

# Guidance Notes for Solar Photovoltaic (PV) System Installation

June 2024

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EMSD





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### ◆ Chinese version

[https://re.emsd.gov.hk/tc\\_chi/files/PVGuidanceNotes.pdf](https://re.emsd.gov.hk/tc_chi/files/PVGuidanceNotes.pdf)

### ◆ English version

<https://re.emsd.gov.hk/english/files/PVGuidanceNotes.pdf>



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# 1 Foreword





## 1. Foreword

- 1.1 To assist the public to better understand the issues related to solar PV system installations and the FiT Scheme application procedures, a Working Group was formed in 2018 with members from the Environment Bureau (ENB) (now renamed as the Environment and Ecology Bureau (EEB)), Electrical and Mechanical Services Department (EMSD), Lands Department (LandsD), Planning Department (PlanD), Buildings Department (BD) and Fire Services Department (FSD), to develop the Guidance Notes for Solar Photovoltaic (PV) System Installation.
- 1.2 This set of Guidance Notes provides general guidelines for intending purchasers, owners and installers of solar PV systems to understand the installation requirements and FiT Scheme application procedures associated with the installation, operation and maintenance of such systems.
- 1.3 The intending purchasers, owners and installers may also make reference to "Technical Guidelines on Grid Connection of Renewable Energy Power Systems" which explains the technical issues and the application procedures relating to grid connection of small-scale renewable energy installations. The technical guidelines can be downloaded from the website of the EMSD at [https://re.emsd.gov.hk/english/fit/tec\\_gui/grid\\_tech.html](https://re.emsd.gov.hk/english/fit/tec_gui/grid_tech.html)
- 1.4 The Guidance Notes will be reviewed regularly. The EMSD welcomes suggestions for improvement.

First issue : October 2018  
Second revision : January 2019  
Third revision : December 2022  
Fourth revision : June 2024

# 2 Glossary of Terms and Abbreviations





## 2. Glossary of Terms and Abbreviations

Terms	Definition
Approved loading	The maximum current demand approved by an electricity supplier in respect of a fixed electrical installation.
Aggregated Power Rating	The arithmetic sum of the power rating of each item of power generating equipment of all the Renewable Energy Power Systems installed in each location or in each building, irrespective of whether they are installed by the landlord or tenants.
Authorized Person	It means a person whose name is on the authorized persons' register kept under section 3(1) of the Buildings Ordinance (Cap. 123)- (a) as an architect; (b) as an engineer; or (c) as a surveyor.
BD	Buildings Department
CoP	The current revised edition of the Code of Practice for the Electricity (Wiring) Regulations issued by the EMSD.
Distribution System	The on-site 220/380V low-voltage electricity supply network operated by the site owner or the site management team.
Electrical equipment	Machines, transformers, apparatus, appliances, measuring instruments, protective devices, wiring materials, accessories, fittings and similar things, used for generation, conversion, transmission, distribution, control, measurement or utilisation of electrical energy.
Electrical installation	An assembly of associated electrical equipment.
Electricity Ordinance	Chapter 406 of the Laws of Hong Kong, which is enforced by the EMSD regulating electrical safety.
EMSD	Electrical and Mechanical Services Department

Electrical work	Work in relation to the installation, commissioning, inspection, testing, maintenance, modification or repair of a low voltage or high voltage fixed electrical installation and includes the supervision and certification of that work and the certification of design of that installation.
Feed-in Tariff (FiT)	Under the Feed-in Tariff Scheme (FiT Scheme), the Utility will purchase all the units of electricity generated by customers' grid-connected REPSs at FiT rates. At present, both solar energy generation systems and wind power systems are eligible to join the FiT Scheme.
Fixed electrical installation	A low or high voltage electrical installation that is fixed to premises but does not include any electrical equipment that is supplied with electricity after passing through a socket of the installation at which the supply can be disconnected without the use of a tool.
Grid	The 220/380V low-voltage electricity supply network operated by the power companies.
LandsD	Lands Department
New Territories Exempted Houses (NTEH) (commonly known as village houses)	NTEH generally refer to those village houses situated in the New Territories which by virtue of the Buildings Ordinance (Application to the New Territories) Ordinance (Cap. 121) are exempted from certain provisions of the Buildings Ordinance (Cap. 123) and its subsidiary regulations (including the need for obtaining prior approval and consent to the commencement of works from the Buildings Department. NTEH are in general designed and built in compliance with the exemption criteria in respect of the height and roofed-over area, etc. stipulated in the Buildings Ordinance (Application to the New Territories) Ordinance, which thus qualify them for exemption. For example, new housing should be of not more than 3 storeys and of a height of not more than 8.23 m (about 27 feet) and with a roofed-over area not exceeding 65.03 m <sup>2</sup> (about 700 square feet).



<p><b>Owner</b> (Note: The interpretation on the right is only applicable to electrical installations)</p>	<p>(a) A person who is in possession or control of an electrical installation; and (b) A person who holds premises in which an electrical installation is located, whether the premises are held under lease, licence or otherwise and includes an agent of that person and a tenant or occupier of premises.</p>
<p><b>Prescribed Building Professional (PBP)</b></p>	<p>A prescribed building professional means an authorised person, a registered structural engineer, a registered geotechnical engineer or a registered inspector under section 2(1) of the Buildings Ordinance (Cap. 123). The appointment of prescribed building professionals in respect of minor works should comply with section 27 of the Building (Minor Works) Regulation (Cap. 123N).</p>
<p><b>Prescribed Registered Contractor (PRC)</b></p>	<p>A prescribed registered contractor means a registered general building contractor, a registered specialist contractor or registered minor works contractor under section 2(1) of the Buildings Ordinance (Cap. 123). The appointment of prescribed registered contractor in respect of minor works should comply with section 28 of the Building (Minor Works) Regulation (Cap. 123N).</p>
<p><b>Renewable Energy (RE)</b></p>	<p>Energy generated from sources that are secure and inexhaustible, in the sense that there is no problem of reserves being depleted. Examples of RE sources are solar power, wind power, etc.</p>
<p><b>Registered Electrical Contractor (REC)</b></p>	<p>An electrical contractor registered under section 33 of the Electricity Ordinance (Cap. 406).</p>
<p><b>Registered Electrical Worker (REW)</b></p>	<p>An electrical worker registered under section 30 of the Electricity Ordinance (Cap. 406).</p>
<p><b>Renewable Energy Power System (REPS)</b></p>	<p>Electricity generating facilities with RE sources as the primary feedstock.</p>

# 3 Introduction





### 3. Introduction

- 3.1 In the post-2018 Scheme of Control Agreements (SCAs), Feed-in Tariff (FiT) Scheme is one of the new initiatives to be introduced to help encourage the private sector to consider investing in RE as the power generated could be sold to the power companies at a rate higher than the normal electricity tariff rate to help recover the costs of investment in the RE systems and generation. Taking into consideration the RE potential in Hong Kong, FiT will be offered to solar PV systems as well as wind power systems.
- 3.2 Except for government bodies, all customers of the power companies who plan to install solar PV systems and/ or wind power systems with a generating capacity of up to 1 MW at their premises in the respective power company's supply area are eligible for prescribed FiT rates from that power company based on the units of electricity generated, as long as the distributed RE systems are connected to the grid of the relevant power company subject to FiT Terms and Conditions. RE systems with a generating capacity exceeding 1 MW will be considered on a case-by-case basis.
- 3.3 It is not allowed to connect the REPS with any non-renewable energy source or energy storage facility, which will affect the reading of the FiT Meter for measuring electricity generated from the REPS. Based on this principle, any energy storage facility must not be connected on the REPS side before the FiT meter.
- 3.4 Capital cost of Solar PV systems varies according to the generating capacity and PV panel technology. Generally speaking, the capital cost of a solar PV system is around tens of thousands dollars per kilowatt, covering costs of labour and inspection, structural support, inverter, PV modules and associated electrical installations, etc.

