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Panel on Environmental Affairs

Meeting on 15 July 2009

Background brief on mandatory implementation of Building Energy Codes

Purpose

This paper sets out the progress of the proposed mandatory implementation of the Building Energy Codes (BEC), and gives a brief account of the views and concerns expressed by the Panel on Environmental Affairs (the Panel).

Introduction

2. Alongside 20 other Asia-Pacific Economic Cooperation (APEC) economies, Hong Kong has subscribed to the "Sydney Declaration on Climate Change" in September 2007. In gist, all APEC economies would work towards achieving an aspirational goal to reduce energy intensity in the Asia-Pacific region by at least 25% by 2030 from the 2005 level. As Hong Kong is a commercial city with limited industrial operations, it has greater potential to improve energy efficiency and reduce greenhouse gas emissions by promoting energy efficiency in buildings.

3. Since 1998, the Electrical and Mechanical Services Department (EMSD) has issued five sets of BECs, covering lighting, air-conditioning, electrical as well as lift and escalator installations, which stipulate the minimum energy performance standards of these installations. It has also launched the voluntary Hong Kong Energy Efficiency Registration Scheme for Buildings (the Scheme) with the aim to promote the application of BEC. Designers, architects, building developers, property management agencies etc can submit relevant details of their building for assessment of compliance with BEC. The Scheme requires the certification of such information by a Registered Professional Engineer of discipline under the Engineers Registration Ordinance (Cap. 409). A registration certificate will be issued to a building that successfully meets the individual BEC standards. Up to April 2009, 2 531 registration certificates have been issued to 974 building venues involving 2 521 installations.

4. As voluntary compliance with BECs does not appear to be forthcoming, the Administration considers it necessary to pursue mandatory implementation of BECs to complement market driven changes.

Mandatory implementation of BEC

5. On 28 December 2007, the Government launched a three-month public consultation on a proposal to introduce mandatory implementation of BEC for certain new and existing buildings, with an aim of improving energy efficiency of buildings, alleviating global warming, and combating air pollution. Under the proposal, new commercial buildings and the communal areas of new residential and industrial buildings in both the private and public sectors as well as major retro-fitting works in existing buildings should comply with BEC; energy audits will be required for certain buildings once every 10 years; and buildings which have exceeded the minimum building energy efficiency standards by a prescribed percentage will be recognized by an energy mark through a voluntary administrative scheme.

6. It is estimated that for new buildings, the implementation of the proposals will result in energy savings of 2.8 billion kilowatt hours and reduction of 1.96 million tones of carbon dioxide emissions. An additional capital outlay in the region of 3% to 5% of the building construction cost may have to be incurred in return for about 10% to 15% annual saving in energy bills. On average, the payback period for the additional investment is six years.

Deliberation by the Panel

7. The proposals set out in the consultation document were discussed by the Panel at its meeting on 28 January 2008, during which deputations were invited to express their views. Members noted that while there was general support for the proposed mandatory implementation of BECs, there were views that all new buildings should comply with BECs without exemptions, and that government buildings and public organizations should take the lead in complying with BECs. Consideration should be given to putting in place an assistance scheme to provide financial support to building owners to facilitate compliance. Energy audits should be conducted every five years rather than 10 years as proposed in order to keep abreast with the latest technological development around the world.

8. On 26 May 2008, the Panel received a briefing on the results of the consultation exercise. Members noted that based on the majority of views received, the Administration had revised the proposal as follow –

- (a) the mandatory implementation of BEC should be pursued with a view to improving energy efficiency and conservation in buildings;
- (b) new commercial buildings and communal areas of residential and industrial buildings should be included in the proposed mandatory

scheme. Developers should be required to submit self-declarations to the Director of Electrical and Mechanical Services Department (DEMS). DEMS would issue Certificates of Compliance upon receipt of the required information and document. Building owners would be required to apply for renewal of the Certificates once every 10 years;

- (c) government buildings and buildings in the public sector should also be included in the proposed mandatory scheme. Also, consideration should be given to the inclusion of other buildings such as major educational buildings;
- (d) existing buildings should be required to improve energy efficiency whenever there are major retrofitting works. Existing owners should be required to arrange certification of the building services installations. Consideration should be given to allow suitable transitional arrangements for existing buildings to comply;
- (e) the carrying out of energy audits once every 10 years for commercial buildings and the display of the audit results should be made mandatory. Proper phasing should be considered for the carrying out of first energy audits for existing building to smooth out the implementation;
- (f) the self-declarations and energy audits should be certified by recognized professionals. DEMS would set up a register of recognized professionals under the proposed legislation;
- (g) DEMS would issue codes of practices on the energy efficiency standards and requirements and on energy audits;
- (h) the recently updated BEC for the Scheme should be adopted as the current energy efficiency standards and requirements. There should be a regular update of the energy efficiency standards and requirements;
- (i) there should be a penalty system with clear responsibility at different stages of the building development, and with sufficient deterrent effect;
- (j) a tiered arrangement should be adopted whereby the BEC issued by DEMS should be the minimum standards applicable to all buildings covered by the proposed legislation, and a higher set of standards should be introduced to give recognition, on a voluntary basis, to buildings that can achieve better energy efficiency so as to encourage superior environmental performance; and
- (k) public education and partnership on energy saving in buildings should be strengthened.

The Administration aimed to introduce the legislation into the Legislature in 2009. The summary of views received during the consultation period is set out in Annex B

to LC Paper No. CB(1) 1595/07-09(04) which is hyperlinked below for ease of reference.

9. The Panel generally supported the proposed mandatory implementation of BECs. Some members hoped that the mandatory scheme could be extended to cover more building developments to achieve greater energy savings. More efforts should be made to promote energy audits, including the use of the Environment and Conservation Fund to provide the necessary funding support. Consideration should be given to introducing design standards, such as specifications on the thickness of walls, choice of construction materials, and facing of buildings etc, that would improve energy efficiency performance of new buildings. Concern was also raised on the energy efficiency standards being adopted for the lighting systems of commercial buildings because some buildings had kept their lights on overnight, particularly those advertising signboards on the outer walls, the excessive glare of which was a constant source of complaint from affected residents.

Latest development

10. The Administration intends to brief the Panel on the proposed legislative framework of mandatory implementation of BECs on 15 July 2009.

Relevant papers

Consultation document provided by the Administration for the Panel meeting on 28 January 2008

<http://www.legco.gov.hk/yr07-08/english/panels/ea/papers/ea0128cb1-504-1-e.pdf>

Minutes of the Panel meeting on 28 January 2008

<http://www.legco.gov.hk/yr07-08/english/panels/ea/minutes/ea080128.pdf>

Information paper provided by the Administration for the Panel meeting on 26 May 2008

<http://www.legco.gov.hk/yr07-08/english/panels/ea/papers/ea0526cb1-1595-4-e.pdf>

Follow-up paper provided by the Administration for the Panel meeting on 26 May 2008

<http://www.legco.gov.hk/yr07-08/english/panels/ea/papers/ea0526cb1-2316-1-e.pdf>

Minutes of the Panel meeting on 26 May 2008

<http://www.legco.gov.hk/yr07-08/english/panels/ea/minutes/ea080526.pdf>