立法會
Legislative Council

LC Paper No. CB(1)47/2025(06)

Ref.: CB1/PL/EA

Panel on Environmental Affairs

Meeting on 20 January 2025

Background brief on Buildings Energy Efficiency Ordinance

Purpose

This paper provides background information on the Buildings Energy Efficiency Ordinance (Cap. 610) ("the Ordinance"). It also gives a brief account of the views and concerns expressed by Members on the subject at the meetings of relevant committees in recent years

Background

Buildings Energy Efficiency Ordinance

2. Hong Kong's buildings account for about 90% of the city's electricity use. Over 50% of carbon emissions are attributable to generating electricity for buildings. In 1998, the Electrical and Mechanical Services Department ("EMSD") launched the voluntary Hong Kong Energy Efficiency Registration Scheme for Buildings to promote the application of the Code of Practice for Energy Efficiency of Building Services Installation ("Building Energy Code"). The Ordinance subsequently came into full operation on 21 September 2012. The relevant requirements are summarized as follows:

(a) the developers or building owners of newly constructed buildings should ensure that the four key types of building services installation therein, including air-conditioning installation, lighting installation, electrical installation and lift and escalator installation, comply with the design standards of the Building Energy Code;

(b) the responsible persons such as owners, tenants or occupiers in buildings should ensure that the aforesaid four key types of building services installation therein comply with the design standards of the Building Energy Code when undergoing "major retrofitting works"; and

(c) the owners of commercial buildings, including the commercial portions of composite buildings like shopping malls under residential storeys, should carry out energy audit for the four key types of building services installation therein in accordance with the Code of Practice for Building Energy Audit ("Energy Audit Code") once every ten years.

3. The 13 types of prescribed buildings currently covered by the Ordinance are set out in **Appendix 1**. To continue to encourage and motivate building owners in Hong Kong to further enhance energy efficiency, the Hong Kong Energy Efficiency Registration Scheme for Buildings serves to recognize buildings that outperform the statutory requirements.

Hong Kong's Climate Action Plan 2050

4. The Administration announced Hong Kong's Climate Action Plan 2050 in October 2021, focusing on the three major sources of greenhouse gas emissions including electricity generation, transport and waste treatment, and outlining four major decarbonization strategies, namely "net-zero electricity generation", "energy saving and green buildings", "green transport" and "waste reduction", to lead Hong Kong towards carbon neutrality. On "energy saving and green buildings", the Administration's goal is to reduce the electricity consumption of commercial buildings by 30% to 40% from the 2015 level and of residential buildings by 20% to 30% by 2050, and to achieve half of the above target by 2035. To this end, the Government has been striving to enhance energy efficiency of buildings through a multipronged approach which includes:

(a) planning to amend the Ordinance to improve energy efficiency of building services installations in buildings;

(b) continuing to expand the coverage of the Mandatory Energy Efficiency Labelling Scheme and upgrade the grading standards of products under the Scheme to encourage suppliers to introduce more energy-efficient household electrical appliances and at the same time inform consumers of their energy efficiency performance, so as to promote energy conservation; and

(c) taking forward the implementation of the highly energy-efficient District Cooling System projects to supply chilled water for air-conditioning to non-domestic buildings in the New Development Areas.

The Chief Executive's 2023 Policy Address

5. To further enhance energy efficiency of buildings, the Chief Executive's 2023 Policy Address put forward the proposal of amending the Ordinance, including:

(a) extending the scope of regulation to more types of buildings and requiring more types of buildings to conduct regular energy audits;

(b) mandating the disclosure of information in the energy audit reports to allow the public to look up the energy performance of relevant buildings; and

(c) shortening the interval of energy audit.

The Administration conducted a two-month public consultation on the above amendments from 15 November 2023 to 15 January 2024.

Members' views and concerns

6. Issues relating to energy efficiency of buildings were brought up at the meetings of the Panel on Environmental Affairs, and during examination of the Government's Estimates of Expenditure. Members' views and concerns are summarized in the ensuing paragraphs.

Energy Efficiency Registration Scheme for Buildings

7. Members enquired about the Administration's **specific measures** in place **to encourage more existing and new buildings to participate in the voluntary Energy Efficiency Registration Scheme for Buildings**, in order to **speed up the progress of energy conservation and emission reduction in Hong Kong**.

