GUIDELINES ON MINIMUM ELECTRIC VEHICLE CHARGING PROVISIONS IN DEVELOPMENTS

Contents

1. Minimum Electric Vehicle (EV) Charging Provisions in Developments

1. To future-proof developments to support the charging needs of a largely electrified vehicle population in steady state, developments that undergo major building or electrical works will be required to provide for EV charging under the Electric Vehicles Charging Act (EVCA). This requirement will apply to developers of specified building works, and development owners of specified electrical works.

1.1. Requirements for Passive and Active Provisions

2. The minimum EV charging provisions required will comprise:

   i. Electrical infrastructure necessary to support current as well as future charging needs of the EV population in Singapore (also known as ***'Passive Provisions'***); and

   ii. EV charging points to support current charging needs of the EV population in Singapore (also known as ***'Active Provisions'***).

1.1.1. Passive Provision

3. Passive Provision refers to the installation of the necessary electrical infrastructure within the development (i.e. at the consumer switch room(s) and/or substation(s)) to supply power exclusively to EV charging points that are installed within the development, as well as EV charging points to be installed in future. The minimum electrical load (MEL) or apparent power (in kVA) required for the passive provision will be determined based on the formula below:

MEL = 1.3kVA x (Total No. of Parking Lots in the Development)

Where:

- *MEL is the minimum electrical load [in kVA]*
- *Total number of parking lots refers to both cars and motorcycle parking lots*

1.1.2 Active Provision

4. Active provision refers to the installation of EV charging points within the development that are fully wired and ready for use by EVs. Developments can choose to deploy a mix of charging points with different power ratings, depending on user needs. The total electrical load or power of all EV charging points installed must be **at least 20% of the MEL required.**

For this purpose, conversion from apparent power (kVA) to actual power (kW) must be done using a power factor of 0.85.

Actual Power (kW) = Apparent Power (kVA) x 0.85

5. The ***minimum number of EV charging points*** to be provided in the development, N, can be derived using the formula below:

Total power of all EV charging points installed ≥ 0.2 x (MEL x 0.85)

Where:

- MEL is the minimum electrical load [in kVA]

6. Please refer to **Annex A** for worked examples illustrating how the formulae for the passive and active provisions are applied.

1.2. Specified Building and Electrical Works

7. Developments undergoing the following specified building or electrical works will be required to provide EV charging infrastructure:

Group A Major Building Works[1]	Group B Major Electrical Works[2]
Building works involving: i. Erection or re-erection of a building; or ii. Increase in the approved gross floor area (GFA) ≥ 50%	Electrical works involving an increase that result in an approved electrical load of >280kVA

8. The requirements for active and passive provisions do not apply to the following categories of developments:

i. Any building or electrical works carried out by or on behalf of the Government on State land;
ii. Any building or electrical works carried out by or on behalf of any public authority on land owned by that public authority; or

[1] Building works means (a) the erection or extension of a building or (b) the alteration, addition or repair of a building, but excludes building works for a temporary building or the occupation of any temporary building,

[2] Electrical work has the meaning given by section 2(1) of the Electricity Act 2001

iii. Any building or electrical works carried out in connection with any development specified in Part 4 of the Schedule to the Parking Places (Provision of Parking Places and Parking Lots) Rules 2018;

9. The requirement for active provision does not apply to any building or electrical works that would result in fewer than 8 parking lots within the parking place of the development.

2. Submissions for Building Works

10. Upon the commencement of the EVCA, LTA's technical clearance for EV charging will be required for the developer to apply for the Temporary Occupation Permit (TOP) and overall Certificate of Statutory Completion (CSC) from BCA.

2.1. Building Plan (BP) Stage

11. Developers are required to submit proposals and plans for the active and passive provisions to be provided in the development for LTA's approval, before any EV charging installation works are carried out.

12. **The application can be made via the OneMotoring website** (https://onemotoring.lta.gov.sg/), which also contains a step-by-step guide. [3] The proposals and plans submitted must be endorsed by a Qualified Person, who is either registered as an architect with the Board of Architects (BOA) or a professional engineer with the Professional Engineers Board (PEB), with a valid practising certificate issued by BOA or PEB. A submission fee of $500 will be required.

13. The following information/documents will be required for the submission:

(i) Details of electrical load and charging points provided
(ii) URA's planning permission approval
(iii) Carpark plan – annotated with locations & power ratings of charging points
(iv) Authorization letter – if submitting on behalf of developer

14. LTA will review the submission and may request for further clarification where necessary. Applicants may expect a response from LTA requesting for clarifications, if any, within 1 month from the date of submission.

