

Progress Report
Motion Debate on “Responding to the problem of climate change”
Legislative Council Meeting on 28 November 2007

Purpose

At the Legislative Council meeting on 28 November 2007, the motion on “Responding to the problem of climate change ” moved by the Hon CHOY So-yuk and amended by Hon Miriam LAU Kin-ye, Hon Audry EU Yuet-mee, Hon Jeffrey LAM Kin-fung and Hon SIN Chung-kai was carried. Wording of the motion is at **Annex A**. This note updates Members on the follow-up actions taken in respect of the suggestions put forward by Members in the motion.

Co-operation with the Mainland and International Community

2. Climate change is a global challenge that calls for concerted action. Hong Kong will continue to closely work with the international community and other Mainland authorities to cope with the impact of climate change and mitigate greenhouse gas (GHG) emissions.

3. The Chief Executive accepted an invitation from Mr Ken Livingstone, Mayor of London, for Hong Kong to join the C40 Large Cities Climate Leadership Group (C40). Formed in 2005, C40 aims to promote collaboration among cities in the world to reduce GHG emissions and enhance energy efficiency. London, New York, Tokyo, Beijing and Shanghai are among the participating cities. The Administration will work closely with the C40 cities to combat climate change.

4. In addition, we have jointly developed with the Guangdong Provincial Government the Pearl River Delta Regional Air Quality Management Plan. Many of the measures being pursued under the Management Plan, particularly those relating to promotion of the use of cleaner fuels, cleaner production practices and energy conservation/efficiency, will help reduce GHG emissions in the region.

Inter-departmental Working Group on Climate Change

5. To strengthen co-ordination of efforts in tackling climate change amongst the relevant bureaux and departments, the Administration has established an Inter-departmental Working Group on Climate Change under the lead of Environmental Protection Department. It comprises representatives from five bureaux and 16 departments and is tasked to co-ordinate and promote actions to address climate change and reduce GHG emissions. It will also be responsible for steering a consultancy study on climate change to be commenced shortly. The terms of reference and membership of the Working Group are set out at **Annex B**.

Setting Energy Intensity Reduction Target for Hong Kong

6. International efforts to tackle climate change have been spearheaded under the 1992 United Nations Framework Convention on Climate Change (UNFCCC). The 1997 Kyoto Protocol to the UNFCCC further assigned mandatory emission targets to Annex I Parties to the UNFCCC (comprising mainly developed countries), such that their combined emissions of six main GHG between 2008-2012 would be reduced by at least 5% below the 1990 levels. For non-Annex I Parties (comprising mainly developing countries including China), this quantitative emission reduction target does not apply. The UNFCCC and its Kyoto Protocol were extended by the Central People's Government to Hong Kong with effect on 5 May 2003. As with other non-Annex I Parties which have ratified the Protocol, China (including Hong Kong) is not required to commit to any limits or reduction of GHG emissions. This differentiated arrangement has been premised on the core principle of "common but differentiated responsibilities" underpinning the UNFCCC¹.

7. Hong Kong is a service economy without any energy intensive industries. We are a relatively small emitter of GHG² and our

¹ The principle rests on the recognition that the largest share of historical and current global emissions of GHG has originated from Annex I countries and that per capita emissions in developing countries are still relatively low. Developing countries were not the main contributors to the GHG emissions during the industrialisation period that are believed to be causing today's climate change.

² Hong Kong's GHG emissions totalled about 44.8 million tonnes CO₂-equivalent (CO₂-e) in 2005, accounting for about 0.2% of the global GHG emissions. Hong

level of GHG emissions per capita is considerably lower than most of the developed economies³. Our principal source of GHG emissions is power generation, which accounts for over 60% of our total GHG emissions⁴. Taking account of the local situation, we believe the most effective way for Hong Kong to control its GHG emissions in support of the international efforts to combat climate change is to enhance its overall energy efficiency.

8. Alongside some other 20 member economies of the Asia-Pacific Economic Co-operation (APEC), Hong Kong adopted the APEC Leaders' Declaration on Climate Change, Energy Security and Clean Development announced at the APEC Leaders' Meeting held in Sydney in September 2007. The Declaration calls upon APEC economies to achieve a reduction in energy intensity of at least 25% by 2030 (with 2005 as the base year). To underscore our commitment, the Chief Executive has reaffirmed in the 2007 Policy Address that Hong Kong will endeavour to do our best to meet this required reduction in energy intensity. Achieving this goal will avoid emission of approximately 20 million tonnes of GHG every year in 2030.

