement exercise is expected to be completed in about 18 months so that the Government will be able to submit Hong Kong's long-term decarbonization strategy to the Central People's Government by 2020, which will then put forward the strategy to the secretariat of UNFCCC. Taking into account the carbon emission sources in Hong Kong as well as the experience of other cities/regions when formulating relevant strategy, the public engagement exercise will be focused on three key issues including setting up an appropriate carbon reduction target, decarbonization of the electricity generation sector and other key measures to reduce carbon emissions (i.e. energy saving and conservation for buildings, reduction of carbon emissions from transport and promotion of low-carbon living).

Major views and concerns expressed by Members

8. The Panel on Environmental Affairs ("EA Panel") discussed the carbon reduction targets for Hong Kong and the Administration's measures to combat climate change at the meeting on 26 June 2017. Members also raised questions relating to climate change during policy briefings on initiatives related to environmental protection and examination of Estimates of Expenditure in recent years. The major views and concerns expressed by Members are summarized in the ensuing paragraphs.

Carbon emissions reduction targets

9. Members criticized the Administration for its lack of prompt actions to tackle the imminent threat of climate change. They called on the Administration to review its targets and strategies for reducing GHG emissions with reference to the findings in the Special Report and formulate a roadmap for attaining the carbon emissions reduction targets.

10. The Administration advised that they were on track to achieve the 2030 carbon intensity reduction targets (i.e. the carbon intensity to be reduced by 65% to 70% by 2030 with the 2005 level as the baseline). Hong Kong's carbon intensity in 2016 was 0.017kg CO₂-equivalent per Hong Kong Dollar Gross Domestic Product, representing a reduction of about 29% from the 2005 level. The Administration was compiling the Hong Kong GHG inventories for 2017 and 2018, which would be released as and when ready. Besides, as electricity generation accounted for around two-thirds of the carbon emissions in Hong Kong, revamping Hong Kong's fuel mix remained a key vehicle to reduce carbon emissions. In this connection, the Administration aimed to increase the percentage of gas generation of the two local power companies to around 50% of the total fuel mix for electricity generation by 2020.

Extreme weather conditions

11. Members expressed concerns about the challenges posed by extreme weather conditions due to climate change. For example, Super Typhoon Mangkhut caused extensive damage to Hong Kong in September 2018, resulting in storm surges and exposed the weaknesses in the wind-resistant designs of some infrastructures. They urged the Administration to review and improve the relevant designs of new infrastructures such as sewage treatment facilities and landfills, as well as enact legislation on contingency measures for handling disasters caused by climate change.

12. The Administration advised that they would strengthen analysis on climate change, forecast on extreme weather, and promotion of disaster preparedness to enhance the city's resilience against climate change. After Super Typhoon Mangkhut battered Hong Kong in September 2018, the Administration commenced a review on its mechanism of handling super typhoons, with a view to enhancing the resilience and recovery capacity of the city. The overall review was completed in the first half of 2019. In addition, the Drainage Services Department commissioned in 2015 a Climate Change Impact Study on Sewage Facilities in Hong Kong and would propose corresponding mitigation and adaptation measures in respect of the sewage facilities' planning, design, construction, operation and maintenance when the study was completed in end 2019.

Use of technologies to combat climate change

13. Members called on the Administration to promote the research and application of new green technologies to combat climate change, thereby contributing to the development of a "smart environment".

14. The Administration agreed that promotion of innovation and technology ("I&T") could help combat climate change and the Electrical and Mechanical Services Department ("EMSD") had all along been collaborating with the academia and the trade to promote I&T related to electrical and mechanical ("E&M") services including those that would help enhance energy efficiency and conservation and the development of renewable energy.

Cooperation between Hong Kong and the Mainland on combating climate change

15. Members enquired about the projects and programmes jointly launched by Hong Kong and the Mainland authorities to combat climate change and establish a green, low carbon and high technology smart city cluster.

16. The Administration advised that the Hong Kong/Guangdong Joint Liaison Group on Combating Climate Change had been set up by the Environment Bureau and the Development and Reform Commission of Guangdong Province in May 2012, with a view to coordinating the climate change measures/activities as well as relevant scientific research and exchanges of both sides. Such efforts included exchanges on developing techniques for short-term climate forecasting, climate warning, strengthening sea-level rise research and slope safety management, etc. With the development of the Guangdong-Hong Kong-Macao Greater Bay Area, it was expected that there would be closer collaboration between Guangdong and Hong Kong on combating climate change.

Latest development

17. At the meeting on 2 July 2019, the Administration will brief EA Panel on the public engagement on long-term decarbonization strategy to be launched by SDC, and report the progress of its work on combating climate change.

