

# HONG KONG, CHINA

## 1. GOALS FOR EFFICIENCY IMPROVEMENT

### 1.1. Overall Energy Efficiency Improvement Goals

Reduction of energy intensity by 45% by 2035 from 2005 levels

### 1.2. Sectoral Energy Efficiency Improvement Goals

Not applicable

### 1.3. Action Plans for Promoting Energy Efficiency

With the adoption of the Honolulu Declaration, the Hong Kong, China (HKC) Government continue to step up efforts in energy efficiency and conservation monitoring and reporting by means of an end-use energy database<sup>1</sup> ever since the Sydney Declaration. Action plans include:

- The promotion of building energy efficiency through legislation for mandatory implementation of Buildings Energy Codes, and the provision of subsidies under Building Energy Efficiency Funding Schemes
- The implementation of the first phase and second phase of the Mandatory Energy Efficiency Labelling Scheme
- The provision of incentives in the post 2008 Scheme of Control Agreements with power companies to encourage investment in renewable energy facilities and enhance energy efficiency
- To enhance utilisation of landfill gas for town gas production
- To implement a district cooling system at the Kai Tak Development to supply chilled water to buildings in the new development area for centralised air-conditioning
- To promote environmental protection and energy conservation in government buildings through setting targets in various environmental aspects of new government buildings and through identifying demonstration projects
- To promote environmental protection and energy conservation in government buildings through setting targets in various environmental aspects of new government buildings and through identifying demonstration projects to promote the replacement of incandescent light bulbs by more energy-efficient lighting products through various means, including public consultation on the restriction of sale of energy-inefficient incandescent light bulbs.

### 1.4. Institutional Structure

#### a) Name of organisation

Energy Efficiency Office (EEO) of Electrical and Mechanical Services Department (EMSD) under the directive of the Environment Bureau (ENB) which is the energy policy maker

#### b) Status of organisation

ENB as the policy maker and EEO of EMSD as the regulator and implementer

#### c) Roles and responsibilities

The government (ENB and EEO/EMSD) is responsible for promoting energy efficiency both within the government and in the community as a whole. The government works with professional bodies, tertiary institutes, related industries and the general public to promote energy efficiency in the community through voluntary and mandatory programs.

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<sup>1</sup>HKEEUD (2011).

**d) Covered sectors**

Public and private sectors

**e) Established date**

EEO of EMSD was established in 1994

**f) Number of staff members**

There are 58 employees of EEO

**1.5. Information Dissemination, Awareness-raising and Capacity-building****a) Information collection and dissemination**

For major energy efficiency policies, public consultation and business impact assessments may be conducted. Information is mainly disseminated through the media and via press releases and websites.

**b) Awareness-raising**

HKC organise and/or participate in various exhibitions, seminars, outreach programme to schools, guide tours to Exhibition Centre and workshops to promote energy efficiency and conservation within various sectors. There are also websites and Energy Efficiency Newsletter to promote energy efficiency and renewable energy.

Technical information related to energy efficient products is promoted and disseminated through publication of information leaflets and technical guidelines, and posting the information for the public via dedicated websites—HK EE Net (<http://ee.emsd.gov.hk>), HK RE Net (<http://re.emsd.gov.hk>) and HK GBT Net (<http://gbtech.emsd.gov>)—and media programs.

HKC also launch publicity programs and campaigns to promote awareness of energy efficiency and conservation in particular regarding specific measures (e.g., Energy Efficiency Labelling Scheme, Buildings Energy Efficiency Funding Schemes, etc.) and ‘Liberal Studies education kit’ for New Senior Secondary Curriculum to promote energy efficiency and conservation among the students.

**c) Capacity-building**

Capacity-building is achieved by organising strategic and specific briefings, presentations and workshops for industry and the general public. Professional bodies and educational institutions are also involved in sharing experience and providing training to build up the necessary capacity in the concerned sectoral areas.