# 4 Major Components of Solar PV System



## 4. Major Components of Solar PV System

### 4.1 Solar PV Panel

- (i) In general, the solar PV panels that can be found in the market are built up by three major types of solar cells (or solar modules) – monocrystalline cells, polycrystalline cells or thin film cells. The energy conversion efficiency and price of the three types of solar PV panels are different. Intending purchasers, owners and installers may purchase the appropriate type of solar PV panels according to the design of solar PV system and their budget. In general, the energy conversion efficiency and the cost of monocrystalline cells are higher than the other two.
- (ii) When purchasing solar PV panels, intending purchasers, owners and installers should select the solar PV panels designed and manufactured according to relevant international standards or specifications, and so certified by the recognised organisations or relevant testing and certification authorities. Intending purchasers, owners and installers may request suppliers to provide certificates for the design and safety standards of the solar PV panels and other key components, and confirm that the product has met the relevant international standards and provide appropriate period of warranty.

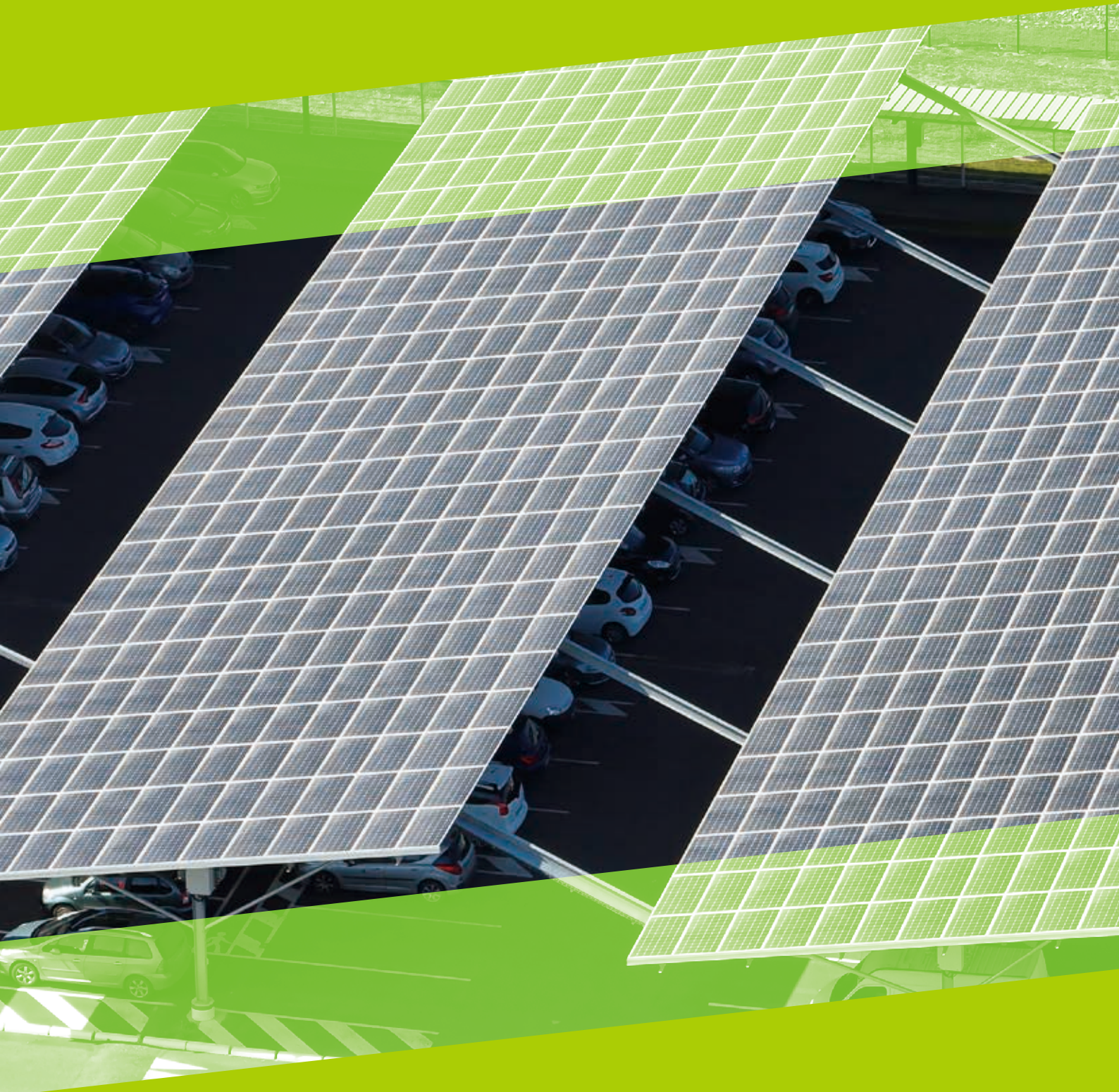


## 4.2 Inverter

- (i) Inverter is a key component of a solar PV system. Inverter converts the output direct current (DC) of solar PV panel array into alternating current (AC). The isolation transformer installed inside or outside the inverter helps to prevent the injection of DC into the distribution system.
- (ii) Inverter should incorporate various functions, such as a power conditioning function to control the harmonic currents and the output power factor of the RE system; adjusting the voltage and ensuring the safe operation of the RE system, etc. For further details of the various functions, please refer to the “Technical Guidelines on Grid Connection of Renewable Energy Power Systems”, which can be downloaded from the website of the EMSD.
- (iii) When purchasing inverters, intending purchasers, owners and installers should select the inverters designed and manufactured according to relevant international standards or specifications, and so certified by the recognised organisations or relevant testing and certification authorities. Intending purchasers, owners and installers may request suppliers to provide certificates for the design and safety standards of the inverters and other key components, and confirm that the product has met the relevant international standards and provide appropriate period of warranty.



