Global Sustainable Buildings Guide - Hong Kong

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*This chapter was last reviewed in April 2024.*

# Authors

# Green Certification

## Is there a nationally adopted and recognized form of certification for buildings? What is it and is it mandatory for all new buildings and refurbished buildings?

**BEAM Plus**

Building Environmental Assessment Method (BEAM) Plus is the leading environmental assessment tool for buildings in Hong Kong. The local BEAM scheme was established in 1996 and was largely based on the UK's BREEAM. In November 2009, the scheme was revamped and renamed BEAM Plus.

BEAM Plus is a voluntary private sector initiative administered by the BEAM society and recognized by the Hong Kong Green Building Council (HKGBC), an industry-wide platform to drive the market transformation for sustainable buildings in Hong Kong. BEAM Plus has separate assessment tools for New Buildings (NB), Existing Buildings (EB), Interiors (BI), Neighborhood (ND), Data Centers (DC) and Existing Schools (ES). Generally, there are four ratings available for a project (i.e., Platinum, Gold, Silver or Bronze) after completing the assessment.

BEAM Plus NB: BEAM Plus NB covers the demolition, planning, design, construction and commissioning of a new building of any type. It can also be applied to major renovations of existing buildings. Its predecessor, BEAM for NB, was first introduced in 2004. The latest version, BEAM Plus NB V2.0, was launched in 2019 and assesses a building's performance on the following seven aspects: (i) Integrated Design and Construction Management; (ii) Health and Wellbeing; (iii) Sustainable Sites; (iv) Materials and Waste; (v) Energy Use; (vi) Water Use; (vii) Innovations and Additions. NBs have to undergo a provisional assessment and a final assessment, with four ratings (i.e., Platinum, Gold, Silver or Bronze) available for each stage of assessment.

BEAM Plus EB: BEAM Plus EB covers existing buildings of all types and all ages and may be applied at any time during a building's operational life. Its predecessor, BEAM for EB, was first introduced in 2004. The latest version, BEAM Plus EB V2.0, was launched in 2016 and assesses a building's overall environmental performance throughout its life cycle by considering the following seven aspects of sustainability: (i) Site Aspects; (ii) Management; (iii) Materials and Waste Aspects; (iv) Energy Use; (v) Water Use; (vi) Indoor Environmental Quality; and (vii) Innovations and Additions. BEAM Plus EB V2.0 allows applicants to apply for a Comprehensive Scheme or a Selective Scheme according to their needs, budget and technical capabilities. Under the Comprehensive Scheme, there will be a holistic review of the building, and four ratings (i.e., Platinum, Gold, Silver or Bronze) are available for a project after completing the assessment. Under the Selective Scheme, the applicant may apply for an individual assessment of each aspect, and four ratings (i.e., Excellent, Very Good, Good, Satisfactory) are available for an aspect after completing the assessment.

BEAM Plus BI: In 2013, BEAM Plus BI was first introduced in response to strong marketplace demand for a localized benchmark for interior fit-out, renovation and refurbishment works. It was designed specifically for Hong Kong and is targeted at assessing the fit-out, renovation and refurbishment projects of nondomestic and occupied spaces, such as office and retail premises, hotel rooms and function rooms, restaurants, educational facilities, and institutional facilities. In 2023, the updated version, BEAM Plus BI V2.0 – Non-Residential, was launched, and the tool also expanded its assessment scope to include residential spaces with the launch of BEAM Plus BI V2.0 – Residential. Under BEAM Plus BI V2.0 – Non-Residential, four ratings (i.e., Platinum, Gold, Silver or Bronze) are available for a project after completing the assessment. Under BEAM Plus BI V2.0 – Residential, two ratings (i.e., Green or Green+) are available for a project after completing the assessment.