**1.6. Research and Development in Energy Efficiency and Conservation**

In order to evaluate and review the application of new energy efficiency and conservation technologies, the HKC government promotes applied research and development activities including energy efficiency projects through university research grants and dedicated technology funds. Examples of projects include:

- Installation of Energy Efficiency and Conservation Technologies in Government Facilities for Application Studies
- Energy efficiency demonstration projects
- Projects funded by the Innovation and Technology Fund, Environment and Conservation Fund and General Research Fund.

## 2. MEASURES FOR ENERGY EFFICIENCY IMPROVEMENTS

### 2.1. Government Laws, Decrees, Acts:

#### a) Name

- 1) Energy Efficiency (Labelling of Products) Ordinance (Chapter 598)
- 2) Building (Energy Efficiency) Regulation (Chapter 123M)
- 3) Buildings Energy Efficiency Ordinance ( Chapter 610)

#### b) Purpose

- 1) To facilitate the choice of energy efficient appliances and raise public awareness on energy saving in electrical appliances
- 2) To regulate the design and construction of external walls and roofs of buildings in order to achieve an appropriate overall thermal transfer value such that the energy consumption of commercial buildings and hotels can be controlled.
- 3) To regulate the building services installations including lighting, electrical, air-conditioning and lift & escalator installations of the prescribed buildings to comply with the specified minimum energy efficiency standards and requirements

#### c) Applicable sectors

- 1) All sectors
- 2) Commercial buildings and hotels.
- 3) 13 categories of public and private prescribed buildings including commercial buildings, hotels and guesthouses, residential buildings (common area only), industrial buildings (common area only), composite buildings (non-residential and non-industrial portion), composite buildings (common area of residential or industrial portion), educational buildings, community buildings, municipal buildings, hospitals and clinics, government buildings, airport passenger terminal building, railway stations etc.

#### d) Outline

- 1) The Energy Efficiency (Labelling of Products) Ordinance, enacted on 9 May 2008, provides the basis for implementation of the Mandatory Energy Efficiency Labelling Scheme. The scheme requires that the energy label be shown on prescribed products to inform consumers of the products' energy performance. The first phase, covering room air conditioners, refrigerating appliances and compact fluorescent lamps, has been in full implementation since 9 November 2009. The second phase extends the coverage to washing machines and dehumidifiers, and has also been fully implemented from 19 September 2011.
- 2) The Building (Energy Efficiency) Regulation, enacted in 1995, regulates the design and construction of external walls and roofs of buildings to have a suitable overall thermal transfer value such that the energy consumption of commercial buildings and hotels can be controlled and thus the emission of greenhouse gases from power generation can be reduced.
- 3) The new Buildings Energy Efficiency Ordinance for mandatory implementation of the Building Energy Code (BEC) and energy audit, enacted in December 2010, will come into full operation on 21 September 2012. The core parts of the Ordinance are now within the grace period in order to allow various stakeholders and public having ample time to be adapted to and familiarized with the requirements of the new legislation. The Ordinance will require compliance with the BEC in design of new construction of the prescribed types of building and in major retrofitting works of the prescribed buildings for the 4 key types of building services installations (namely

lighting, air-conditioning, electrical and lift & escalator installations), as well as the implementation of energy audit in commercial buildings. For new buildings, it is estimated that the new legislation will result in energy saving of 2.8 billion kWh, or reduce carbon dioxide emission of 1.96 million tonnes, in the first decade. Further energy saving will be resulted from existing buildings by requiring compliance with the BEC when major retrofitting works and energy audit are carried out in these buildings.

**e) Financial resources and budget allocation**

No information available

**f) Expected results**

- 1) Products with lower energy efficiency to be driven out by market forces
- 2) Commercial buildings and hotels achieve better energy performance in overall thermal transfer requirements.

## 2.2. Regulatory Measures

See 2.1.