# Installation Requirements





## 5. Installation Requirements

### 5.1 General Requirements

- (i) The power output of a solar PV system will be affected by a series of factors including the installation location, orientation, solar irradiation, solar PV panel efficiency, the design and installation method of the solar PV system.
- (ii) Solar PV systems should be installed on the roof and / or open areas which should be a structurally sound area and these areas should be unshaded from adjacent structures, buildings and trees. Extra space should be reserved for the installation of inverters and related equipment and for maintenance. To obtain the optimum power output, it is recommended that solar PV panels should be installed at a tilting angle between 14° and 22° facing south.
- (iii) Installation of solar PV systems in New Territories Exempted Houses (NTEH) (commonly known as village houses) should be carried out in accordance with the requirements given in item 5.2. For solar PV system in other private buildings, supporting structure is building works under the Buildings Ordinance (Cap. 123). Any person who intends to carry out the relevant building works shall comply with the requirements under that Ordinance, details given in item 5.3.
- (iv) For those solar PV systems involved low / high voltage electrical installation, the owner should employ a REC to carry out the related electrical work, and the REW employed by the REC should follow the technical guidelines of the CoP to carry out the work.
- (v) Generally speaking, the Aggregated Power Rating of solar PV systems should be within the approved loading.

## 5.2 Installation of Solar PV Systems in New Territories Exempted Houses (NTEH) (commonly known as village houses)

- (i) According to the LandsD's and BD's policy on Green and Amenity Facilities in NTEH, a resident may retain the existing solar PV systems or install solar PV systems on the rooftop and roof of stairhood of village houses without the need to obtain prior approval from the LandsD or BD provided that the installations comply with the relevant prescribed requirements, which have been given in the booklets "Building New Territories Exempted Houses" published by the LandsD ([https://www.landsd.gov.hk/doc/en/small-house/Building%20NT%20Exempted%20Houses\\_e.pdf](https://www.landsd.gov.hk/doc/en/small-house/Building%20NT%20Exempted%20Houses_e.pdf)) or "Village Houses without unauthorised building works put your mind at ease!" published by the BD ([https://www.bd.gov.hk/doc/en/resources/pamphlets-and-videos/VHWUBW\\_b.pdf](https://www.bd.gov.hk/doc/en/resources/pamphlets-and-videos/VHWUBW_b.pdf)).

As announced in the 2018 Policy Address, subject to fulfilment of specified conditions, the height restriction in relation to installation of solar PV systems at the rooftop of NTEH is relaxed to 2.5m. Such conditions include, for such facilities (including the supporting structure) installed on the main roof, the average loading imposed should not exceed 150kg/m<sup>2</sup>. For such facilities (including the supporting structure) installed on the roof of stairhood, the average loading imposed should not exceed 75kg/m<sup>2</sup>. For details, please refer to Appendix 1.

The solar PV system should be properly installed and should not adversely affect the structural safety of the building. For system exceeding 1.5m high measured from the roof level, it should be certified by an Authorized Person registered under the Buildings Ordinance for submission of a safety certificate to the LandsD for record.





- (ii) If the garden adjacent to a village house is privately owned or situated on a site under short term tenancy which is in conformity / compliance with the relevant land use and lease or tenancy conditions and if the relevant building works are minor works, (i.e. Minor Works Item No. 1.50 ([https://www.bd.gov.hk/en/building-works/minor-works/minor-works-items/index\\_mwcs\\_item1\\_50.html](https://www.bd.gov.hk/en/building-works/minor-works/minor-works-items/index_mwcs_item1_50.html)) or 3.50 ([https://www.bd.gov.hk/en/building-works/minor-works/minor-works-items/index\\_mwcs\\_item3\\_50.html](https://www.bd.gov.hk/en/building-works/minor-works/minor-works-items/index_mwcs_item3_50.html))), the landlord or tenant concerned should appoint a prescribed building professional and / or a prescribed registered contractor to carry out erection of supporting structure for solar PV systems through the simplified requirements under the Minor Works Control System of the BD to ensure compliance with the requirements of the Buildings Ordinance. If these are the removal of the supporting structure for solar PV systems and are minor works (i.e. Minor Works Item No. 3.2 ([https://www.bd.gov.hk/en/building-works/minor-works/minor-works-items/index\\_mwcs\\_item3\\_2.html](https://www.bd.gov.hk/en/building-works/minor-works/minor-works-items/index_mwcs_item3_2.html))), the building owner or tenant concerned should appoint a prescribed registered contractor to carry out the removal of the supporting structure for solar PV systems through the simplified requirements under the Minor Works Control System of the BD to ensure compliance with the requirements of the Buildings Ordinance.
- (iii) If the building works involved are not exempted building works or minor works items, the building owner or tenant concerned should appoint an authorized person to submit building plans to the BD in accordance with the Buildings Ordinance and proceed with the works after obtaining prior approval for and consent to the commencement of works.
- (iv) Generally speaking, if the installation of solar PV system on the rooftop is primarily an ancillary facility for supplementing power supply to the village houses, it is not in contravention of the relevant planned use.
- (v) The flowchart of Installation of Solar PV Systems in NTEH (commonly known as village houses) is attached in Appendix 1 for reference.

### 5.3 Installation of Solar PV Systems in Private Buildings

- (i) If the installation works of solar PV systems on private buildings are minor works (i.e. Minor Works Items 1.50 ([https://www.bd.gov.hk/en/building-works/minor-works/minor-works-items/index\\_mwcs\\_item1\\_50.html](https://www.bd.gov.hk/en/building-works/minor-works/minor-works-items/index_mwcs_item1_50.html)) or 3.50 ([https://www.bd.gov.hk/en/building-works/minor-works/minor-works-items/index\\_mwcs\\_item3\\_50.html](https://www.bd.gov.hk/en/building-works/minor-works/minor-works-items/index_mwcs_item3_50.html))), the building owner or tenant concerned should appoint a prescribed building professional and / or a prescribed registered contractor to carry out the erection of supporting structure for solar PV systems through the simplified requirements under the Minor Works Control System of the BD to ensure compliance with the requirements of the Buildings Ordinance. If these are the removal of the supporting structure for solar PV systems and are minor works (i.e. Minor Works Item No. 3.2 ([https://www.bd.gov.hk/en/building-works/minor-works/minor-works-items/index\\_mwcs\\_item3\\_2.html](https://www.bd.gov.hk/en/building-works/minor-works/minor-works-items/index_mwcs_item3_2.html))), the building owner or tenant concerned should appoint a prescribed registered contractor to carry out the removal of the supporting structure for solar PV systems through the simplified requirements under the Minor Works Control System of the BD to ensure compliance with the requirements of the Buildings Ordinance.
- (ii) If the building works involved are not exempted works or minor works items, the building owner or tenant concerned should appoint an authorized person and submit building plans to the BD in accordance with the Buildings Ordinance. Building works can only be carried out after obtaining prior approval for and consent to the commencement of works from the BD.
- (iii) Generally speaking, if installation of solar PV systems on the rooftops of private buildings is primarily an ancillary facility for supplementing power supply to the buildings or the households therein, it is not in contravention of the relevant planned use.
- (iv) The installation of solar PV systems in existing buildings should conform / comply with the relevant land use and lease conditions. Otherwise, applications should be submitted to the LandsD subject to land lease conditions.
- (v) The flowchart of Installation of Solar PV Systems in Private Buildings is attached in Appendix 2 for reference.