15. If a clarification request (CR) is issued, the developer will be required to address the CR and make a re-submission via OneMotoring.[4]

16. After the proposals and plans are approved, an approval e-letter will be issued via OneMotoring.

17. Please refer to **Annex B** for a sample of the list of documents to be submitted.

[3] OneMotoring >Owning > Electric Vehicle Charging > Minimum EV Charging Provisions > New Submission
[4] OneMotoring > Owning > Electric Vehicle Charging > Minimum EV Charging Provisions > Re-Submission

2.2. Certificate of Statutory Completion (CSC) Stage

18. Developers are required to apply for LTA's CSC clearance for EV charging, after the EV charging installation works are completed. Where applicable, **the submission for CSC clearance for vehicle parking and EV charging requirements** should be consolidated in a single submission to LTA.

19. The application for CSC clearance can be made **via BCA's CORENET e-Submission system** at https://www.corenet2-ess.gov.sg/. Developers will be required to submit the following information/documents:

    (i) Details of electrical load and charging points catered in development
    (ii) As-built EV charging Single Line Diagram (SLD) – with power catered for EV charging clearly indicated
    (iii) As-built carpark plan – annotated with location & power rating of charging points
    (iv) List of EV chargers installed – with respective LTA registration code assigned for each charger
    (v) Report with relevant photographic evidence of work done that should minimally include – (a) area where EV chargers are installed, (b) every EV charger installed with proof of LTA's registration mark affixed on the charger, (c) electrical infrastructure such as circuit breakers in switch room (with 'spares' labelled as for future EV charging)
    (vi) Authorization letter – if submitting on behalf of developer

20. Where there are deviations from the approved EV charging proposals and plans, developers must ensure that from the installation works will still comply with the active and passive provisions required under section 1. Developers must highlight the deviations and make a declaration that the submission would still comply with the EV charging requirements. A physical site inspection may also be conducted as part of the clearance process.

21. LTA will review the submission to verify that the installation works required in the approved proposals and plans have been completed and may request for further clarification where necessary. Applicants may expect a response from LTA requesting for clarifications, if any, within 1 month from the date of submission.

22. If the EV charging provisions installed on-site do not comply with the requirements under the EVCA, a remedial notice may be issued. Developers will be required to rectify the non-compliance within the period specified and may be required to make a re-submission via BCA's CORENET e-Submission system. Failure to comply with the remedial notice is an offence.

3. Submissions for Electrical Works

23. Development owners are required to install the necessary electrical infrastructure and EV charging points that comply with the active and passive provisions required under section 1 of the guidelines and apply for LTA's CSC clearance after the EV charging installation works have been completed. The submission must be made **within 12 months** from the approved date in the Statement of Turn On (SOTO) issued by SP PowerGrid Ltd (SPPG), or the Notice of Approval (NOA) issued by SP Services Ltd (SPS) on behalf of SP Power Assets Ltd (SPPA), whichever applicable.

24. The submission can be made **via the OneMotoring website** (https://onemotoring.lta.gov.sg/), which also contains a step-by-step guide.[5] A submission fee of $500 will be required.

25. The following documents/information will be required for the submission:

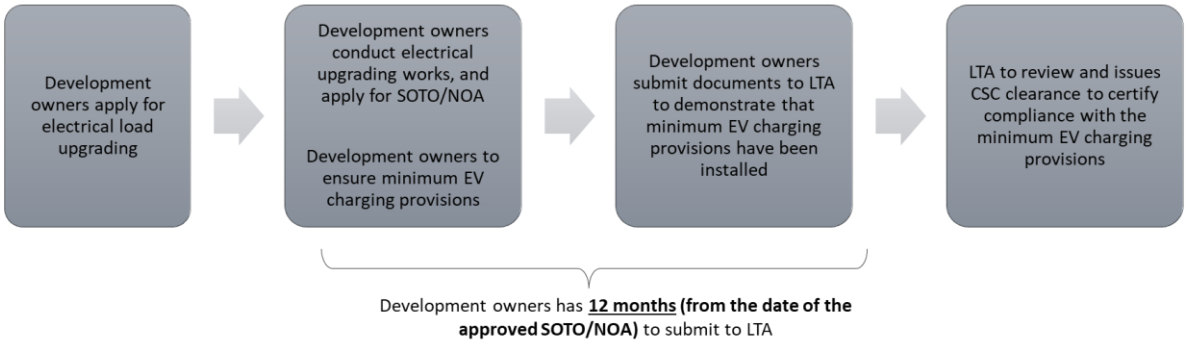
(i) Details of electrical load and charging points catered in development
(ii) Relevant approval – SPPG's Statement of Turn On, or SPS's Notice of Approval
(iii) As-built single line diagram – with electrical load provided for EV charging clearly indicated
(iv) As-built annotated car park plan – with the number of charging points and power rating of the EV charging points clearly indicated ('active provision')
(v) List of EV chargers installed – with respective LTA registration code assigned for each charger
(vi) Relevant photographs of EV charging provisions completed that should minimally include the following – (a) area where EV chargers are installed, (b) every EV charger installed with proof of LTA's registration mark affixed on the charger, (c) electrical infrastructure such as circuit breakers in switch room (with 'spares' labelled as for future EV charging)
(vii) Authorization Letter – If submitting on behalf of building owner

