

立法會
Legislative Council

LC Paper No. CB(1)1292/13-14(07)

Ref. : CB1/PL/EA

Panel on Environmental Affairs

Meeting on 28 April 2014

**Updated background brief on
"Hong Kong's Climate Change Strategy and Action Agenda"
prepared by the Legislative Council Secretariat**

Purpose

This paper provides background information on Hong Kong's Climate Change Strategy and Action Agenda, and gives a brief account of the views and concerns expressed by members on the subject.

Background

2. Climate change refers to any significant change in measures of climate (e.g. temperature, precipitation, or wind) lasting for an extended period of time (decades or longer). Greenhouse gas ("GHG")¹ is widely recognized as the primary cause of climate change, which may result from natural factors (e.g. changes in sun's intensity or slow changes in the Earth's orbit around the sun), natural processes within the climate system (e.g. changes in ocean circulation), as well as human activities that change the atmosphere's composition (e.g. burning of fossil fuels) and the land surface (e.g. deforestation, urbanization, desertification etc).

¹ There are six types of GHG of concern, namely carbon dioxide, methane, nitrous oxide, and three types of synthetic gases produced during certain industrial processes. Overall speaking, carbon dioxide accounts for a substantial share of total GHG emissions.

3. The United Nations Intergovernmental Panel on Climate Change has confirmed that the global increases in GHG concentration are primarily due to human activities e.g. use of fossil fuels and change in land use. GHG affects the absorption, scattering and emission of radiation within the atmosphere and at the earth's surface. In increasing quantities, GHG is raising the global temperature to artificially high levels and altering the natural climate cycle.

4. The total GHG emissions of Hong Kong in 2010 were about 41.5 million tonnes of carbon dioxide equivalent (CO₂-e)², or around 5.9 tonnes on a per capita basis, accounting for about 0.1% of the global emissions. The carbon intensity (i.e. CO₂-e per unit of gross domestic product) was 0.023 kilograms.

Hong Kong's Climate Change Strategy and Action Agenda

5. In 2008, the Environmental Protection Department commissioned a consultancy study to review and update the local inventories of GHG emissions and removals, assess the impacts of climate change in Hong Kong and recommend long-term strategies and measures to reduce GHG emissions, as well as to adapt to the effects of climate change. The full study report and the executive summary are set out in LC Paper No. CB(1) 753/10-11(01), which is hyperlinked in the **Appendix** for ease of reference.

6. On 10 September 2010, the Administration released the consultation document on "Hong Kong's Climate Change Strategy and Action Agenda", which presents the proposals drawn up from the consultancy study. The consultation paper sets out a specific target for reducing Hong Kong's carbon intensity and charting the way for a low-carbon city. The strategy and the respective action agenda for mitigating GHG include –

- (a) **Maximizing energy efficiency** : in particular to improve energy efficiency at buildings, including reducing energy demand of air conditioning and other major electrical equipment;
- (b) **Greening road transport** : including promoting use of electrical vehicles and implementing energy efficiency standards for vehicles;
- (c) **Promoting use of clean fuels for motor vehicles** : such as biofuels;
- (d) **Turning waste into energy** : to explore the potential of renewable

² For the sake of simplicity in measuring GHG emissions, other GHGs may be expressed in terms of carbon dioxide equivalent.

energy through development of integrated waste management facility, organic waste treatment facilities and sludge treatment facility, etc; and

- (e) **Revamping fuel mix for electricity generation³** : to increase the use of non-fossil, clean and low carbon fuel for electricity generation. It is proposed that by 2020, coal will account for no more than 10% of the fuel mix, natural gas to account for around 40%, renewable energy to make up about 3% - 4% and the balance of about 50% would be met by imported nuclear power.

7. The Administration also proposes to adopt a voluntary carbon intensity reduction target of 50% - 60% by 2020 as compared with 2005 level through the implementation of the measures under the action agenda.

8. As climate change will occur at different rates and magnitudes at different locations, the consultants have identified eight key areas in Hong Kong which are more vulnerable to the adverse impacts of climate change. These areas include biodiversity and nature conservation, built environment and infrastructure, business and industry, energy supply, financial services, food resources, human health, and water resources. To adapt to the physical impacts of climate change, some of the policies and facilities in the following aspects may need to be up-scaled –

- (a) monitoring;
- (b) institutional strengthening and capacity building;
- (c) disaster management and emergency planning;
- (d) research and investigation; and
- (e) education and public awareness.