8. The Administration advised that:

(a) to speed up the progress of energy conservation and emission reduction in Hong Kong, EMSD reviewed the Building Energy Code and the Energy Audit Code in consultation with the trade once every

three years to continuously enhance building energy efficiency standards. The 2021 edition of the Building Energy Code gazetted by the Administration on 31 December 2021 uplifted the energy efficiency standards, with an improvement of more than 15% as compared with the 2015 edition. By 2035, the estimated annual energy saving from buildings in Hong Kong was around 4.7 to 5.3 billion kilowatt hours ("kWh") (compared with 2015), which would help achieve the target of carbon neutrality before 2050;

(b) to continue to encourage and drive the further enhancement of building energy efficiency, the Energy Efficiency Registration Scheme for Buildings served to certify buildings where energy performance exceeded statutory standards and which had obtained certification from relevant environmental protection institutions (such as the BEAM Plus certification of the Hong Kong Green Building Council);

(c) starting from the year of assessment 2008-2009, for buildings certified by the Energy Efficiency Registration Scheme, tax deduction for the capital expenditure incurred on the procurement of relevant eligible environmental protection installations was provided over a period of five years; and starting from the year of assessment 2018-2019, the arrangement had been enhanced so that the tax deduction for such capital expenditure could be claimed in full in the first year; and

(d) EMSD continued to review and expand the coverage of the Energy Efficiency Registration Scheme for Buildings to encourage more owners of existing and new buildings to participate in the Registration Scheme. For example, EMSD included two new green building assessment tools (i.e. BEAM Plus New Data Centres and BEAM Plus Existing Data Centres) as certification criteria of the Registration Scheme in September 2021. EMSD would keep promoting the Energy Efficiency Registration Scheme for Buildings through various publicity activities related to energy efficiency and energy conservation.

Energy efficiency of government buildings and infrastructure

Measures for and progress of improving energy performance

9. Members were concerned about the Administration's **progress of promoting energy efficiency and conservation for government buildings and**

infrastructure and the development of renewable energy. Members also enquired whether the Government had **established uniform standards** for the relevant work to ensure that various government departments were heading towards the same goal, and whether it would **set a more aggressive goal**.

10. The Administration advised that:

(a) the Chief Executive's 2022 Policy Address stated that the Government's goal was to improve the overall energy performance of government buildings and infrastructure by more than 6% by 2024-2025;

(b) the Government had already achieved a saving of about 7.8% electricity in government buildings from 2015-2016 to 2019-2020. The Government's overall energy performance had improved by about 3.2% up to 2021-2022. The Administration was therefore confident that the target of more than 6% could be achieved within five years (i.e. by 2024-2025);

(c) EMSD was conducting energy audits (i.e. systematic reviews of the energy consuming equipment/systems in buildings to identify energy management opportunities) for about 250 government buildings, and encouraged government departments to actively implement the energy saving measures recommended in the audit report and install renewable energy systems in their premises so as to improve energy performance; and

(d) EMSD requested various bureaux and departments to provide information on the energy consumption and renewable energy of government buildings and infrastructure each year, in order to review their energy performance. EMSD also organized briefing sessions every year to communicate with various bureaux and departments on energy performance, and provided suggestions on energy saving measures and planning of renewable energy projects.

11. The Administration further advised that the Government had been taking the lead in developing renewable energy, including raising the requirements of applying renewable energy technologies in new government buildings and developing large-scale solar energy generation, waste-to-energy projects, etc. at suitable venues. For instance, the Environmental Protection Department had commenced the operation of T·PARK (sludge treatment facility) and O·PARK1 (Organic Resources Recovery Centre Phase 1), and was constructing O·PARK2 (Organic Resources Recovery Centre Phase 2) and I·PARK1 (Integrated Waste

Management Facilities Phase 1). Also, the Water Supplies Department planned to install a 5 MW floating solar energy generation system at Plover Cove Reservoir and introduce high-efficiency battery storage technology on a pilot basis to better utilize the electricity generated by large-scale solar energy generation systems at reservoirs, and develop a 10 MW solar farm at the South East New Territories Landfill in Tseung Kwan O. In addition, the Government had earmarked a total of $3 billion to install small-scale renewable energy systems at government premises since 2017-2018. About $1.9 billion had been approved for about 170 projects as at April 2023, including installation of solar energy generation systems at government offices, government quarters, schools, recreational grounds-cum-rest gardens, reservoirs and pedestrian links, as well as installation of waste-to-energy and hydro power systems at multiple sewage treatment plants.

Total amounts of electricity consumption and greenhouse gas emissions

12. Members enquired about **the total amount of electricity consumption arising from the Government's overall operation** (including the amount of such consumed electricity which was generated by renewable energy) **and the total amount of greenhouse gas emissions**, together with a breakdown by government department.