Engaging the Power Companies – New Scheme of Control

9. The new Scheme of Control Agreements (SCAs) signed between the Administration and each of the two power companies in early January 2008 have put in place provisions to encourage the power companies to implement more environmentally friendly measures, which in turn should contribute positively towards the reduction of GHG emissions.

Kong's carbon intensity, as measured in terms of GHG emissions per unit of GDP, was 27.6 kg per \$HK 1,000 of GDP in 2005 and was one of the lowest amongst developed economies.

³ The level of GHG emissions per capita in Hong Kong has been maintained at around 6.5 tonnes in recent years, which is considerably lower than those recorded in most developed economies such as the United States (about 24 tonnes), Canada (about 24 tonnes), Australia (about 27 tonnes), United Kingdom (about 11 tonnes), European Union (about 9 tonnes), Japan (about 11 tonnes) and Singapore (about 9 tonnes).

⁴ The transport sector in the second largest GHG emission source (16%), to be followed by waste (12.1%), other energy sector (7.2%) and industrial processes (2%).

Renewable Energy

10. To encourage more usage of renewable energy (RE), the power companies will enjoy a higher rate of return (11%) for their investment in RE facilities (as compared with 9.99% for other assets). They will also be offered a bonus in the range of 0.01 to 0.05 percentage point in permitted return, depending on the extent of RE usage in their electricity generation, as an incentive to increase use of RE.

11. Also, grid connection arrangement will be standardised for back up power supply for customers with embedded renewable generation in Hong Kong, subject to technical and reasonable terms. Special cases, such as spill power from embedded renewables and energy-from-waste, will be considered on a case-by-case basis, on reasonable terms. Grid connection/access for RE users/generating facilities using RE will be negotiated between prospective grid users and the respective power company. The Administration will assist where necessary and when requested by either party, including assisting in arriving at mutually agreed access charges.

Energy Efficiency

12. As for energy conservation, we will assess the performance of the power companies based on the number of energy audits they perform for customers and the actual energy saved. A maximum award of 0.02 percentage point in permitted return will be given. Both power companies agreed to set up a loan fund (CLP Power: \$25 million per annum; Hongkong Electric: \$12.5 million per annum) over a five-year period (amounting up to \$125 million and \$62.5 million in total) to provide loans to non-Government customers to implement energy saving initiatives identified in energy audits to promote energy efficiency. They also agreed to set up an education fund (CLP Power: \$5 million per annum; Hongkong Electric: \$2.5 million per annum) for energy efficiency and promotion activities. This fund will be administered by the power companies involving representation from key stakeholders.

Emission Caps

13. In deciding on the types of air emissions to be placed under control and their respective emission caps, the availability of mature and practicable emission reduction technology is an important consideration. The principal source of GHG emissions in Hong Kong is power generation, which mainly stem from the burning of fossil fuels. In

Hong Kong, over 50% of the electricity is generated from coal burning. At present, there is no mature and commercially viable technology in the world that could reduce, capture and store the greenhouse gases discharged from the burning of fossil fuels. Therefore, GHG emissions from power generation can only be substantially reduced by changing the fuel mix, e.g. substantial reduction in coal burning, increase in the use of natural gas or switching to nuclear energy. However, changing the fuel mix for power generation requires careful consideration of a number of important and complicated issues such as stability in power supply and electricity tariff.

Territory-wide Greening

14. The Administration has been actively promoting territory-wide greening and will continue its efforts on this front. Despite Hong Kong's small size and dense population, we have designated 23 Country Parks and 17 Special Areas (11 of which are within Country Parks), with a total area of about 41 600 hectares. About 43% of Hong Kong's land area is under statutory protection. These protected areas have not only contributed to the maintenance of a rich biodiversity, but also help enhance the carbon dioxide absorption capacity in Hong Kong. To step up our existing conservation efforts, we have initiated statutory procedures to designate another country park at North Lantau.

15. The Administration also compiles a territory-wide greening programme each year to maximise plantation opportunities. In the past five years, a total of 12 million trees were planted. Another 1.2 million trees will be planted in 2008. We will also push ahead with the greening work in densely populated urban areas through various Greening Master Plans in collaboration with District Councils.

16. Apart from planting trees on flat land or slopes, further plantation opportunities are being identified through new techniques. For instance, we aim to implement green roof projects for new Government buildings as far as practicable. About 60 projects with such green features have been completed since 2001. Another 40 additional projects are under construction or planning. These include schools, office buildings, hospitals, community facilities and Government quarters. Green roofs will be retrofitted at 20 existing Government buildings in 2007/08. The Housing Department has also embarked upon pilot schemes to install vertical green panels at lift towers and external walls in

public housing estates (e.g. Eastern Harbour Crossing Sites Phases 3 and 4).