26. LTA will review the submission to verify that the installation works required have been completed and may request for further clarification where necessary. Development owners may expect a response from LTA requesting for clarifications, if any, within 1 month from the date of submission. If a clarification request (CR) is issued, the development owner will be required to address the CR and make a re-submission via OneMotoring.[6]

27. If the EV charging provisions installed on-site do not comply with the requirements under the EVCA, a remedial notice may be issued. Development owners will be required to rectify the non-compliance within the period specified. Failure to comply with the remedial notice is an offence[7].

[5] OneMotoring >Owning > Electric Vehicle Charging > Minimum EV Charging Provisions > New Submission
[6] OneMotoring > Owning > Electric Vehicle Charging > Minimum EV Charging Provisions > Re-Submission
[7] A developer/person who contravenes or fails to comply with a remedial notice shall be guilty of an offence and shall be liable on conviction to a fine not exceeding $30,000 and, in the case of a continuing offence, to a further

28. Please refer to **Annex B** for a sample of the list of documents to be submitted.



4. Transitioning to the New Regulations

33. The requirements for EV charging provisions at section 1 of these Guidelines will not apply to the following developments:

In relation to building works:

i. Any development for which the application for permission is made to URA before 8 Dec 2023, even if the permission is granted on or after that date

In relation to electrical works:

ii. Any land or premises for which an application for an increase in the approved electrical load is made to the Market Service Support Licensee (MSSL) (i.e., SP Services Ltd) before 8 Dec 2023, even if the application is granted on or after that date.

34. Should you have any further queries regarding the new regulations on minimum EV charging requirements in developments, please contact LTA_EV_charging@lta.gov.sg.

fine of $500 for every day or part of a day during which the offence continues after conviction - S64(8), S65(10), EVCA

Annex A – Example on application of formulae to derive the minimum electrical load & minimum number of charging points

Case Study 1	
No. of Car Parking Lot	70
No. of Motorcycle Parking Lot	30
Total	**100**

For calculation of the minimum electrical load ('passive provision')

$$\text{MEL} = 1.3\ \text{kVA} \times (\text{Total number of parking lots in the development})$$
$$1.3\ \text{kVA} \times (100) = 130\text{kVA}$$

In this case, the minimum electrical load to be provided ('passive provision') will be **130kVA.**

For calculation of the minimum number of charging point ('active provision')