## 5.4 Installation of Solar PV Systems in Vacant Land

- (i) If the vacant land is privately owned or within an area of short term tenancy which is in conformity / compliance with the relevant land use and lease or tenancy conditions and if the relevant building works are minor works (i.e. Minor Works Item No. 1.50 ([https://www.bd.gov.hk/en/building-works/minor-works/minor-works-items/index\\_mwcs\\_item1\\_50.html](https://www.bd.gov.hk/en/building-works/minor-works/minor-works-items/index_mwcs_item1_50.html)) or 3.50 ([https://www.bd.gov.hk/en/building-works/minor-works/minor-works-items/index\\_mwcs\\_item3\\_50.html](https://www.bd.gov.hk/en/building-works/minor-works/minor-works-items/index_mwcs_item3_50.html))), the relevant landlord or tenant should appoint a prescribed building professional and/ or a prescribed registered contractor to carry out erection of supporting structure for solar PV systems through the simplified requirements under the Minor Works Control System of the BD to ensure compliance with the requirements of the Buildings Ordinance. If these are the removal of the supporting structure for solar PV systems and are minor works (i.e. Minor Works Item No. 3.2 ([https://www.bd.gov.hk/en/building-works/minor-works/minor-works-items/index\\_mwcs\\_item3\\_2.html](https://www.bd.gov.hk/en/building-works/minor-works/minor-works-items/index_mwcs_item3_2.html))), the building owner or tenant concerned should appoint a prescribed registered contractor to carry out the removal of the supporting structure for solar PV systems through the simplified requirements under the Minor Works Control System of the BD to ensure compliance with the requirements of the Buildings Ordinance.
- (ii) If the building works involved are not designated exempted building works or minor works items, the landlord or tenant concerned should appoint an authorized person to submit building plans to the BD in accordance with the Buildings Ordinance. The works should be commenced only after obtaining prior approval for and consent to the commencement of works from the BD.
- (iii) Installation of solar PV system as a standalone facility on vacant land for the Feed-in Tariff (FiT) Scheme would be regarded as “Public Utility Installation” which is always permitted in “Commercial”, “Government, Institution or Community”, “Industrial”, “Industrial (Group D)”, “Open Storage”, “Other Specified Uses” annotated “Business” and “Other Specified Uses” annotated “Industrial Estate” zones. Planning application is required for standalone solar PV system for FiT Scheme in areas where “Public Utility Installation” is a Column 2 use under the statutory plan concerned. The Assessment Criteria for Considering Applications for Solar Photovoltaic System made under Section 16 of the Town Planning Ordinance is available at the following hyperlink:  
[https://www.info.gov.hk/tpb/en/forms/Technical\\_Doc/Revised\\_Assessment\\_Criteria\\_Eng\\_\(7.10.2022\).pdf](https://www.info.gov.hk/tpb/en/forms/Technical_Doc/Revised_Assessment_Criteria_Eng_(7.10.2022).pdf)

- (iv) The wavier application fee for setting up solar PV systems on private agricultural land is set according to the established fee level of the LandsD, and the fee for individual site depends on factors like its size, location and the land lease terms. Therefore, it is difficult to generalise the fees required.

## 5.5 Installation of Solar PV Systems in Open Car Parks by the Private Sector

- (i) The ENB (now renamed as Environment and Ecology Bureau (EEB)) and the Development Bureau (DEVB) introduced a set of measures to facilitate the installation of solar PV systems in open car parks by the private sector in April 2022. Upon meeting the specified requirements and obtaining the policy support of the EEB, members of the private sector may install solar PV systems (including the supporting structure(s)) not exceeding three metres in height in car parking spaces of larger-scale open car parks located at the on-grade areas or on the main roofs of non-domestic premises. For details of the facilitation measures, please refer to the EMSD's HKRE Net:

[https://re.emsd.gov.hk/english/gen/facilitation\\_measures/open\\_car\\_park.html](https://re.emsd.gov.hk/english/gen/facilitation_measures/open_car_park.html)

## 5.6 Other Items

The EMSD maintains a list of Solar Energy Generation Installation Contractors for internal use. If the public would like to obtain the list for reference, please refer to the EMSD's HKRE Net:

The list of Solar Energy Generation Installation Contractors

[https://re.emsd.gov.hk/english/fit/seg/installation\\_contractor.html](https://re.emsd.gov.hk/english/fit/seg/installation_contractor.html)

# 6 Regulatory Requirements





## 6. Regulatory Requirements

### 6.1 Requirements in relation to Electricity Safety

- (i) Installation of solar PV Systems involved low / high voltage electrical installation is electrical work. In accordance with the Electricity Ordinance (EO, Cap. 406), the electrical work shall be carried out by a REC, and the REW employed by the REC should follow the technical guidelines of the CoP to carry out the related electrical work. In addition, the solar PV system shall comply with the relevant technical requirements of the EO and the CoP.
- (ii) In accordance with section 21 of the EO (Cap. 406), the owner of a generating facility that is used to produce electricity at low voltage or high voltage shall register it with the Director of Electrical and Mechanical Services (the Director) unless it:
  - (a) forms part of an electrical installation that requires a periodic test certificate (i.e. WR2) to be submitted to the Director under the EO;
  - (b) only supplies electricity to an electrical installation that is owned by the owner of the generating facility;
  - (c) is used on an aircraft;
  - (d) is used on a watercraft;
  - (e) is used on a hovercraft;
  - (f) is on a land vehicle where the facility is not connected to a wiring installation outside the vehicle; or
  - (g) is used in construction work as defined and regulated under the Factories and Industrial Undertakings Ordinance (Cap. 59)

Therefore, in a general village house or a building, if the REPS connected with power grid which forms part of an electrical installation of maximum demand smaller than 100A (not belong to an electrical installation that requires a periodic test certificate (WR2)), the owner of the REPS shall register the facility with the Director. The registration fee is \$640. The application form and other details can be found on the EMSD's website. ([https://www.emsd.gov.hk/en/electricity\\_safety/how\\_to\\_apply/registration\\_for\\_generating\\_facility/index.html](https://www.emsd.gov.hk/en/electricity_safety/how_to_apply/registration_for_generating_facility/index.html)).

## 6.2 Requirements in relation to Building Safety

(i) NTEH

NTEH are generally designed and built in compliance with the exemption criteria stipulated under the Buildings Ordinance (Application to New Territories) Ordinance (Cap. 121) which thus qualify them from exemption from certain provisions of the Buildings Ordinance (Cap. 123) and its subsidiary regulations, including the need for obtaining prior approval for and consent to the commencement of works from the BD. The BD has no record of the building developments and approved plans of the buildings. Since design, construction and conditions of individual NTEH are different, owners should consult building professional before considering installation of solar PV systems in NTEH and such facilities should not adversely affect structural safety of the building.

(ii) Private Buildings

For installation of supporting structure for solar PV system, detailed requirements are given in item 5.3(i), (ii) and (v).