## 2.3. Voluntary Measures

**a) Name**

- 1) Voluntary Energy Efficiency Labelling Scheme
- 2) Scheme for Wider Use of Fresh Water in Evaporating Cooling Towers for Energy-efficient Air Conditioning Systems
- 3) HK Energy Efficiency Registration Scheme for Buildings (HKEERSB)<sup>2</sup>.

**b) Purpose**

See 2.3. (d)

**c) Applicable sectors**

All sectors

**d) Outline**

- 1) EMSD operates a voluntary Energy Efficiency Labelling Scheme for appliances and equipment used at home and at the office as well as for vehicles to make it easier for the public to choose energy efficient products. The scheme aims to save energy by informing potential customers of a product's energy performance, which enables buyers to take these factors into consideration when making their purchasing decision. The scheme now covers 19 types of household appliances and office equipment. Eleven of these types are electrical appliances including refrigerators (voluntary scheme), washing machines (voluntary scheme), non-integrated type compact fluorescent lamps, dehumidifiers (voluntary scheme), electric clothes dryers, room coolers (voluntary scheme), electric storage water heaters, television sets, electric rice-cookers, electronic ballasts and LED lamps. The seven types of office equipment include photocopiers, fax machines, multifunction devices, laser printers, LCD monitors, computers and hot and cold bottled water dispensers. There is one type of gas appliance (domestic gas instantaneous water heaters). The scheme has also been extended to cover petrol passenger cars. With the full implementation of the two phases of the Energy Efficiency (Labelling of Products) Ordinance on 9 November 2009 and 19 September 2011, the Voluntary Energy Efficiency Labelling Scheme for room coolers (voluntary scheme), household refrigeration appliances (voluntary

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<sup>2</sup>[www.emsd.gov.hk/emsd/eng/pee/eersb.shtml](http://www.emsd.gov.hk/emsd/eng/pee/eersb.shtml).

scheme), washing machines (voluntary scheme) and dehumidifiers (voluntary scheme) will cover only those products not regulated under the ordinance. Details can be found at: [www.emsd.gov.hk/emsd/eng/pee/eels\\_vlntry.shtml](http://www.emsd.gov.hk/emsd/eng/pee/eels_vlntry.shtml).

- 2) The 'Pilot Scheme for Wider Use of Fresh Water in Evaporative Cooling Towers for Energy-efficient Air Conditioning Systems' was launched in 2000 to promote the wider use of energy-efficient water-cooled air conditioning (WACS) and facilitate the territory-wide implementation of WACS.
- 3) Over the years, the number of designated areas of the scheme for fresh water cooling towers has been expanded to 107. In December 2011, the scheme covered about 75% of the non-residential floor area of HKC. The Scheme has been operating on a standing status from June 2008. A review was completed in September 2010 to streamline application procedures and requirements of the Scheme to facilitate participation. The Scheme was re-titled as 'Fresh Water Cooling Towers Scheme for Air Conditioning Systems' in November 2010 for simplicity.
- 4) The HKEERSB was launched in October 1998 to promote the application of the Building Energy Codes (BEC). The BEC covers lighting, air conditioning, electrical, lift and escalator installations, and stipulates the minimum energy performance standards of these installations. Adoption of the BECs is now at the discretion of the building designers or owners. Under the Scheme, if the designer or owner of a building submits application to EMSD, a registration certificate will be issued to the building that successfully meets the individual BEC standards. As at December 2011, 3000 registration certificates were issued to 1312 building venues involving 3156 installations.

**e) Financial resources and budget allocation**

No information available

**f) Expected results**

- 1) To enable consumers to make a better choice when purchasing energy efficient appliances and reduce energy consumption
- 2) To save energy consumption in air conditioning systems in non-residential buildings
- 3) To enhance building energy efficiency.

**2.4. Financial Measures Taken by the Government**

**2.4.1. Tax Scheme**

For energy saving and conservation in the building sector, the Financial Secretary announced in the 2008-09 Budget Speech that the depreciation period for building service installations registered under the HKEERSB and renewable energy installations would be reduced from 25 years to 5 years.