13. The Administration advised that:

(a) the overall energy usage of the Government (including electricity, towngas, liquefied petroleum gas and renewable energy) were 3.015 billion kWh and 3.009 billion kWh in 2020-2021 and 2021-2022 respectively, using the comparable operating conditions in 2018-2019 as the base year; with the renewable energy herein being 109 million kWh and 120 million kWh respectively;

(b) the greenhouse gas emissions from the overall energy usage of the Government in 2020-2021 and 2021-2022 were approximately 1 470 kT and 1 461 kT CO2-e respectively; and

(c) the carbon emissions and energy use of various government departments were generally announced in the departments' annual environmental performance reports or other means. The breakdown for individual departments had not been provided because not all data were suitable for public disclosure due to the nature of the work of the departments. The differences in the work and the operating environment of various departments had also rendered it inappropriate to compare such figures.

Pilot Scheme on Building-Integrated Photovoltaics

14. The 2024-2025 Budget announced that the Government would launch a **Pilot Scheme on Building-Integrated Photovoltaics** to explore photovoltaic technology applications on the facades of government buildings. In this regard, Members enquired about the **details of the Pilot Scheme**.

15. The Administration advised that through multi-disciplinary and interdepartmental collaboration including EMSD, the Buildings Department, Architectural Services Department and Fire Services Department, the Government would launch the Pilot Scheme on Building-Integrated Photovoltaics at the EMSD Headquarters to explore photovoltaic technology applications on the facades of buildings as well as the supply of renewable energy to buildings. The scheme details would be announced in due course. Apart from generating renewable energy for buildings, the Pilot Scheme could provide actual data for reference and evaluation. Based on the relevant data collected, the Government would assess the effectiveness and feasibility of Building-Integrated Photovoltaics from various aspects such as the actual power generation efficiency, performance in reducing indoor energy consumption as well as repair and maintenance requirements and expenditures, so as to evaluate whether to extend the Scheme to other public and private organizations in the future.

Council questions

16. Members raised questions related to energy conservation and decarbonization at Council meetings in recent years. The questions and the Administration's replies are hyperlinked in **Appendix 2**.

Relevant papers

17. A list of relevant papers on the website of the Legislative Council is set out in **Appendix 2**.

Council Business Divisions
Legislative Council Secretariat
16 January 2025

Appendix 1

The 13 types of prescribed buildings covered by the Buildings Energy Efficiency Ordinance (Cap. 610)

1. Commercial building
2. A portion of a composite building that is not for residential or industrial use
3. Hotel or guesthouse
4. Common area of a residential building
5. Common area of a portion of a composite building that is for residential or industrial use
6. Common area of an industrial building
7. Building that is occupied principally for an education purpose
8. Building that is occupied principally as a community building including a community hall and social services centre and composite building occupied as 2 or more such places
9. Building that is occupied principally as a municipal services building including a market, cooked food centre, library, cultural centre and indoor games hall and composite building occupied as 2 or more such places
10. Building that is occupied principally for medical and health care services including a hospital, clinic and rehabilitation centre
11. Building that is owned by the Government and used principally for the accommodation of people during the performance of any function of the Government
12. Passenger terminal building of an airport
13. Railway station

(Source: The Electrical and Mechanical Services Department's web page on the Buildings Energy Efficiency Ordinance (Cap. 610))

Appendix 2

Buildings Energy Efficiency Ordinance

List of relevant papers

Committee	Date of Meeting	Paper
Panel on Environmental Affairs	22 June 2015	Agenda Item IV: Energy Saving Plan for Hong Kong 2015 ~ 2025+ Minutes
	26 June 2017	Agenda Item IV: Hong Kong's Climate Action Plan 2030+ Minutes
	22 January 2020	Agenda Item IV: Creation of a permanent directorate post (Chief Building Services Engineer) to oversee district cooling system projects Minutes
	30 October 2023	Agenda Item III: Briefing by the Secretary for Environment and Ecology on the Chief Executive's 2023 Policy Address Minutes
Finance Committee	13 April 2023	Administration's written replies to Members' initial questions on the Estimates of Expenditure 2023-2024 (Reply serial numbers: EEB(E)033 and 145)
	17 April 2024	Administration's written replies to Members' initial questions on the Estimates of Expenditure 2024-2025 (Reply serial numbers: EEB(E)024, 159 and 214)

Council meeting	Paper
6 April 2022	Council question 22: Facilitating the achievement of carbon neutrality in existing buildings
10 May 2023	Council question 5: Government departments' work on moving towards carbon neutrality

Government bureau	Document
Environment and Ecology Bureau	Energy Saving Plan for Hong Kong's Built Environment 2015~2025+ Hong Kong's Climate Action Plan 2050
Electrical and Mechanical Services Department	Consultation Paper on Proposed Amendments to the Buildings Energy Efficiency Ordinance (Cap. 610) Code of Practice for Energy Efficiency of Building Services Installation (2024 Edition) Code of Practice for Building Energy Audit (2024 Edition)