BEAM Plus ND: BEAM Plus ND was launched in 2016 and focuses on the design of the space between buildings and the socioeconomic elements of a development. Assessment aspects of BEAM Plus ND consist of (i) Community Aspects, (ii) Outdoor Environmental Quality, (iii) Site Aspects, (iv) Materials and Waste Aspects, (v) Energy Aspects, (vi) Water Aspects, and (vii) Innovations and Additions. Four ratings (i.e., Platinum, Gold, Silver or Bronze) are available for a project after completing the assessment.

BEAM Plus DC: With the sharp rise in demand for data centers in Hong Kong and the huge power consumption associated with it, BEAM Plus DC was launched in 2021. It assesses the design and construction of new data centers, as well as the operations and maintenance of existing data centers, with slight differences in the assessment aspects. Four ratings (i.e., Platinum, Gold, Silver or Bronze) are available for a project after completing the assessment.

BEAM Plus ES: BEAM Plus ES was launched in 2022 to assess existing primary and secondary schools. The assessment framework of BEAM Plus ES comprises the following five categories: (i) Sustainable Leadership and Learning; (ii) Efficient Use of Resources; (iii) Sustainable Campus Environment; (iv) Health, Comfort and Happiness; and (v) Innovations and Additions. A school achieving an overall score of 50 will be awarded a rating of "Green" (while an "Unclassified" rating would be given to a school if its overall score does not reach 50).While certification is voluntary, the Hong Kong government has been leading by example. Since 2009, all new government buildings with a construction floor area of more than 10,000 square meters have been aiming to achieve at least a Gold rating under BEAM Plus. From October 2015, this target was further expanded to cover all new government buildings with a construction floor area of more than 5,000 square meters and with central air-conditioning. Additionally, new government buildings serving as landmarks will need to consider achieving a Platinum rating whenever possible. Green concepts have also been incorporated into public housing developments. From 2015-2016, all new public housing projects have aimed to attain the performance equivalent to BEAM Plus Gold or above.

As of March 2024, more than 2,500 projects have been registered or certified with BEAM Plus in Hong Kong.

**LEED**

In addition to BEAM Plus, the US Green Building Council's LEED is also used in Hong Kong as an alternative certification standard. Local developers are attracted by LEED's global popularity, as it appeals to multinational tenants seeking to occupy green buildings in Hong Kong.

**Zero-Carbon-Ready Building Certification Scheme**

In furtherance to the carbon emission reduction and energy use reduction targets set by "Hong Kong's Climate Action Plan 2050" released in 2021, the HKGBC launched the Zero-Carbon-Ready Building Certification Scheme in June 2023 to help the building sector to benchmark energy performance and set decarbonization targets.

The Zero-Carbon-Ready Building Certification Scheme has three categories of certification, namely the Energy Performance Certificate, Target Setting Certificate and Progress Certificate. The scheme aims to allow building owners to do the following:

Benchmark and report the energy performance of their buildings

Set their targets for carbon neutrality and tracking their progress

Justify their improvement projects for green financing

**Net-Zero Building Certification Scheme**

Following the success of the Zero-Carbon-Ready Certification Scheme, in March 2024, the HKGBC introduced the Net-Zero Building Certification Scheme. By issuing a Net Zero Building Certificate, the scheme aims to recognize buildings whose renewable energy produced in-situ is not less than its energy consumption.

# Energy Performance Certificates and Minimum Energy Standards

## Is there a mandatory form of energy performance certification? When does it apply and are there any prescribed minimum standards?

**Mandatory certification under the Buildings Energy Efficiency Ordinance**

The Buildings Energy Efficiency Ordinance (BEEO) was enacted in September 2012 and made it mandatory to comply with the building energy codes (BECs) in the manner set out below. The BECs are regularly updated and stipulate the minimum energy performance standards for the following four building services installations: (i) air-conditioning; (ii) lighting; (iii) lifts and escalators; and (iv) electrical installations. As of March 2024, the latest edition of the BEC is the 2021 edition.