17. In addition to actively implementing greening in Government projects, the Administration also seeks to promote this initiative in the private sector. The Buildings Department has commissioned a consultancy study on sustainable building design, which aims to develop relevant guidelines and introduce more green features in buildings.

Mandatory Implementation of the Building Energy Codes

18. On 28 December 2007, the Administration launched a three-month public consultation on a proposal to introduce mandatory implementation of the Building Energy Codes for certain new and existing buildings, with a view to improving energy efficiency of buildings, alleviating global warming and combating air pollution. It is estimated that for new buildings, implementation of the proposed mandatory scheme will result in energy saving of 2.8 billion kWh in the first decade, which contributes to a reduction in carbon dioxide emission of 1.96 million tonnes. There would be additional savings arising from improved energy efficiency in existing buildings. Details of the proposal are given in LC Paper No. CB(1) 504/07-08(01).

Implementation of Mandatory Energy Efficiency Labelling Scheme

19. Significant energy savings could be achieved by the use of energy-efficient electrical appliances, which help reduce the emissions of GHG and other air pollutants. To encourage their wider use, the Administration has launched a Mandatory Energy Efficiency Labelling Scheme (EELS). The Energy Efficiency (Labelling of Products) Bill (the Bill) was introduced into the Legislative Council on 18 April 2007. The initial phase of the mandatory EELS will cover three types of products, namely, room air conditioners, refrigerating appliances and compact fluorescent lamps. The Bills Committee of the Legislative Council is now scrutinizing the Bill. Implementation of the first phase of the mandatory EELS is expected to bring about an annual electricity saving of 150 GWh and a reduction of carbon dioxide emissions of 105,000 tonnes.

20. We will commence implementation of the first phase of the mandatory EELS once the legislative process is completed, and plan for the coverage of the second phase with a view to gradually applying the mandatory requirement to more products.

Use of GHG Emitted from Landfill Sites

21. The Administration will continue to work with the landfill operators, power companies and Towngas to maximize utilization of landfill gas as fuel substitutes. Landfill gas is at present recovered at three operating and closed restored landfills, which is either utilized as alternative energy sources on-site or offsite, or flared to minimize their global warming and hazard potential. Landfill gas extracted from the closed Shuen Wan landfill has been conveyed to Tai Po towngas production plant for offsite utilisation since 1999. Starting mid-2007, treated landfill gas from the operating North East New Territories (NENT) landfill is also conveyed via a 19-km pipeline to the towngas production plant at Tai Po to partially replace naphtha. The project is one of the largest off-site landfill gas utilization projects in the world.

Publicity and Education on Energy Conservation

22. The Administration is committed to encouraging the public to save energy through a wide range of promotional and education activities. Our initiative to promote the setting of room temperature of air-conditioned premises at 25.5°C during summer months, and the recent “I love Hong Kong I love Green” campaign are some of the examples of our efforts in engaging the public to promote lifestyle and behaviour changes. We are also working on launching a website on climate change to raise public awareness and enhance the community’s understanding of climate change.

Developing Renewable Energy (RE) and Setting RE Sources Targets

23. Having regard to the outcome of the public engagement process undertaken by the Council for Sustainable Development, the Administration has set a target of having 1-2% of Hong Kong’s total electricity supply to be met by RE by 2012 in the First Sustainable Development Strategy for Hong Kong promulgated in May 2005. The potential for large-scale development of RE in Hong Kong is subject to

topographical and environmental constraints. The Administration therefore considers that the 1-2% target is a realistic goal at the present stage. We will review the target having regard to technological developments and other factors.

24. Under the new SCAs, incentives are provided to the power companies to encourage more usage of renewable energy (RE). Details are set out in paragraphs 10 - 11 above. In addition, the two power companies have already launched pilot projects to develop commercial-scale wind turbines for electricity generation. They are also conducting studies on building off-shore commercial wind farms in Hong Kong waters.

25. To assist the public to better understand the technical issues and application procedures related to grid connection of RE power systems, EMSD published a set of revised “Technical Guidelines on Grid Connection of Renewable Energy Power Systems” in December 2007. The applicable capacity limit has been extended from 200kW to 1MW.

GHG Emission Calculation

26. The Administration will take the lead in conducting a carbon audit on the new Central Government Complex at Tamar. We are drawing up the necessary guidelines for conducting building-based carbon audit with reference to internationally recognised approaches. We will also encourage participation by private developers to undertake carbon audits for their buildings with a view to reducing GHG emissions from these buildings.

