

香港特別行政區政府
The Government of the Hong Kong Special Administrative Region

政府總部
發展局
工務科



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**Development Bureau
Technical Circular (Works) No. 13/2020**

**Timely Application of Temporary Electricity and
Water Supply for Public Works Contracts
and
Wider Use of Electric Vehicles in Public Works Contracts**

Scope

This Circular promulgates the policy on timely application of temporary electricity and water supply for public works contracts as well as wider use of electric vehicles (EVs) in public works contracts. .

Effective Date

2. This Circular shall take immediate effect.

Effect on Existing Circulars and Circular Memoranda

3. This Circular has no effect on existing circulars and circular memoranda.

Background

4. In response to the carbon emission reduction target¹ as specified in the “Hong Kong Climate Action Plan 2030+”², the Construction Industry Council (CIC) in end 2019 completed the “Consultancy Study on Improving the Environmental Performance of the Hong Kong Construction Industry”. The study recommends, inter alia, timely provision of electricity to construction sites and promoting wider use of electric equipment.

5. Under the prevailing practice, temporary electricity and water supply to a public works site is mostly applied by the contractor after the award of the contract. However, it may take six to nine months for utility undertakings to complete the installation/connection works (if application of excavation permits is required).

6. Timely provision of electricity could help reduce carbon emission³ and noise pollution arising from the operation of diesel generators at the beginning of the construction works, while timely provision of water supply could not only improve the personal hygiene but also reduce pollution. All these are environmental favourable measures.

7. Besides, the Government has been promoting a wider use of EVs through various incentive schemes. EVs have no tailpipe emissions and are efficient in converting energy from the grid to power at the wheels. Adopting EVs in lieu of conventional vehicles can help improve roadside air quality and reduce carbon emissions. With the advancement of automotive technology, a modern EV can drive

¹ Hong Kong’s carbon emissions reduction targets are to reduce carbon intensity (carbon emissions per unit of gross domestic project) by 65% to 70% by 2030 using 2005 as baseline; these reduction figures are equivalent to 26% to 36% absolute reduction.

² The “Hong Kong Climate Action Plan 2030+” was issued by the Environment Bureau.

³ Based on information provided by works departments, for contracts with sum exceeding \$1 billion, an average of about 20,000 litres of diesel per contract would be consumed by power generators to provide electricity to resident site staff’s site accommodation before the availability of power supply from a power company.

more than 200 km for real-world driving⁴ after fully charged. After taking account of the deterioration of battery capacity with time (adopting a conservative assumption of dropping 30% within the general life-span of a contract car), the EV can drive 140 km after a full charge, which will still be suitable for use in public works contracts in general. Timely provision of electricity to construction sites can facilitate the use of EVs in public works contracts.

Policy

8. All public works contracts, including design and build contracts and term contracts, the tender invitations of which are issued **on or after 1 February 2021**, shall observe the requirements as set out in this Circular.

9. Should there be genuine difficulties in complying with some or all of the requirements, approval for exemption should be obtained from the subject D2 or above officer of the managing works department and the respective justifications should be properly documented.

Timely Provision of Temporary Electricity and Water Supply

10. At the detailed design stage, project team should timely apply for the temporary electricity and water supply with a target that the necessary cables/water mains laying works could be completed before the commencement of the works contract⁵. In connection to such applications, the project team needs to assess the electricity load⁶ and water supply required for meeting at least the initial operation of the site⁷. In determining the application time, the project team should make a best estimate on the commencement date of the works contract concerned taken into account the time required to obtain the funding approval.

⁴ Taking into account of the hilly terrain in Hong Kong and the need to have air-conditioning during summer time.

⁵ Provision of temporary electricity and water supply is to procure “service” from utility undertakings and not part of the project works, with a view to facilitating a project to start work on site right after funding approval. Hence, it should be considered as a pre-construction activity which could be funded under a Cat. D item or the relevant Cat. A item.

⁶ As advised by works departments and power companies, electricity load of less than 400 ampere should be sufficient for a construction site at its initial stage. It is noted that site-specific transformer would be required if the electricity load requirement is above 400 ampere.

⁷ The ‘site’ should also include both the site accommodation and depots where applicable.

11. In the application process, the project team should be mindful that the electric cables/water mains are laid to the site boundary such that no excavation permit would be required for extending the cables/water mains into the site. As an illustration, the cables could be arranged to be laid to the back of the footpath or pavement adjoining to the site with spare part of suitable length embedded to allow the contractor selecting a suitable location to install the meter afterwards. After the contract is awarded, the contractor could approach relevant power company/Water Supplies Department for completion of the remaining pillar box and water meter installations. Detailed workflow is at **Appendix A** for reference.