In respect of new buildings, developers or owners of one or more of 13 types of prescribed new buildings must ensure that their building's four key types of building services installations comply with the design standards of the BECs. Accordingly, the developers or owners must apply for a "Certificate of Compliance Registration" upon completion of the building. The certificate must be renewed every 10 years, which means that the building's compliance with the BECs must be recertified every 10 years. The Electrical and Mechanical Services Department (EMSD) keeps a register of buildings with this certificate, and the register is publicly available online.

In respect of existing buildings, the responsible persons (i.e., owners, tenants or occupiers, etc.) must ensure that the building's services installations comply with the BECs when undertaking "major retrofitting works" (i.e., work involving an area over 500 square meters). As such, the owner, tenant or occupier must obtain a "Form of Compliance" after the completion of works.

The owners of commercial buildings must also carry out an energy audit in respect of the four key types of building services installations in accordance with the Energy Audit Code every 10 years. The results of the audit must be displayed at the building for public inspection.

As of March 2024, the government is discussing the proposal to amend the BEEO, which amendment includes widening the scope of prescribed buildings, mandating disclosure of technical information in energy audit reports and shortening the interval of energy audits to five years with the target of commencing legislative work within 2024.

**Voluntary certification under the Energy Efficiency Registration Scheme for Buildings**

The Energy Efficiency Registration Scheme for Buildings (EERSB) was launched in 1998 to promote compliance with the first set of BECs published in 1998. With the implementation of the BEEO in 2012, which made compliance with BECs mandatory, buildings built in recent years have already fulfilled the minimum energy efficiency requirements under the BECs. To continue to encourage and promote the enhancement of energy efficiency of buildings in Hong Kong, the EERSB was reviewed in 2017 so that buildings/premises achieving a better energy performance beyond the statutory requirements could be recognized and commended by the scheme. With effect from 1 January 2018, all types of new and existing buildings/premises outperforming the minimum statutory requirements under the BEEO, evidenced by the BEAM Plus certification (or another internationally recognized assessment system certification), can apply to join the EERSB.

The EMSD maintains a publicly available list of buildings successfully certified under the scheme. If a building is registered, the scheme's "Energy Efficient Building" logo may be used on marketing documents to publicize its energy efficiency.

As of March 2024, there have been more than 4,000 registrations under the EERSB (including registrations prior to 2018).

# Incentives for Green Retrofit

## Are there any government-funded or sponsored schemes for improving the energy efficiency of existing buildings and, broadly, how do they work?

**"Green Welfare NGOs" scheme**

In the 2021/22 budget, the government pledged to set aside HKD 150 million to conduct energy audits and install energy-saving appliances, free of charge, for NGOs financially supported by the Social Welfare Department. In collaboration with the Social Welfare Department, the Environment Bureau and the EMSD launched the "Green Welfare NGOs" scheme in November 2021, which will fully cover the energy-saving projects. The scheme will run five financial years from 2022/23 to 2026/27. As of March 2024, the latest round of applications closed on 31 March 2023, and application windows for further rounds are yet to be announced.

**"Green Schools 2.0 – Energy Smart" scheme**

The government also introduced a HKD 600 million "Green Schools 2.0 – Energy Smart" scheme, to be run for five financial years from 2020/22 to 2024/25. Under the scheme, primary and secondary schools (except government and profit-making schools) are to replace existing air conditioners with variable-speed air conditioners, convert existing fluorescent lighting/incandescent floodlights into LED lighting/LED floodlights, and install real-time energy monitoring systems at their premises, with all expenses in relation to the energy-saving projects covered by the government. As of March 2024, the latest round of applications closed on 30 June 2022, and application windows for further rounds are yet to be announced.

# CO2 and Energy Targets

## Are there any national targets for CO2 reduction and/or energy use reduction from buildings? If there are, are there any exclusions?