Generally speaking, the erection of supporting structure for solar PV system should comply with the building safety requirements under the Buildings Ordinance and its allied regulations. The solar PV system and associated supporting structure should not cause overloading to the building and not affect the means of escape in case of fire. If the structure is erected on the roof which has been designed as a refuge floor, adequate refuge area should be maintained and proper fire separation should be allowed. In addition, the structure should not affect the drainage and waterproofing system on the roof.

Furthermore, owners and occupants are also advised to check any restrictions as may be stipulated in the Deed of Mutual Covenant, and to obtain the agreement from the Owners' Corporation, Mutual Aid Committee or the management company prior to the carrying out of the installation works for solar PV systems.

### 6.3 Recommendations in relation to Fire Safety

6.3.1 For installation of solar PV systems in private buildings, the fire safety recommendation is as follows:

Dry powder type fire extinguisher(s) should be provided.

6.3.2 For installation of solar PV systems in vacant land, the fire safety recommendation is as follows:

Dry powder type fire extinguisher(s) should be provided.

6.3.3 For installation of solar PV systems in NTEH (commonly known as village houses), the fire safety recommendations are as follows:

- (i) Should the subject NTEH have a side(s) facing well-defined Emergency Vehicular Access (EVA) / main road / village passageway, etc., at least one side of the roof facing such passageway should be free from installation of PV panels by maintaining a setback of not less than 1050mm\* (measured from the edge of parapet wall). In addition, a passageway with a width of not less than 1050mm\* leading from the roof exit to that side of the aforementioned roof should be maintained.
- (ii) If the NTEH is not facing well-defined EVA / main road / village passageway, at least one side of the roof not abutting adjoining building should be free from installation of PV panels by maintaining a setback of not less than 1050mm\* (measured from the edge of parapet wall). In addition, a passageway with a width of not less than 1050mm\* leading from the roof exit to that side of the aforementioned roof should be maintained.
- (iii) Dry powder type fire extinguisher(s) should be provided.

\*Reference is made to Table B2, Part B, Code of Practice for Fire Safety in Buildings 2011

([https://www.bd.gov.hk/doc/en/resources/codes-and-references/code-and-design-manuals/fs2011/fs2011\\_full.pdf](https://www.bd.gov.hk/doc/en/resources/codes-and-references/code-and-design-manuals/fs2011/fs2011_full.pdf))



## 6.4 Requirements in relation to Business Registration and Tax Return

- (i) Pursuant to the requirements under the Business Registration Ordinance (Cap. 310) and Inland Revenue Ordinance (Cap. 112) (IRO), persons (including individuals, corporations and partnerships) participating in the FiT Scheme are required to apply for business registration in respect of the FiT business, report the FiT payments they receive and pay profits tax on such profits. To simplify the relevant procedures in order to facilitate the public's participation, the Government has introduced legislative amendments to exempt individuals installing renewable energy systems at their residential premises from the requirement of applying for business registration in respect of the FiT business and the payment of profits tax in respect of the FiT payments received through the participation in the FiT Scheme, subject to the fulfilment of the exemption conditions. The relevant subsidiary legislations, the Exemption from Profits Tax (Feed-in Tariff Scheme) Order (the Exemption Order) and the Business Registration (Amendment) Regulation 2019 (the Amendment Regulation), have already come into force. The brief and the provisions of the Exemption Order and the Amendment Regulation can be found at the Legislative Council's webpage: [https://www.legco.gov.hk/yr19-20/english/subleg/brief/2019In190\\_191\\_brf.pdf](https://www.legco.gov.hk/yr19-20/english/subleg/brief/2019In190_191_brf.pdf).
- (ii) Generally speaking, individuals who install renewable energy systems at their residential premises (not in the course of any business other than the FiT business) and participate in the FiT Scheme are not required to apply for business registration nor report FiT payments in their tax returns. For individuals who do not fulfil the exemption conditions in the Exemption Order and the Amendment Regulation, any corporations or partnerships participating in the FiT Scheme in the course of a business, or participating in the FiT Scheme for profit purposes, they are required to apply for business registration for their FiT business and report the FiT payments in their tax returns.
- (iii) To encourage the business community to adopt environmental protection installations, since the year of assessment 2008-09, pursuant to Section 16I of the IRO, profits tax deduction has been allowed for the capital expenditure incurred in relation to environmental protection facilities. As mentioned in the 2018-19 Budget, the Government has already further enhanced tax concessions for capital expenditure incurred by enterprises in procuring eligible energy efficient building installations and renewable energy systems by allowing the capital expenditure so incurred to be deductible in full in one year instead of five years. Details can be referred to the press release issued by the Government on 1 March 2018: <http://www.info.gov.hk/gia/general/201803/01/P2018030100661.htm?fontSize=1>.