**2.4.2. Low-Interest Loans**

**a) Name**

Building Safety Loan Scheme

**b) Purpose**

To provide loans to individual owners of all types of private buildings to carry out maintenance work for improving energy efficiency among other things

**c) Applicable sectors**

Industrial, residential and commercial buildings

**d) Financial resources and budget allocation**

No information available

**e) Expected results**

Energy saving and promoting energy efficiency

**2.4.3. Subsidies and Budgetary Measures****a) Name**

Buildings Energy Efficiency Funding Schemes (BEEFS)<sup>3</sup> and budgetary allocation for energy efficiency improvement work at government facilities and venues

**b) Purpose**

For energy saving and conservation and to reduce CO<sub>2</sub> emissions

**c) Applicable sectors**

Residential, commercial, industrial and government

**d) Outline**

BEEFS were launched in April 2009 to subsidise owners of residential, commercial and industrial buildings to conduct energy-cum-carbon audits and energy efficiency projects in private buildings. Resources have been allocated in the 2009-10 budgets to carry out minor work for improving the energy efficiency of government buildings and public facilities.

**e) Financial resources and budget allocation**

BEEFS—HKD 450 million

Energy improvement projects in government buildings—HKD 130 million

**f) Expected results**

To promote energy saving and conservation in buildings

**2.4.4. Other Incentives**

No information available

**2.5. Energy Pricing**

No information available

**2.6. Other Efforts for Energy Efficiency Improvements****2.6.1. Cooperation with Non-Government Organisations**

The government cooperates with the professional sector and non-government organisations on the promotion of energy efficiency and conservation.

**2.6.2. Cooperation through Bilateral, Regional and Multilateral Schemes**

To maintain close collaboration with the Chinese government to harmonise the adoption of appropriate energy efficiency standards and approaches.

**2.6.3. Other Cooperation/Efforts for Energy Efficiency Improvements**

There are some efforts for energy efficiency improvements:

- 1) To extend the coverage of the energy efficient public transport system, in particular the mass transit railway network and high-speed train system
- 2) To implement measures to promote wider adoption of electric vehicles

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<sup>3</sup>Energy Wits, Issue No. 15 (May 2009), p. 2.

- 3) For the government to lead by example in implementing energy efficiency demonstration projects to showcase energy efficient designs and emerging technologies, and to adopt advanced energy saving products such as LED traffic lights
- 4) To mandate that government capital works projects and minor works projects incorporate various energy efficiency features into the projects
- 5) The Hong Kong Green Building Council (HKGBC), which was established in November 2009 to advance green building initiatives in HKC, is a professional organisation driving the promotion and creation of green, energy efficient buildings and standards throughout HKC and seeking to engage the community, industry and government in creating a more sustainable environment.

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## REFERENCES

HKEEUD (2010), *Hong Kong Energy End-use Data 2011*, issued by the Energy Efficiency Office of Electrical and Mechanical Services Department, [www.emsd.gov.hk/emsd/e\\_download/pee/HKEEUDB2011.pdf](http://www.emsd.gov.hk/emsd/e_download/pee/HKEEUDB2011.pdf).

HKEERSB, *Hong Kong Energy Efficiency Registration Scheme for Buildings*, issued by the Energy Efficiency Office of Electrical and Mechanical Services Department, [www.emsd.gov.hk/emsd/e\\_download/pee/hkeersb2007.pdf](http://www.emsd.gov.hk/emsd/e_download/pee/hkeersb2007.pdf).

Energy Wits, Issue No. 15 (September 2010), *Buildings Energy Efficiency Funding Schemes*, issued by Energy Efficiency Office of Electrical and Mechanical Services Department, [www.emsd.gov.hk/emsd/e\\_download/pee/Energy\\_Wits\\_15.pdf](http://www.emsd.gov.hk/emsd/e_download/pee/Energy_Wits_15.pdf).