立法會
Legislative Council

LC Paper No. CB(1) 2022/10-11(15)

Ref. : CB1/PL/EA

Panel on Environmental Affairs

Special meeting on 29 April 2011

Updated background brief on
Hong Kong's Climate Change Strategy and Action Agenda
(Position as at 26 April 2011)

Purpose

This paper sets out the background to the Hong Kong's Climate Change Strategy and Action Agenda, and gives a brief account of the views and concerns expressed by the Panel on Environmental Affairs (the Panel).

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 (IPCC) 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. The burning of ever-greater quantities of fuel oil, gasoline and coal, the logging of forests, and the practice of intensive farming methods during the past 150 years have increased the amount of GHG emitted into the atmosphere. GHG affect the absorption, scattering and emission of radiation within the atmosphere and at the earth's surface. In increasing quantities, GHG are raising the global temperature to artificially high levels and altering the natural climate cycle. According to IPCC, the global average temperatures have risen by 0.74°C during the period from 1906 to 2005. In Hong Kong, the temperature is likely to continue to rise in the future.

GHG emissions in Hong Kong

4. The total GHG emissions of Hong Kong in 2008 were about 42 million tonnes carbon dioxide equivalent (CO_2-e)[2], or around six tonnes on a per capita basis, accounting for about 0.1% of the global emissions. The carbon intensity (i.e. CO_2-e per unit of gross domestic product) was 0.025 kilograms.

Hong Kong's Climate Change Strategy and Action Agenda

5. Being part of the international community, Hong Kong should contribute to the solution to slow down climate change. 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, recommend long-term strategies and measures to reduce GHG emissions, as well as adapt to climate change. The full study report and the executive summary are set out in LC Paper No. CB(1) 753/10-11(01) which are hyperlinked below 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 -

---

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

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

(e) **Revamping fuel mix for electricity generation**[3] - 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. It is believed that this is an attainable target through the implementation of measures under the action agenda. The expected GHG emissions reduction in Hong Kong from 2005 to 2020 is given below -

	2005	2020	Reduction
Carbon intensity (CO_2-e/HK dollar GDP)	0.029kg	0.012 – 0.015 kg	↓ 50% - 60%
Total GHG emissions	42 million tonnes	28 – 34 million tonnes	↓ 19% - 33%
Per capita GHG emissions	6.2 tonnes	3.6 – 4.5 tonnes	↓ 27% - 42%

[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%.

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 up-scaled -

(a) **Monitoring** – continued vigilance is required in the light of the potentially new challenges;

(b) **Institutional strengthening and capacity building** – to strengthen existing and future infrastructure and capacity building to embed actions that facilitate adaptation to climate change within broader sectoral initiatives;

(c) **Disaster management and emergency planning** – advance planning is required to respond to climate-related events;

(d) **Research and investigation** – research would be required to address the local uncertainty with respect to the potential impacts of climate change, particularly those associated with the changing physical processes/impact on habitats and species and ecosystem adaptation, at-risk infrastructure, climate risk management, and impact on food and water supply chain;

(e) **Education and public awareness** – raising public awareness on climate change and their potential impact on socio-economics, people's livelihood, and the ecosystem.

9. The three-month public consultation ended on 10 December 2010.

Deliberations by the Panel

10. The consultation document on Hong Kong's Climate Change Strategy and Action Agenda was discussed at the Panel meeting on 22 September 2010. To gauge public views on the Action Agenda, deputations were invited to attend the special meeting on 26 November 2010. Following the release of the consultancy report on the Study in December 2010, the Administration was invited to brief the

Panel on the findings at the meeting on 28 February 2011. Panel members were dissatisfied that the findings of the 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.

11. 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.

12. 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.

13. On the proposed voluntary target of reducing 50% - 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.

Latest development

14. In view of the increased public concern on the impact of development of nuclear energy for local power generation on Hong Kong, the Panel has decided to hold a special meeting on 29 April 2011 to discuss the subject. Deputations have also been invited to express their views at the meeting.

Relevant papers

Information paper provided by the Administration for the Environmental Affairs Panel special meeting on 22 September 2010
http://www.legco.gov.hk/yr09-10/english/panels/ea/papers/eacb1-2833-1-e.pdf

Follow-up paper provided by the Administration for the Environmental Affairs Panel special meeting on 22 September 2010
http://www.legco.gov.hk/yr09-10/english/panels/ea/papers/ea0922cb1-753-1-e.pdf

Minutes of the Environmental Affairs Panel special meeting on 22 September 2010
http://www.legco.gov.hk/yr09-10/english/panels/ea/minutes/ea20100922.pdf

Information paper provided by the Administration for the Environmental Affairs Panel meeting on 28 February 2011
http://www.legco.gov.hk/yr10-11/english/panels/ea/papers/ea0228cb1-1370-5-e.pdf

Minutes of the Environmental Affairs Panel meeting on 28 February 2011
http://www.legco.gov.hk/yr10-11/english/panels/ea/minutes/ea20110228.pdf

Council Business Division 1
Legislative Council Secretariat
26 April 2011