# Operation and Maintenance



## 7. Operation and Maintenance

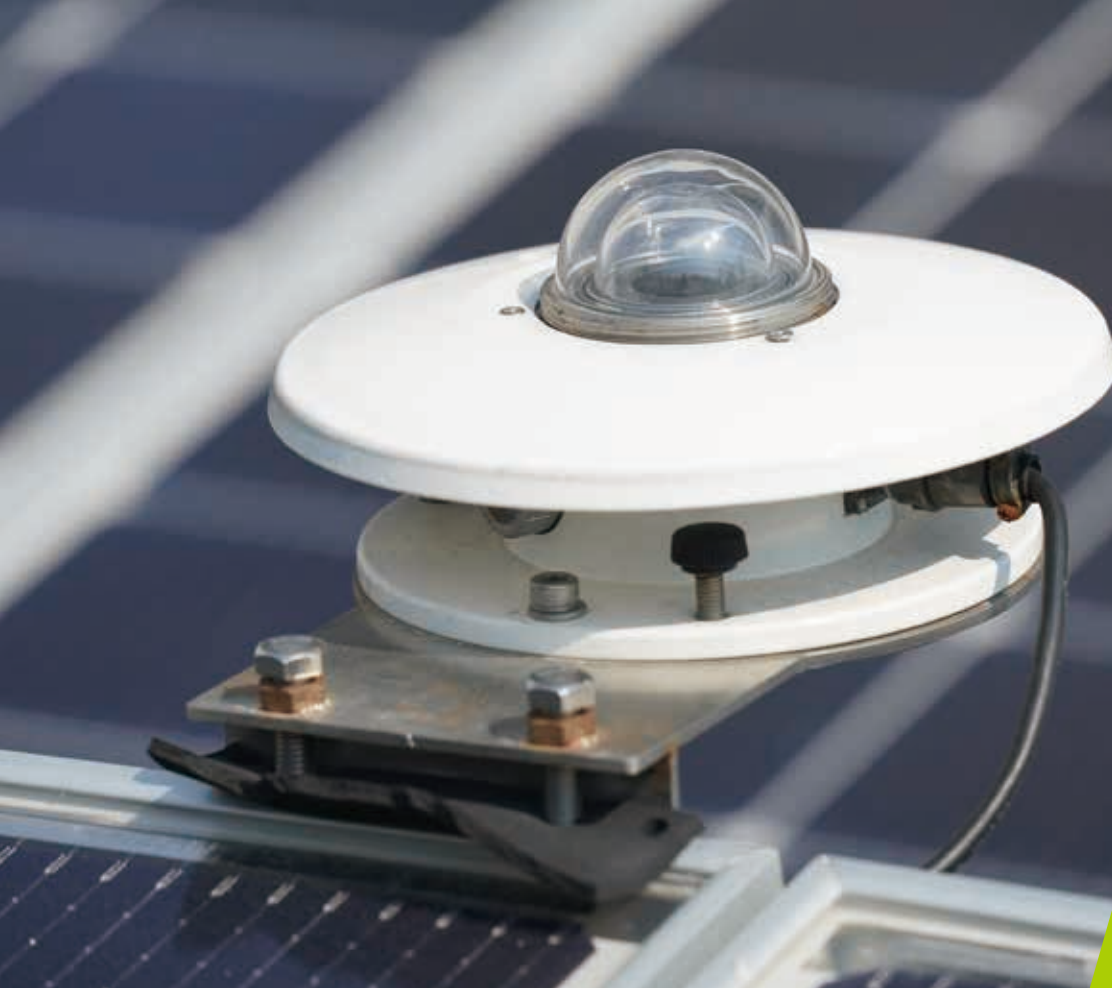
- 7.1 Solar PV system is classified as a generating facility. The Owner shall comply with the maintenance requirement of generating facility under the Electricity Ordinance and its subsidiary regulations.
- 7.2 The owner of a solar PV system should follow the operation and maintenance instructions as specified in the installation guidelines and technical manuals provided by the manufacturer / supplier. The owner should properly store and keep all the technical documents for future reference.
- 7.3 The owner should arrange regular inspections and routine maintenance and functional check of the solar PV system including solar PV panels, inverters and their supporting structure in accordance with the technical documents provided by the manufacturer / supplier.
- 7.4 Dust or dirt on the surface of solar PV panels reduce the amount of electricity generated. It is recommended that the owner should perform simple cleaning work on a regular basis.
- 7.5 Regarding the electrical work in relation to the solar PV system (including inspection, maintenance, repair of relevant fixed electrical installation etc.), the owner should employ a REC to carry out the work, and the REW employed by the REC should follow the technical guidelines of the CoP to carry out the relevant electrical work.
- 7.6 It is recommended that the public may request contractors to offer at least one-year defect liability period (DLP) after project completion on the terms of the solar PV project contract. After the expiry of the DLP, the public may decide whether to entrust the original contractor or hire another new contractor to provide the maintenance service.
- 7.7 The public should also note that under section 22 of the Electricity Ordinance (Cap. 406), the owner of a registered generation facility shall maintain the generation facility in continuous safe working order, and display at the facility a notice showing the name and the registration number of the REC employed for maintaining the facility in continuous safe working order.
- 7.8 PV system owners, operators, maintenance contractors, property management managers and engineering staff can refer to the "Handbook on Design, Operation and Maintenance of Solar Photovoltaic Systems" which recommends the best system design and operational practices in principle for solar PV systems. The handbook can be downloaded from the website of EMSD at <https://bestpractice.emsd.gov.hk/en/solar-photovoltaic-systems/>



**8**

# **Outline of Application Procedures of Feed-in Tariff Scheme**





## 8. Outline of Application Procedures of Feed-in Tariff Scheme

- 8.1 While the requirements applicable to a particular RE system would depend on individual circumstances, a flowchart of the key application procedures involved in applying for FiT Scheme is attached in Appendix 3 for reference.





# Local and Overseas Standards





## 9. Local and Overseas Standards

9.1 A list of local and overseas standards, codes and practical guidelines relating to solar PV systems is given in Appendix 4 as reference.





# 10 Enquires



## 10. Enquires

### **EMSD RE Helpdesk**

Tel.: 6395 2930

Fax: 2890 6081

E-mail: [eepublic@emsd.gov.hk](mailto:eepublic@emsd.gov.hk)

Website: [re.emsd.gov.hk](http://re.emsd.gov.hk)

### **CLP Power Hong Kong Limited**

Tel.: 2678 0322

Fax: 2678 6368

E-mail: [csd@clp.com.hk](mailto:csd@clp.com.hk)

Website: [www.clp.com.hk](http://www.clp.com.hk)

### **The Hongkong Electric Co., Limited**

Tel.: 2510 2701

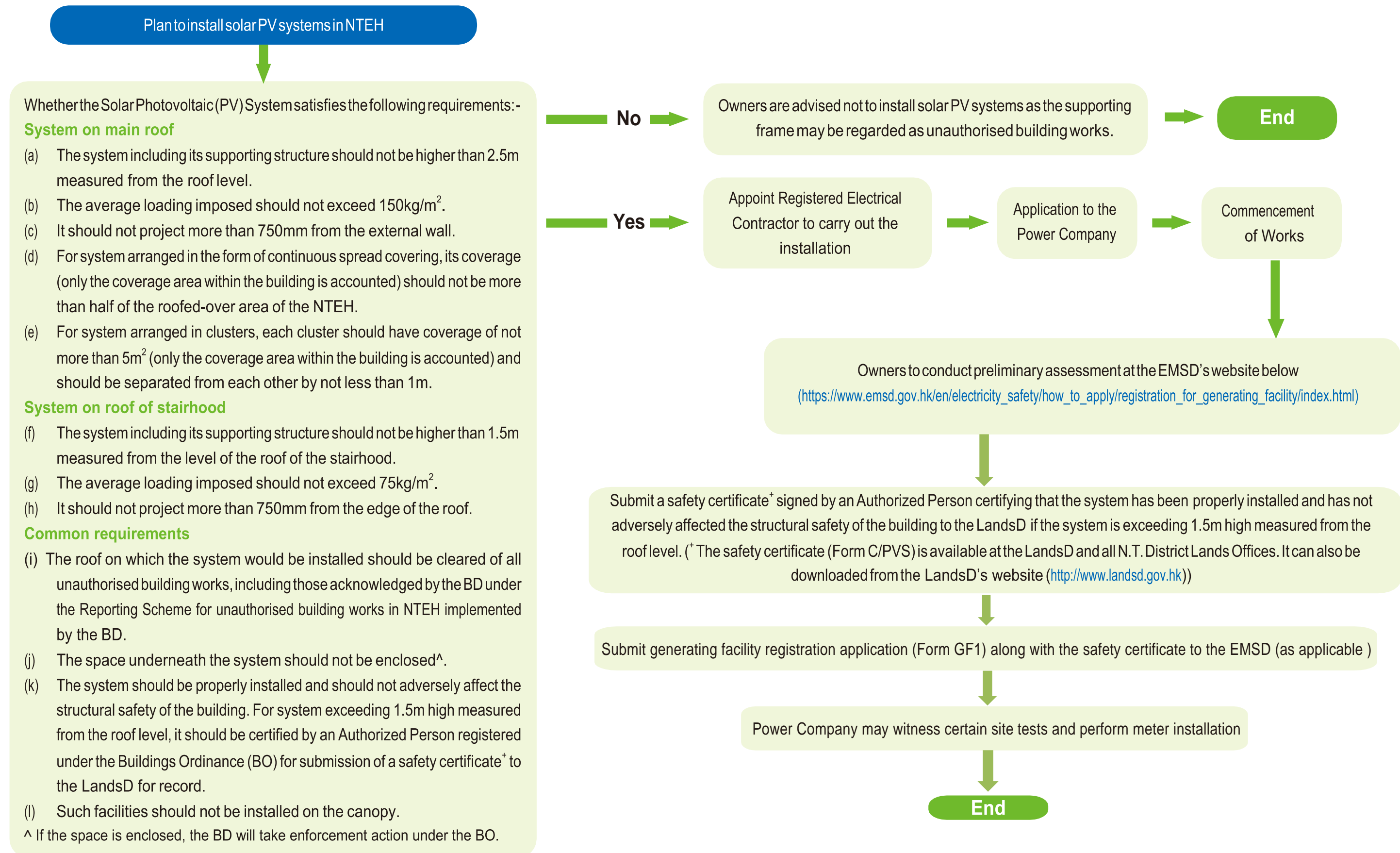
E-mail: [RE@hkelectric.com](mailto:RE@hkelectric.com)