9. The public consultation ended on 31 December 2010.

Concern about nuclear safety

10. The Fukushima nuclear incident in March 2011 had aroused global concern about nuclear safety. Members had therefore requested the Administration to re-examine the proposal of increasing the share of nuclear power in the fuel mix for electricity generation (paragraph 6(e) above refers). The Administration had advised that the use of nuclear power had a bearing on the reliability of electricity

³ In 2009, coal accounted for about 54% in the fuel mix for electricity generation in Hong Kong, natural gas for about 23%, and nuclear electricity imported from the Mainland for about 23%.

supply in Hong Kong, and the future fuel mix was important to achieving the proposed carbon reduction target. It would have to take into account reviews conducted by the international community, including important international nuclear safety agencies, on the Fukushima incident and safety of nuclear energy, as well as their analyses, evaluations and conclusions, before coming to a view. The Administration had also explained that this process had affected its timeframe for early formulation of a carbon reduction strategy and target.

Deliberations by the Panel on Environmental Affairs

11. The consultation document on "Hong Kong's Climate Change Strategy and Action Agenda" was discussed by the Panel on Environmental Affairs ("the Panel") at its meeting on 22 September 2010. The Panel held a special meeting on 26 November 2010 to receive public views on the consultation document. Following the release of the report on the consultancy study in December 2010, the Administration briefed the Panel on the findings of the study on 28 February 2011. The major views and concerns raised by members are set out below.

12. Panel members were dissatisfied that the findings of the consultancy study, which contained comprehensive data and information, were only made available after the release of the consultation document. They were concerned that the public consultation was carried out in the absence of sufficient information. There were also insufficient details of the proposed measures for combating climate change. Noting that the study had identified eight sectors which were more vulnerable to impacts of climate change, members stressed the need for inter-departmental efforts to mitigate the risks identified in the vulnerable sectors.

13. On promoting use of clean fuels for motor vehicles, members were disappointed at the slow progress in increasing public reliance on mass transport, and the lack of measures in the consultation document to deal with pre-Euro and Euro I heavy diesel vehicles which were the major source of emissions. They also considered that the Administration should take the lead to replace the Government vehicle fleet with liquefied petroleum gas ("LPG") and electric vehicles in phases over the next 10 years. Efforts should be made to provide more LPG filling stations and charging facilities so as to encourage the switch to the more environment-friendly LPG and electric vehicles.

14. On revamping fuel mix for electricity generation, members questioned whether the proposed increase in the share of nuclear energy in the fuel mix for power generation from 23% in 2009 to 50% in 2020 was based on the plans to

build more nuclear power plants in Guangdong. To allay public concerns about the risk associated with the operation of nuclear plants, more information on the risk assessment, safety, cost implications, reliability of supply, disposal of nuclear wastes etc should be provided by the Administration. Given that the share of coal in the fuel mix for power generation would be decreased from 54% in 2009 to less than 10% in 2020, there was a need to assess the impact of the proposal on local power companies which might have to replace their coal-fired generators. Instead of changing the fuel mix, some members opined that priority should be given to conserving energy. To facilitate the implementation of energy conservation measures, there was a need to separate domestic users from commercial users to ensure that energy savings from the domestic sector would not be used to offset the high electricity consumption by the commercial sector. Consideration should also be given to controlling light pollution by legislation to help conserve energy.

15. On the proposed voluntary target of reducing 50% to 60% carbon intensity by 2020 as compared with 2005 level, members questioned whether this could be achieved. They held the view that the proposed target should be proportional to the Gross Domestic Product, and that the base year should be set at 1990 rather than 2005, in line with the Kyoto Protocol. Instead of adopting a carbon intensity reduction target, consideration should be given to setting a reduction target for total GHG emissions.

16. As regards the adaptation to climate change, members were particularly concerned about the impact of climate change on human health. They emphasized the need for more elaboration on adaptation options to deal with the risks associated with climate change, particularly on those more vulnerable sectors or areas. More protection should be provided for workers working outdoors who were exposed to extreme weather conditions brought about by climate change.

Council questions and motion

17. Hon KAM Nai-wai and Hon Frederick FUNG raised questions relating to the climate change consultation and fuel mix at the Council meetings on 10 November 2010, 2 November 2011 and 17 July 2013. Details of the Council questions are hyperlinked in the **Appendix** for ease of reference.

18. At its meeting on 15 February 2012, the Council passed the motion on "Government-led promotion of a territory-wide energy conservation campaign" moved by Hon CHAN Kin-por as amended by Hon CHAN Hak-kan. The hyperlinks to the wording of the motion and the progress report provided by the

Administration are provided in the **Appendix**.