12. Notes to Tenderers and Particular Specification drawing tenderer’s attention to the application of temporary electric cables and/or water mains in close proximity of the site by the Employer are at **Appendix B**.

Wider Use of Electric Vehicles

13. The project team should specify the use of EV(s) in each public works contract in accordance with the minimum number as tabulated below.

Number of contract vehicles supplied in a public works contract	Minimum number of EVs (5-seater or 7-seater) to be specified
2-3	1
4-5	2
6 or above	3

14. The project team should specify the installation of a designated medium-speed charger⁸ for each EV as a standard provision at the site accommodation of each public works contract. Medium-speed charger, as compared with standard charger, can significantly shorten the charging time and it would take only about 7 to 8 hours to charge an EV from empty to full. Hence, it is expected that charging of EV during day-time is generally not required. The Particular Specification (at **Appendix C**) for provision of EVs and charging facilities shall be included in the relevant public works contracts.

⁸ With electricity supply via 220V single phase 32A to the standard IEC 62196 (or SAE J1772), or equivalent.

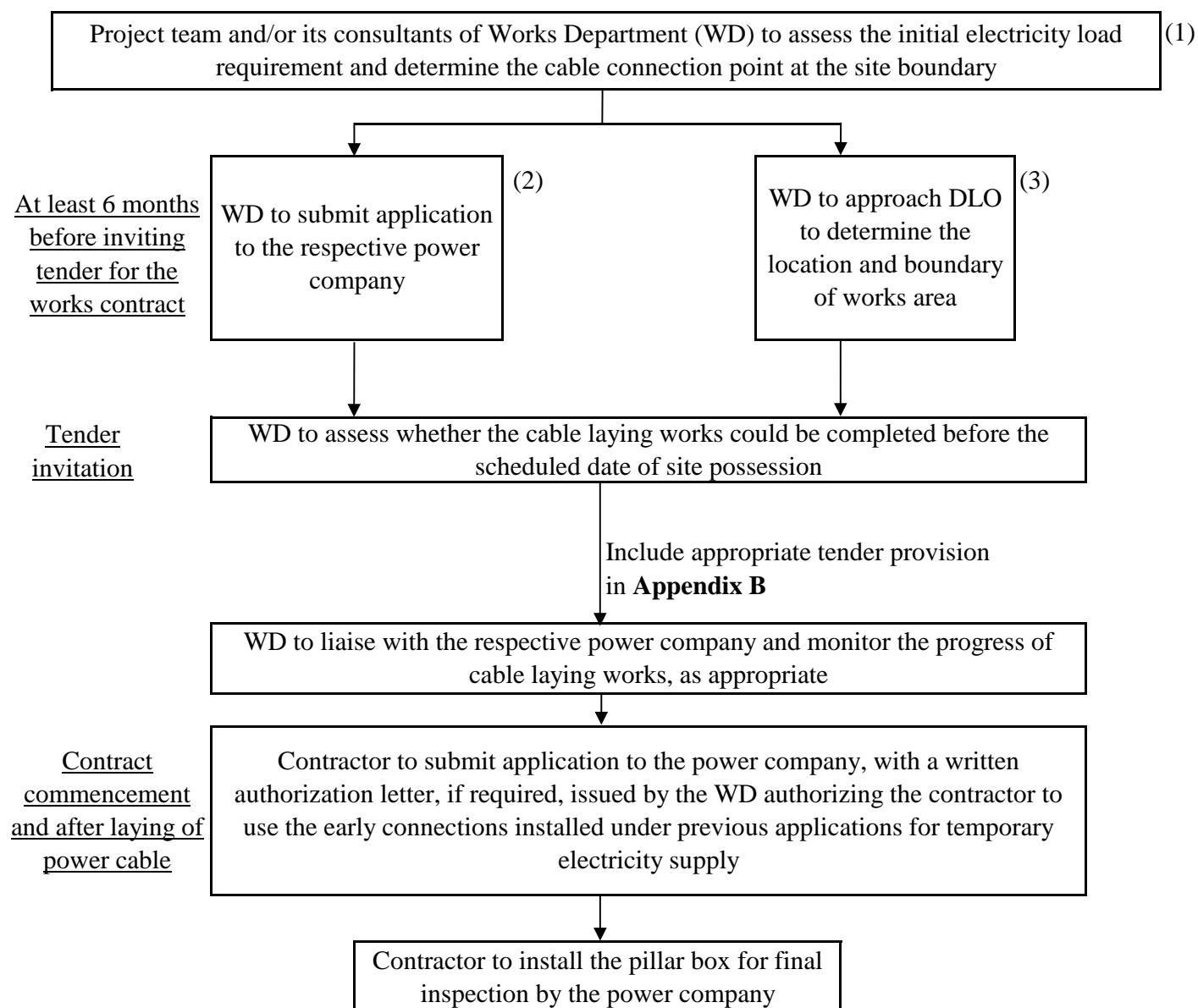
Enquiries

15. Enquiries on this Circular should be addressed to Chief Assistant Secretary (Works)5.

(LAM Sai-hung)
Permanent Secretary for Development (Works)

Detailed Workflow for Timely Provision of Temporary Electricity and Water Supply

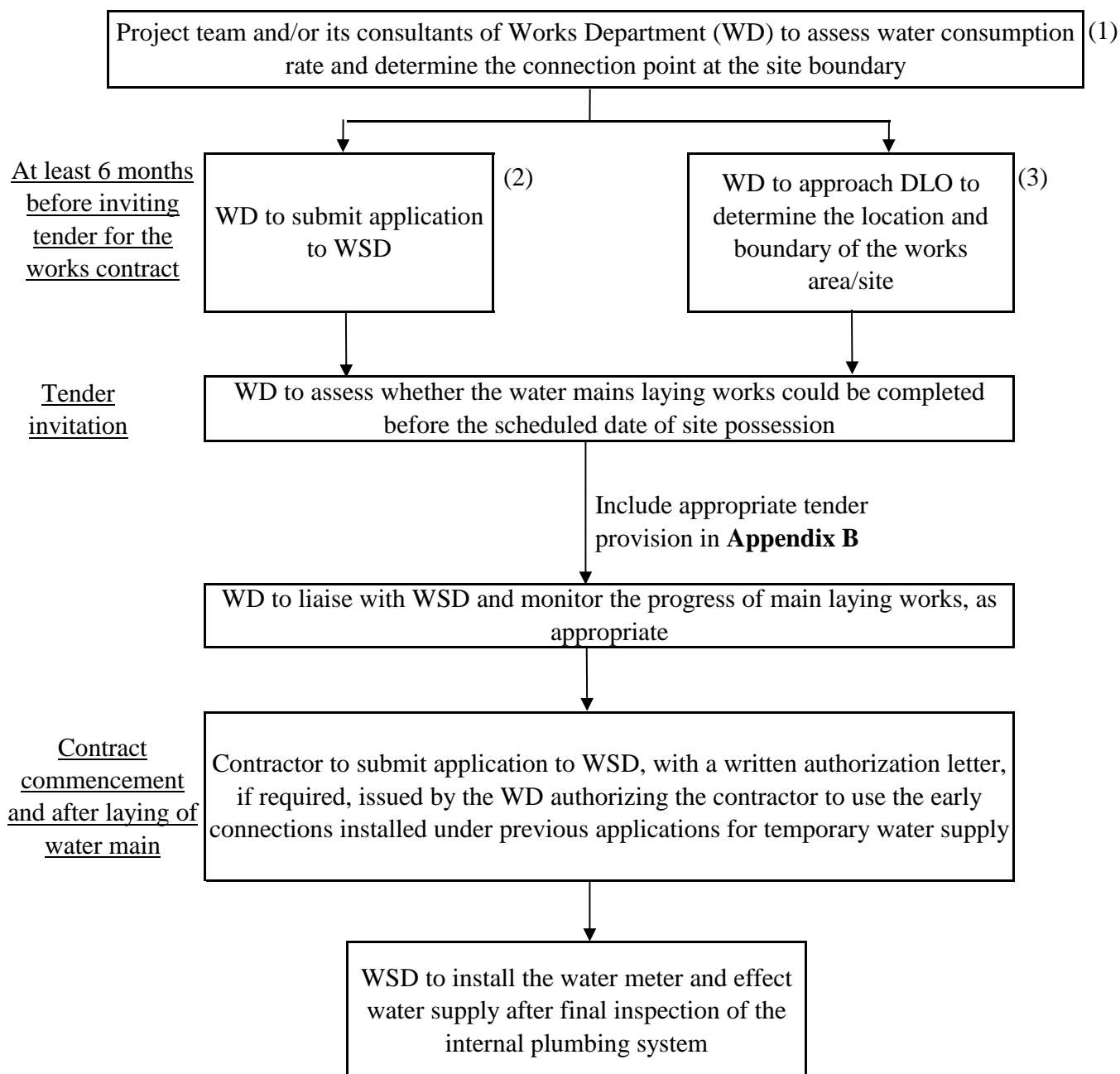
A1. Temporary Electricity Supply

Remarks:

- (1) The application for temporary electricity supply will include, at least, the following: (i) electricity load requirement; (ii) cable connection point; (iii) required date; and (iv) name and contact of department for payment of charge.
- (2) The fee of the temporary electricity application (including the cable laying works to be carried out by power company and the associated cable protection measures and the excavation permit fee) is to be funded by the project. WD should not proceed with the application if the risk of holding up funding approval by the Finance Committee of the LegCo is assessed to be high.
- (3) To avoid abortive site works, WD should allow sufficient time to consult relevant B/Ds (in particular the extent of the boundary of works area/site) via DLO's temporary land allocation exercise prior payment to power company for commencing the cabling works.

Detailed Workflow for Timely Provision of Temporary Electricity and Water Supply

A2. Temporary Water Supply



Remarks:

- (1) The application for temporary water supply will include, at least, the following details: (i) size of the water mains; (ii) water mains connection points; and (iii) estimated water consumption rate.
- (2) The fee of the temporary water supply application (including the water mains connection works to be carried out by WSD and the excavation permit fee) is to be funded by the project. WD should not proceed with the application if the risk of holding up funding approval by the Finance Committee of the LegCo is assessed to be high.
- (3) To avoid abortive site works, WD should allow sufficient time to consult relevant B/Ds (in particular the extent of the boundary of works area/site) via DLO's temporary land allocation exercise prior payment to WSD for commencing the mains laying works.

**NOTES TO TENDERERS AND PARTICULAR SPECIFICATION
FOR PROVISION OF TEMPORARY ELECTRICITY AND WATER
SUPPLY TO WORKS AREA(S)/SITE(S)**

Version A – for situation that cables/water mains laying works for electricity and water supply are anticipated to be completed before the scheduled date of site possession

Notes to Tenderers

Tenderers' attention is drawn to Particular Specification Clause [X] on provisions of electricity and water supply to the Works Areas/Sites and the application arrangement for temporary electricity and water supply.

Particular Specification

- a) Electricity cables and water mains have been laid up to the boundary of Works Areas/Sites*, including WAXX and WAYY [*To insert identification of sites concerned*]. The electricity load and size of water mains to each of these Works Area/Site are set out in the tables below and the respective alignments and connection points are shown in Annex XX [*To insert layout plans showing the indicative cable and water main alignment*].

Works Areas/Sites*	Temporary Electricity Load (Amp)
e.g. WAXX	e.g. 400
e.g. WAYY	e.g. 400

Works Areas/Sites*	Size of Water Mains (Nominal Diameter in mm)
e.g. WAXX	e.g. 200
e.g. WAYY	e.g. 100

- b) For applying temporary electricity supply for the Works under the Contract, the Contractor shall submit an application to the respective power company, together with a written authorization letter, if required, issued by the Architect / Maintenance Surveyor / Engineer / Supervising Officer / Project Manager / Supervisor* authorizing the Contractor to make use of the relevant connections for temporary electricity supply to the Works Areas/Sites*.

- c) For applying temporary water supply for the Works under the Contract, the Contractor shall submit an application to the Water Supplies Department, together with a written authorization letter, if required, issued by the Architect / Maintenance Surveyor / Engineer / Supervising Officer / Project Manager / Supervisor* authorizing the Contractor to make use of the relevant connections for temporary water supply to the Works Areas/Sites*.

* Delete as appropriate

**NOTES TO TENDERERS FOR PROVISION OF TEMPORARY
ELECTRICITY CABLES AND WATER MAINS
TO WORKS AREA(S)/SITE(S) [Draft]**

Version B – for situation that cables/water mains laying works for electricity and water supply may not be able to be completed before the scheduled date of site possession

Notes to Tenderers

Tenderers should note that the Employer has already made applications and settled the respective fees for the supply of temporary electricity and water supply to the Works Areas/Sites, with details as more particularly set out in Annex [see below]. The electricity cable and water mains laying works are in progress.

Annex [...]