Following President Xi Jinping's announcement at the United Nations in 2020 that China would endeavor to achieve peak carbon emissions in 2030 and carbon neutrality before 2060, the Hong Kong government released "Hong Kong's Climate Action Plan 2050" in 2021, setting out the following targets for CO2 reduction and energy use reduction from buildings:

To reduce Hong Kong's carbon emissions by 50% before 2035 as compared to the 2005 level and to achieve carbon neutrality before 2050

To reduce commercial buildings' electricity consumption by 30% to 40% and that of residential buildings by 20% to 30% from the 2015 level by 2050, and to achieve half of the above targets by 2035

# Renewable Energy

## Are there any regulations requiring a percentage of energy consumption to come from renewable sources?

There are no regulations requiring a certain percentage of energy consumption to come from renewable sources. However, to promote the use of renewable energy, in 2009, the Hong Kong government began to require (i) all new school and educational buildings without air-conditioning to aim to have at least 0.5% of their electrical consumption be provided by renewable energy and (ii) all other new government buildings to incorporate renewable energy technologies as far as reasonably practicable. This requirement is part of a target-based green performance framework for new and existing government buildings. With the issuance of a new circular for green government buildings on 1 April 2015 ("**2015 Circular**"), these targets have since been revised and expanded. Under this 2015 Circular are the following requirements:

All new school and educational buildings, irrespective of whether air-conditioning is provided, should aim to have at least 1% of their electrical consumption be provided by renewable energy.

All new open spaces and new public park projects should aim to have (i) at least 15% of their general public lighting be provided by renewable energy and (ii) at least 1% of their electrical consumption be provided by renewable energy.

All new municipal buildings with a high demand for shower facilities (e.g., sports centers and swimming pool complexes) should have a solar hot water system to reduce energy consumption in water heating.

All other new government buildings should incorporate renewable energy technologies as far as reasonably practicable.

Renewable energy technologies should be incorporated in all capital works projects as far as reasonably practicable whenever the project satisfies certain criteria.

On 19 March 2014, the Hong Kong government issued a public consultation document titled "Future Fuel Mix for Electricity Generation." It foresees only a very limited role for renewable energy sources to meet Hong Kong's electricity demand in the future due to Hong Kong's limited prospects for developing wind or solar power generation.

In 2021, the government released "Hong Kong's Climate Action Plan 2050," with one of the strategies being "net-zero electricity generation." The strategy aims to stop using coal for daily electricity generation; increase the share of renewable energy in the fuel mix for electricity generation to 7.5% to 10% by 2035, and to 15% subsequently; and try out the use of new energy and strengthen cooperation with neighboring regions to achieve the long-term target of net-zero electricity generation before 2050.

# Regulation

## What other national regulatory measures are there, such as taxes on energy consumption and/or tax reliefs on energy-saving measures, that can encourage more efficient use of energy in buildings?

In addition to the Building Energy Efficiency Ordinance, in July 1995, the Hong Kong government enacted the Building (Energy Efficiency) Regulation ("**Regulation**"). The Regulation imposes energy efficiency requirements and aims to reduce heat transfer through building envelopes (i.e., the buffer zone between the indoor area of a building and the outdoor environment), thus saving on electricity consumption for air-conditioning.

The Regulation requires external walls and roofs of commercial buildings (and hotels) to be designed and constructed to have a "suitable" Overall Thermal Transfer Value (OTTV). The suitable levels are specified in the Code of Practice for Overall Thermal Transfer Value in Buildings 1995 ("**OTTV Code**") published by the Buildings Department, which were tightened in 2000 and further again in 2011. In April 2015, the OTTV Code was extended to the residents' clubhouses in residential developments. Compliance with the OTTV Code is a prerequisite for gross floor area (GFA) concessions.