‘Dress Casual in Summer’ Campaign

27. The Administration launched a “dress down in summer” campaign in 2006. Relevant guidelines on the dress codes for civil servants have been drawn up. We will continue to encourage the private sector to practice the same.

Environment Bureau
January 2008

Motion on “Responding to the Problem of Climate Change”
Carried by LegCo on 28 November 2007

“That, as climate abnormalities frequently occur in Hong Kong in recent years and climate change has also become an important issue in sustainable development worldwide, the United Nations will convene a summit on climate change in Bali in December this year, and many countries and places are working together to formulate effective measures to reduce greenhouse gas emissions; in this connection, this Council urges the Government to lead Hong Kong in shouldering its due responsibilities as an international city and take proactive actions to respond to the crisis of climate warming, which include:

- (a) strengthening cooperation with the Mainland, particularly Guangdong Province, to work together to respond to the problem of climate warming;
- (b) setting up an inter-departmental working group on climate change under the leadership of the Chief Executive to demonstrate the Government’s determination to respond to climate change, as well as to more effectively coordinate the efforts of various departments in formulating emissions reduction and adaptation policies;
- (c) stipulating concrete targets in the reduction of total greenhouse gas emissions;
- (d) including the limits on the amount of greenhouse gas emissions in the terms of the new Scheme of Control Agreement with the two power companies;
- (e) proactively promoting territory-wide greening work, collaborating with District Councils and the private sector in expediting the development of Greening Master Plans, and actively adopting the concepts of vertical greening and rooftop greening etc. to facilitate three-dimensional development of greened areas and make available additional space for greening;
- (f) legislating for mandatory implementation of the Building Energy Codes;

- (g) expediting full implementation of the Mandatory Energy Efficiency Labelling Scheme;
- (h) optimizing the use of greenhouse gas emitted from landfill sites;
- (i) enhancing publicity and education on energy conservation so that members of the public will start with themselves to reduce greenhouse gas emissions; and
- (j) proactively developing renewable energy for electricity generation, including providing financial incentives and technical support to facilitate grid connection of small-scale renewable energy power systems;

and legislating for mandatory implementation of the Building Energy Codes only after extensive consultation; in addition, the Government should also set targets for local electricity supply to be provided from renewable energy sources, including achieving 5% of total electricity supply to local households from such sources by 2020; establish mandatory minimum energy efficiency standards for products and consider following the example of Australia to mandate the phasing out of tungsten light bulbs in the next five to 10 years; take proactive steps to compensate carbon emissions, including calculating the amount of carbon emissions generated from energy used within government departments in their daily activities and making a corresponding amount of donations for tree planting, with a view to meeting the target of ‘zero carbon emissions’ in the long run; include carbon dioxide emission project in the emission trading pilot scheme in the Pearl River Delta region; and launch a ‘dress casual in summer’ campaign within government departments.”

Inter-departmental Working Group on Climate Change

Terms of Reference

Having regard to the obligations of the Hong Kong Special Administrative Region (HKSAR) under the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol, the Terms of Reference of the Inter-departmental Working Group on Climate Change are –

- (i) to co-ordinate, in close consultation with Government bureaux and departments and other bodies concerned, existing and planned activities to fulfill the HKSAR's obligations under UNFCCC;
- (ii) to monitor and co-ordinate efforts of relevant Government bureaux and departments in formulating and carrying out measures to control greenhouse gas emissions and facilitate adequate adaptation to climate change;
- (iii) to monitor closely the latest international developments on climate change and make recommendations for appropriate action taking account of these developments; and
- (iv) to formulate and co-ordinate action to promote public awareness and understanding of climate change and its likely effects.

Chairman

Deputy Director (Environment)3, EPD

Membership

Representatives at directorate level from:

Environment Bureau (Energy Division)

Development Bureau (Works Branch)

Transport and Housing Bureau (Transport Branch)

Food and Health Bureau

Education Bureau

Economic Analysis and Business Facilitation Unit, Financial Secretary's Office

Environmental Protection Department

Hong Kong Observatory

Electrical and Mechanical Services Department

Housing Department

Planning Department

Agriculture, Fisheries and Conservation Department

Architectural Services Department

Buildings Department

Civil Engineering and Development Department

Drainage Services Department

Food and Environmental Hygiene Department

Health Department

Home Affairs Department

Leisure and Cultural Services Department

Transport Department

Water Supplies Department