Website: [www.hkelectric.com](http://www.hkelectric.com)

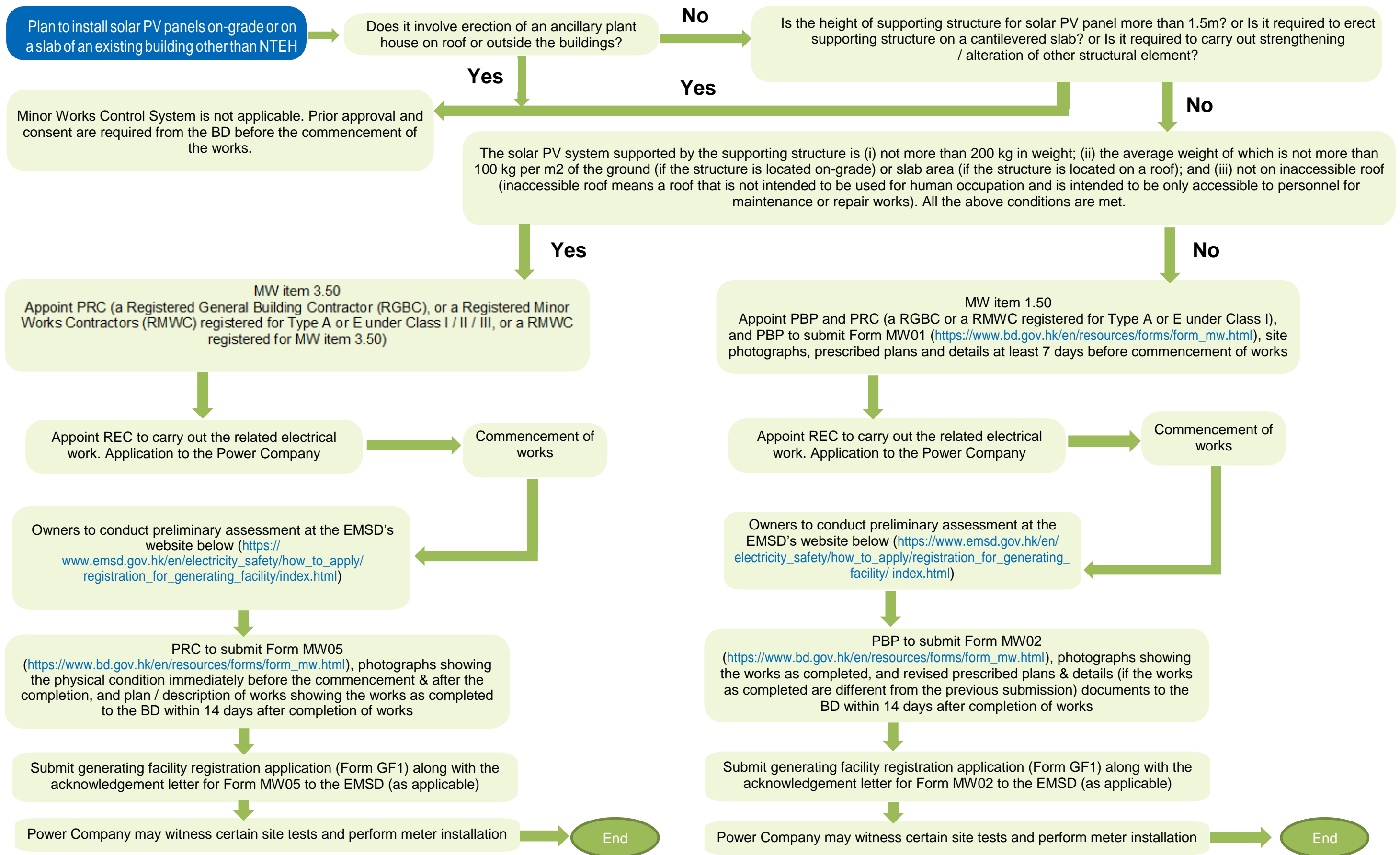


# Appendices



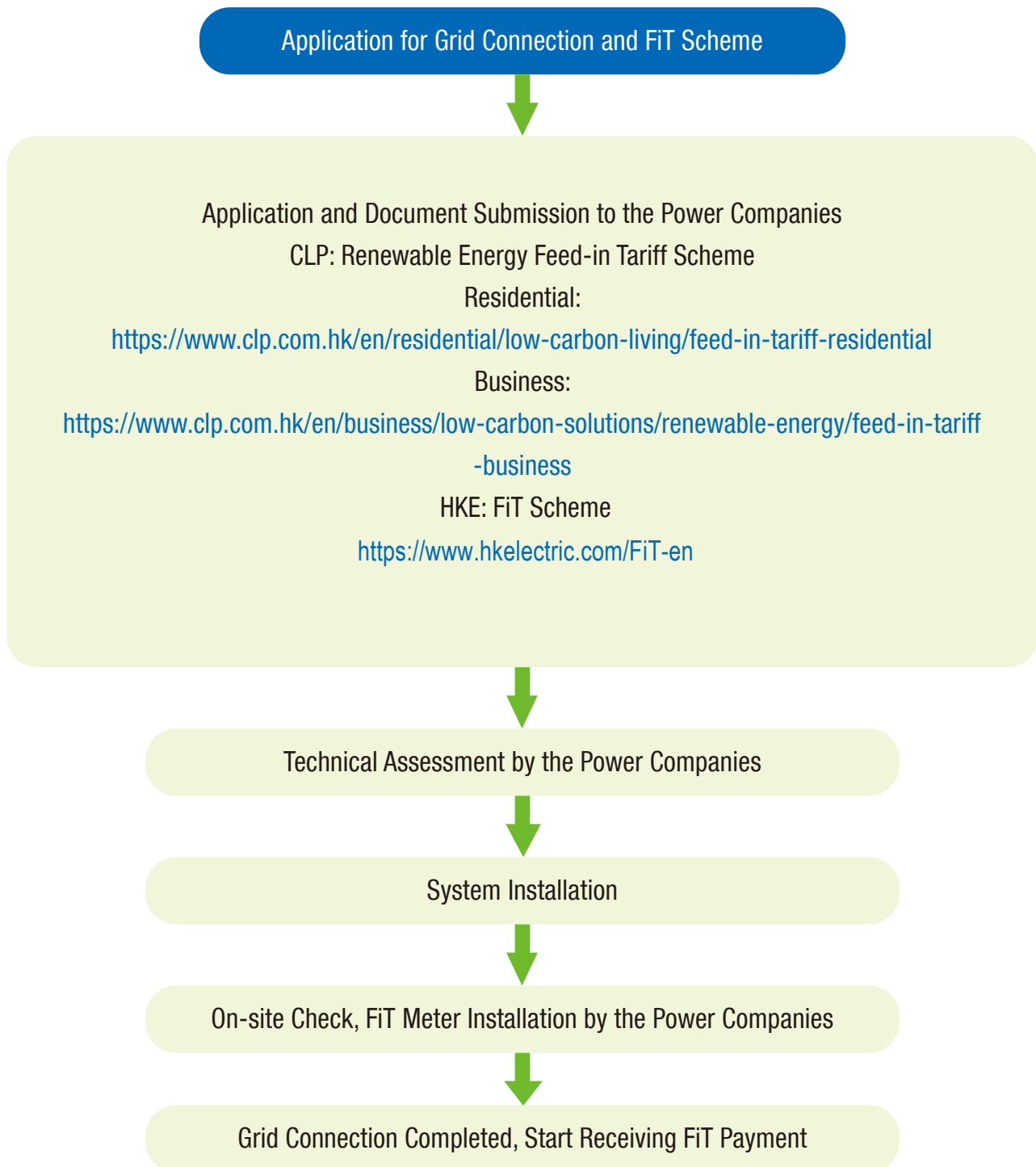


Flow Chart for Installation of Solar Photovoltaic Systems in Private Buildings





## Flowchart on key application procedures involved in applying for Feed-in Tariff Scheme



Please refer to the power companies' websites or contact them for further information:

CLP hotline: 2678 0322

HKE hotline: 2510 2701

**Local Codes and Rules**

Title
Code of Practice for the Electricity (Wiring) Regulations, EMSD
Supply Rules of The Hongkong Electric Company, Limited
Supply Rules of CLP Power Hong Kong Limited

**Solar Photovoltaic Modules and Panels:**

Standards/Guides/Recommendations	Title
IEC 61215	Terrestrial Photovoltaic (PV) Modules - Design Qualification and Type Approval
IEC 61730	Photovoltaic (PV) Module Safety Qualification
UL 1703 of the United States	Standard for Flat-Plate Photovoltaic (PV) Modules and Panels

**Inverters and Isolation Transformers:**

Standards/Guides/Recommendations	Title
IEC 62109	Safety of Power Converters for Use in Photovoltaic Power Systems
UL 1741 of the United States	Standard for Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Resources