For residential buildings, in September 2014, the government promulgated a Guideline on Design and Construction Requirements for Energy Efficiency of Residential Buildings ("**Guideline**") along with a practice note (PNAP-APP156). Similar to the OTTV Code, the Guideline sets out the required level of Residential Thermal Transfer Value (RTTV). It also states that residential buildings should be subject to similar control as the OTTV of commercial buildings (and hotels) and sets out other requirements for Natural Ventilation for Thermal Comfort (NVTC) and glass curtain walls. PNAP-APP156 requires all new building plans or major revisions of building plans for development proposals involving residential buildings to comply with the Guideline as of 1 April 2015. Compliance with the Guideline is also a prerequisite for GFA concessions.

Starting from the 2018-19 financial year, the capital expenditure incurred in procuring energy-efficient building installations and renewable energy devices can be fully deducted in the first year of purchase instead of the previous time frame of five years. Energy-efficient building installations are required to be registered under the EERSB to be eligible for accelerated tax deduction — see details of the EERSB in "Energy Performance Certificates and Minimum Energy Standards."

According to the Exemption from Profits Tax (Feed-in Tariff (FiT) Scheme) Order and the Business Registration (Amendment) Regulation 2019, individuals installing renewal energy systems at their residential premises (not in the course of any other business) are exempted from reporting in the tax return the FiT payments received through participating in the FiT Scheme and the requirement of applying for business registration.

In addition, there are also the following nontax incentives to encourage more efficient use of electricity in buildings and use of renewal energy:

**CLP Holdings Limited (CLP)**

Energy Audit Service: CLP provides a free energy audit service to its business customers to identify energy management opportunities.

Energy Saving Loan Scheme: CLP offers interest-free loans to its business customers to help them implement energy management opportunities identified from their energy audits.

Electrical Equipment Upgrade Scheme: CLP provides subsidies to its business customers to install or upgrade energy-efficient lighting or air-conditioning.

CLP Eco Building Fund: The CLP Eco Building Fund provides subsidies for energy-saving improvement works in communal areas of residential, commercial and industrial buildings.

**HK Electric**

Smart Power Energy Audit: HK Electric provides a free energy audit service to help its nonresidential customers identify energy-saving potential for improving energy efficiency at their business premises.

Smart Power Building Fund: The Smart Power Building Fund sponsored by HK Electric subsidizes building owners (except buildings directly owned and operated by the government (housing estates of the Hong Kong Housing Authority and Hong Kong Housing Society are eligible)) in carrying out retrofitting, retro-commissioning or building-based smart technologies projects to enhance the energy efficiency of communal building services installations (e.g., lighting, air-conditioning, lift, escalator, electrical installation, etc.).

Smart Power Loan Fund: Under the Smart Power Loan Fund, collaborating banks will provide loans for the implementation of energy efficiency enhancement projects, while HK Electric will subsidize the respective loan interests.

Energy-Efficient Equipment Subsidy: The Energy-Efficient Equipment Subsidy subsidizes 50% of nonresidential customers' costs to retrofit energy-efficient equipment for enhancing energy efficiency, subject to certain caps.

**Government**

Green Tech Fund (GTF): The GTF was established in 2020 to provide better and more focused funding support to R&D projects, which can help Hong Kong decarbonize and enhance environmental protection. A total of HKD 400 million has been allocated to the GTF. There are certain themes that will be prioritized when allocating funding, and "energy saving and green buildings" is one of them. Public research institutes, designated R&D centers and local companies are eligible to apply for funding of up to HKD 30 million per project.

"Solar Harvest" scheme: The government introduced the "Solar Harvest" scheme in 2019 to subsidize schools (except government and profit-making schools) and welfare NGOs financially supported by the Social Welfare Department in installing small-scale solar energy generation systems at their premises. These schools and welfare NGOs can then join the FiT Scheme operated by the two local power companies (whereby they can sell the renewable energy generated by solar panels to the power companies at a rate higher than the normal tariff rate). The government will fully cover all the expenses in relation to the solar energy generation installation and FiT application (including capital costs of the solar energy generation systems, installation costs, costs of professional services, etc.). The scheme will run for five financial years from 2019/20 to 2023/24. As of March 2024, the scheme has already closed for applications.