Relevant papers

18. A list of relevant papers is set out in the **Appendix**.

Combating climate change

List of relevant papers

Date of meeting	Event	Paper
5 April 2017	Special meeting of the Finance Committee ("FC") for examination of Estimates of Expenditure 2017-2018	Written questions raised by Members and the Administration's replies (Reply serial numbers: ENB123, 315, 316)
26 June 2017	Meeting of the Panel on Environmental Affairs ("EA Panel")	<p>Administration's paper on "Hong Kong's Climate Action Plan 2030+" (LC Paper No. CB(1)1164/16-17(03))</p> <p>Updated background brief on "Combating climate change" prepared by the Legislative Council Secretariat (LC Paper No. CB(1)1164/16-17/(04))</p> <p>List of follow-up actions arising from the discussion at the meeting on 26 June 2017 (LC Paper No. CB(1)1371/16-17(01))</p> <p>Administration's response on issues relating to agenda item IV "Hong Kong's Climate Action Plan 2030+" raised at the meeting on 26 June 2017 (LC Paper No. CB(1)1371/16-17(02))</p> <p>Motion passed under the agenda item of "Hong Kong's Climate Action Plan 2030+" at the meeting on 26 June 2017 (LC Paper No. CB(1)1216/16-17(01))</p> <p>Administration's response to the motion passed on the agenda item of "Hong Kong's Climate Action Plan 2030+" at the meeting on 26 June 2017 (LC Paper No. CB(1)1262/16-17(01))</p> <p>Minutes of meeting (LC Paper No. CB(1)23/17-18)</p>

Date of meeting	Event	Paper
30 October 2017	Policy briefing cum meeting of EA Panel	Administration's paper on "2017 Policy Address - Policy initiatives of Environment Bureau: Environmental protection" (LC Paper No. CB(1)75/17-18(01)) Minutes of meeting (LC Paper No. CB(1)399/17-18)
17 April 2018	Special meeting of FC for examination of Estimates of Expenditure 2018-2019	Written questions raised by Members and the Administration's replies (Reply serial numbers: ENB 071, 194, 289, 319)
11 October 2018	Meeting of EA Panel	Minutes of meeting (LC Paper No. CB(1)135/18-19)
22 October 2018	Policy briefing cum meeting of EA Panel	Administration's paper on "2018 Policy Address - Policy initiatives of Environment Bureau: Environmental protection" (LC Paper No. CB(1)10/18-19(01)) Minutes of meetings (LC Paper No. CB(1)276/18-19)
12 December 2018	Council Meeting	Motion on "Fully transforming into a green and low-carbon smart society and economy, and proactively alleviating and coping with global climate change" Progress report of the Motion Debate on "Fully transforming into a green and low-carbon smart society and economy, and proactively alleviating and coping with global climate change"

Date of meeting	Event	Paper
22 March 2019	Meeting of the Establishment Subcommittee	<p>Administration's paper on "Making permanent of one Administrative Officer Staff Grade C (D2) supernumerary post in the Environment Bureau to continue to take forward tasks in relation to the promotion of renewable energy and long-term development of the electricity market" (LC Paper No. EC(2018-19)27)</p> <p>Administration's follow-up paper (LC Paper No. ESC89/18-19(01))</p>
28 March 2019	Letter from Dr Hon Elizabeth QUAT to EA Panel Chairman appealing for early discussion of matters relating to combating climate change (Chinese version only)	Letter dated 28 March 2019 from Dr Hon Elizabeth QUAT (LC Paper No. CB(1)929/18-19(01))
9 April 2019	Special meeting of FC for examination of Estimates of Expenditure 2019-2020	Written questions raised by Members and the Administration's replies (Reply serial numbers: ENB183, 263, 271, 355)
27 May 2019	Meeting of EA Panel	<p>Administration's paper on "Promotion of Energy Efficiency and Conservation as well as Renewable Energy through Innovation and Technology" (LC Paper No. CB(1)1083/18-19(03))</p> <p>Updated background brief on "Promotion of energy efficiency and conservation and renewable energy in Hong Kong" prepared by the Legislative Council Secretariat (LC Paper No. CB(1)1083/18-19(04))</p>

Other relevant documents:

Government bureau/organization	Document
Environment Bureau ("ENB") in collaboration with members of the Steering Committee on Climate Change	Hong Kong's Climate Action Plan 2030+
Support Group on Long term Decarbonization Strategy	Proposed Scope and Framework of Public Engagement on Long-term Decarbonization Strategy (Chinese version only)
The United Nations' Intergovernmental Panel on Climate Change	The Special Report on Global Warming of 1.5°C

Hyperlinks to relevant Council questions:

Date	Council Question
12 December 2018	Press release on Council question (written) raised by Hon Martin LIAO Cheung-kong
29 May 2019	Press release on Council question (oral) raised by Hon CHU Hoi-dick