Latest development

19. The Administration will brief the Panel on the outcome of the consultation on "Hong Kong's Climate Change Strategy and Action Agenda" at the Panel meeting on 28 April 2014.

Relevant papers

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

Council Business Division 1
Legislative Council Secretariat
24 April 2014

List of relevant papers

Council/ Committee	Date of meeting	Paper
Panel on Environmental Affairs	22 September 2010	<p>Administration's paper on "Public Consultation on Hong Kong's Climate Change Strategy and Action Agenda" (LC Paper No. CB(1)2833/09-10(01)) http://www.legco.gov.hk/yr09-10/english/panels/ea/papers/eacb1-2833-1-e.pdf</p> <p>Administration's Consultancy Report on "A Study of Climate Change in Hong Kong" (LC Paper No. CB(1)753/10-11(01)) http://www.legco.gov.hk/yr09-10/english/panels/ea/papers/ea0922cb1-753-1-e.pdf</p> <p>Minutes of special meeting (LC Paper No. CB(1)318/10-11) http://www.legco.gov.hk/yr09-10/english/panels/ea/minutes/ea20100922.pdf</p>
Panel on Environmental Affairs	26 November 2010	<p>Administration's paper on "Public Consultation on Hong Kong's Climate Change Strategy and Action Agenda" (LC Paper No. CB(1)2833/09-10(01)) http://www.legco.gov.hk/yr09-10/english/panels/ea/papers/eacb1-2833-1-e.pdf</p> <p>Background brief on "Hong Kong's Climate Change Strategy and Action Agenda" prepared by the Legislative Council Secretariat (LC Paper No. CB(1)538/10-11(15)) http://www.legco.gov.hk/yr10-11/english/panels/ea/papers/ea1126cb1-538-15-e.pdf</p> <p>Minutes of special meeting (LC Paper No. CB(1)2663/10-11) http://www.legco.gov.hk/yr10-11/english/panels/ea/minutes/ea20101126.pdf</p>

Council/ Committee	Date of meeting	Paper
Panel on Environmental Affairs	28 February 2011	<p>Administration's Consultancy Report on "A Study of Climate Change in Hong Kong" (LC Paper No. CB(1)1370/10-11(05)) http://www.legco.gov.hk/yr10-11/english/panels/ea/papers/ea0228cb1-1370-5-e.pdf</p> <p>Updated background brief on "Hong Kong's Climate Change Strategy and Action Agenda" prepared by the Legislative Council Secretariat (LC Paper No. CB(1)1370/10-11(06)) http://www.legco.gov.hk/yr10-11/english/panels/ea/papers/ea0228cb1-1370-6-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1)1912/10-11) http://www.legco.gov.hk/yr10-11/english/panels/ea/minutes/ea20110228.pdf</p>
Panel on Environmental Affairs	29 April 2011	<p>Administration's paper on "The Impacts of the Development of Nuclear Energy for Local Power Generation on Hong Kong" (LC Paper No. CB(1)2022/10-11(14)) http://www.legco.gov.hk/yr10-11/english/panels/ea/papers/ea0429cb1-2022-14-e.pdf</p> <p>Updated background brief on "Hong Kong's Climate Change Strategy and Action Agenda" prepared by the Legislative Council Secretariat (LC Paper No. CB(1)2022/10-11(15)) http://www.legco.gov.hk/yr10-11/english/panels/ea/papers/ea0429cb1-2022-15-e.pdf</p> <p>Minutes of special meeting (LC Paper No. CB(1)251/11-12) http://www.legco.gov.hk/yr10-11/english/panels/ea/minutes/ea20110429.pdf</p>

Hyperlinks to relevant Council Questions:

Date	Council Question
10 November 2010	Council question raised by Hon KAM Nai-wai http://www.info.gov.hk/gia/general/201011/10/P201011100202.htm
2 November 2011	Council question raised by Hon Frederick FUNG http://www.info.gov.hk/gia/general/201111/02/P201111020243.htm
17 July 2013	Council question raised by Hon Frederick FUNG http://www.info.gov.hk/gia/general/201307/17/P201307170265.htm

Hyperlink to relevant Motion:

Date	Motion
15 February 2012	Motion on "Government-led promotion of a territory-wide energy conservation campaign" moved by Hon CHAN Kin-por as amended by Hon CHAN Hak-kan http://www.legco.gov.hk/yr11-12/english/counmtg/motion/cm0215-m3-words-e.pdf Progress report provided by the Administration http://www.legco.gov.hk/yr11-12/english/counmtg/motion/cm0215-m3-prpt-e.pdf