Facilitation Measures on the Installation of Solar Photovoltaic Systems in Open Car Parks by the Private Sector: In 2022, the Environment Bureau and the Development Bureau introduced a set of measures to facilitate the installation of solar photovoltaic systems in open car parks by the private sector. Upon meeting the specified requirements and obtaining the Environment Bureau's policy support, the private sector may install solar photovoltaic systems (including the supporting structure(s)) not exceeding three meters in height in car parking spaces of larger-scale open car parks located on the ground or on the main roof of nondomestic premises. The Buildings Department will grant a 100% GFA concession to car parking spaces (excluding driveways) that are covered by these solar photovoltaic systems. It will accept the mean height of the roof over the highest usable floor space of the existing building for the purposes of calculating building height restrictions in determining the approved site coverage and the plot ratio of the building.

EV-Charging at Home Subsidy Scheme: The government rolled out a HKD 3.5 billion "EV-Charging at Home Subsidy Scheme" in 2020 to subsidize the installation of infrastructure that enables EV charging in car parks of existing private residential buildings, and hence further help EV owners to install EV chargers in the car parks of their residences according to their own needs in the future simply and easily. As of March 2024, the funding had reached the HKD 3.5 billion funding ceiling, and the applications closed on 31 December 2023.

# Financing

## Are there any public or private “green” financing initiatives for sustainable real estate projects?

The Hong Kong government has been very proactive in establishing Hong Kong as the green financing center in the Greater China area and Asia generally. To this end, it has adopted many policy measures, for example, the following:

Establishment of the Green and Sustainable Finance Cross-Agency Steering Group and a Green and Sustainable Finance Center under it in 2020

Establishment of the Green and Sustainable Finance Grant Scheme in 2021 to provide subsidies for the transactional costs associated with various types of green financing

So far, the Hong Kong real estate sector has been one of the sectors that has received the biggest amount of green financing in Hong Kong.

On the private side, a number of major commercial banks have rolled out green mortgage programs, which provide better-priced mortgage financing for purchasing residential properties that have received a BEAM Plus NB or EB Gold or Platinum rating.

# Planning

## Is the national or local/state government able to mandate green initiatives via the planning/zoning regime (e.g., district heating systems on large developments)?

Technically, yes. For example, an applicant requesting permission to develop on land designated as a "Comprehensive Development Area" must prepare a master layout plan for the Town Planning Board's approval. The Town Planning Board may issue planning briefs to set out broad planning parameters and development requirements to facilitate the preparation of the master layout plan. The planning brief can mandate green initiatives (such as achieving a certain grade of green building certification for new buildings).

That said, promotion of green initiatives is more effectively carried out via the GFA concessions introduced by the Hong Kong government in April 2011 for green features of real estate projects. Concessions are made available so that certain green features, such as balconies and communal podium gardens, can be disregarded when calculating whether a building's permitted GFA has been used up. Certification by BEAM Plus is a prerequisite of taking advantage of a GFA concession for green features. The Buildings Department announced through the revised Practice Note "PNAP APP-151" that, starting from 30 June 2024, building projects will generally need to obtain a BEAM Plus Gold rating or above to be eligible for GFA concessions for green and amenity features. The concessions have an overall cap of 10% of the GFA. Certain features, such as communal sky gardens, are not subject to this overall cap.

# Green Leases

## Are green leases or green lease provisions mandatory or optional? If mandatory, to whom do they apply? If optional, is there significant take up?

Green leases and green lease provisions are neither mandatory nor commonly used in Hong Kong. However, we are seeing continued efforts from various players in promoting green lease/green lease provisions. For example, the HKGBC has launched a few green tenancy tools, and some large landlords and international tenants require certain environmental protection obligations (generally quite light at the moment) in their leases. In general, we have been seeing more take-up of green lease provisions in the market in recent years and expect the trend to continue or even accelerate in the future.

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