- a) Electricity cables and water mains under the applications by the Employer will be laid up to the boundary of Works Areas/Sites*, including WAXX and WAYY [To insert identification of sites concerned]. The electricity load and size of water mains to each of these Work Area/Site being applied for are set out in the tables below and the respective alignments and connection points are shown in Plan(s) XX [To insert layout plans showing the indicative cable and water main alignment].

Works Areas/Sites*	Temporary Electricity Load (Amp)
e.g. WAXX	e.g. 400
e.g. WAYY	e.g. 400

Works Areas/Sites*	Size of Water Mains (Nominal Diameter in mm)
e.g. WAXX	e.g. 200
e.g. WAYY	e.g. 100

- b) Upon completion of laying the electricity cables, the Contractor shall submit an application to the respective power company, together with a written authorization letter, if required, issued by the Architect / Maintenance

Surveyor / Engineer / Supervising Officer / Project Manager / Supervisor* authorizing the Contractor to make use of the relevant connections for temporary electricity supply to the Works Areas/Sites*.

- c) The Contractor shall submit an application ¹ to the Water Supplies Department, together with a written authorization letter, if required, issued by the Architect / Maintenance Surveyor / Engineer / Supervising Officer / Project Manager / Supervisor* authorizing the Contractor to make use of the relevant connections for temporary water supply to the Works Areas/Sites*.

* Delete as appropriate

¹ WSD accepts application from the Contractors before completion of water mains laying works.

**PARTICULAR SPECIFICATION FOR
PROVISION OF ELECTRIC VEHICLES AND ASSOCIATED
CHARGING FACILITIES**

*Transport for the Architect / Maintenance Surveyor / Engineer / Supervising Officer / Project Manager / Supervisor**

- (1) Within **X** week(s) from the commencement / starting date of the Works or other date as accepted by the Architect / Maintenance Surveyor / Engineer / Supervising Officer / Project Manager / Supervisor*, the Contractor shall supply **Y**¹ no(s). of 5-seater / 7-seater* electric vehicle(s).
- (2) The electric vehicle(s) shall comply with all relevant vehicle regulations in Hong Kong and shall be type-approved by the Transport Department. It shall be a battery powered automobile which is solely propelled by electric motor(s) and has zero tailpipe emission. All power shall be derived from the on-board battery pack. The vehicle shall be a passenger car with at least four (4)-doors equipped with a fully automatic transmission and an air-conditioning system, and shall have a passenger seating capacity of not less than four / six* (excluding the driver). Without operation of the air-conditioning system, the maximum driving range shall not be less than 280 km tested under the New European Driving Cycle or relevant international/national driving test requirements. The capacity of all batteries/battery packs to provide power for propelling the electric vehicle(s) shall not be less than 38 kWh.
- (3) The electric vehicle(s) shall be equipped with on-board charger with rated capacity not less than 6kW. All necessary cables/accessories/couplers shall be capable of charging the vehicle battery pack with a medium charging via 220V single phase electric vehicle charger with output power

¹ **Note to Works Departments:**

The minimum number of electric vehicles to be specified in each public works contract, including design and build contract and term contract, is as follow -

<i>Number of contract vehicles supplied in a public works contract</i>	<i>Minimum number of 5-seater or 7-seater electric vehicle(s) to be specified</i>
<i>2-3</i>	<i>1</i>
<i>4-5</i>	<i>2</i>
<i>6 or above</i>	<i>3</i>

of not less than 7 kW. All necessary cables, accessories and couplers shall comply with IEC 62196 (or SAE J1772).

- (4) The EVs shall be in good roadworthy conditions and not more than two years old when first brought to Site. Apart from the normal free warranty period of the whole vehicle, the minimum remaining free warranty period of the batteries/battery packs shall not be less than 72 months or 120 000 km, whichever comes earlier. The rechargeable battery level shall be guaranteed to not less than 70% of its original capacity at the end of the free warranty period of the batteries / battery packs as stipulated in Clause (2).
- (5) For each electric vehicle, the Contractor shall provide and install an electric vehicle charger with output power not less than 7kW via 220V single phase supply in the site / depot*. The electric vehicle charger shall be equivalent to or better than a medium charger complying with IEC 61851, fitted with IEC 62196 type 2 socket (or SAE J1772, fitted with SAE J1772 socket) and the latest requirements issued by the Electrical and Mechanical Services Department include but not limited to the “Technical Guidelines on Charging Facilities for Electric Vehicles”. Copy of the guidelines can be found at:

https://www.emsd.gov.hk/en/electricity_safety/publications/guidance_notes_guidelines/index.html

* Delete as appropriate