BS EN IEC 61558 of the United Kingdom, Europe and IEC	Safety of Transformers, Reactors, Power Supply Units and Combinations Thereof

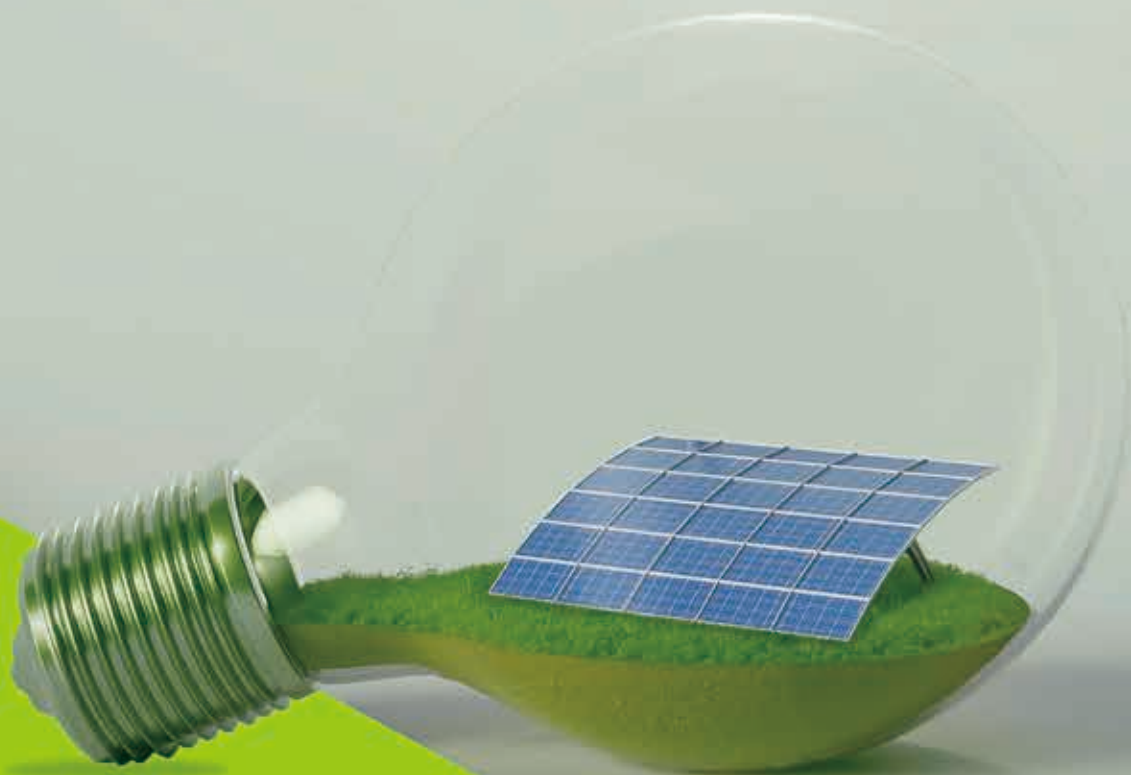
### Grid Connection of Photovoltaic Systems:

Standards/Guides/Recommendations	Title
IEC 60364-7-712	Low Voltage Electrical Installations - Part 7-712: Requirements for Special Installations or Locations - Solar Photovoltaic (PV) Power Supply Systems
IEC 61724	Photovoltaic System Performance
IEC 61727	Photovoltaic (PV) Systems - Characteristics of the Utility Interface
IEC 62116	Utility-interconnected Photovoltaic Inverters - Testing Procedure of Islanding Prevention Measures
IEC 62446	Photovoltaic (PV) Systems - Requirements for Testing, Documentation and Maintenance

### Major Chinese National Standards (Guobiao) for Certification of Crystalline PV Modules and Amorphous PV Modules:

Standards/Guides/Recommendations	Title
GB/T 9535-1998	Crystalline Silicon Terrestrial Photovoltaic (PV) Modules - Design Qualification and Type Approval
GB/T 18911-2002	Thin-film Terrestrial Photovoltaic (PV) Modules - Design Qualification and Type Approval





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