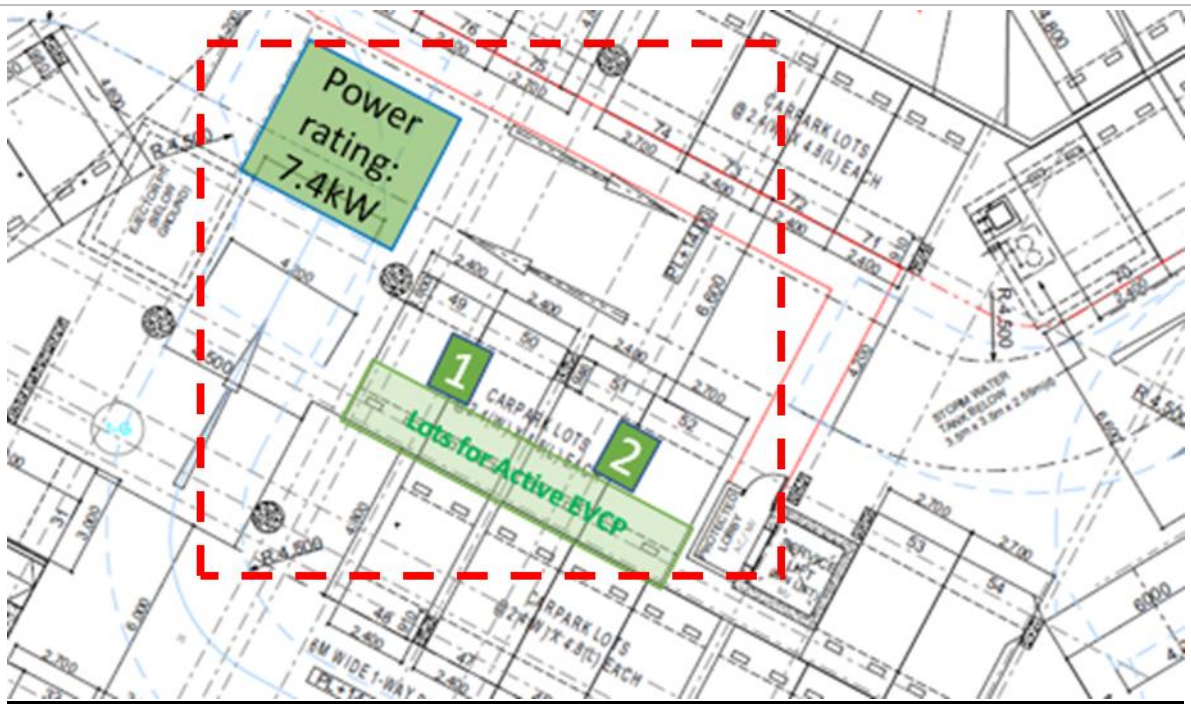
$$\text{Total power of all EV charging points installed} \geq 0.2 \text{ x } (\text{MEL x PF }) 0.2 \text{ x } (130 \text{ x } 0.85)$$
$$= 22.1kW$$

The minimum number of charging points to be installed must draw at least an aggregate of **23kW.** Based on user needs, developments can choose to deploy a mix of charging points with different power ratings.

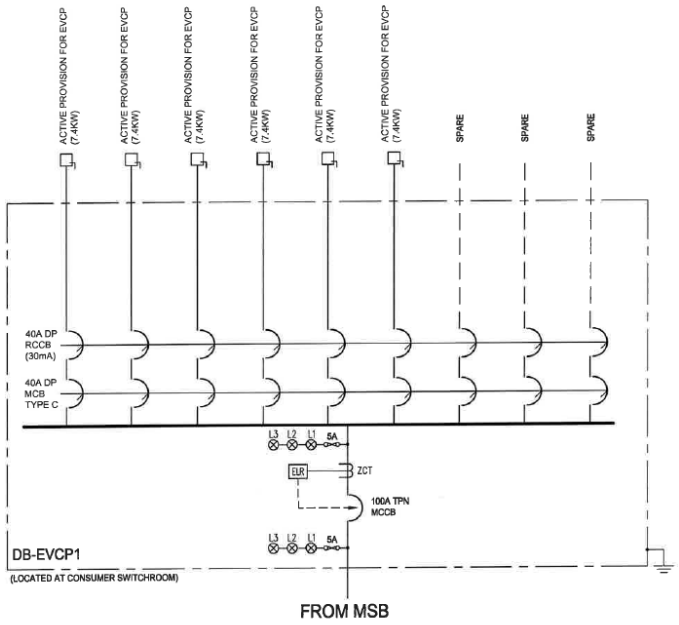
Possible Charger Combination	**No. of Charging Points**	**Power Rating**
Combination 1 *(assuming intent is to install several low powered chargers)*		
7.4kW	4	29.6kW
Total power drawn		29.6kW – **Meet requirements!**
Combination 2 *(assuming intent is to install mix of low & mid powered charger)*		
7.4kW	1	7.4kW
22kW	1	22kW
Total power drawn		**29.4kW – Meet requirements!**
Possible Charger Combination	**No. of Charging Points**	**Power Rating**
Combination 3 *(assuming intent is only to install 1 mid powered charger)*		
22kW	1	22kW
Total power drawn		22kW – **Do not meet requirements**
Combination 4 *(assuming intent is to install a high-powered charger with dual gun)*		
25kW **This assumes a scenario of a 50kW charger with dual gun. To apply a simplistic assumption that the power rating of each charging point is power rating of charger/ no. of charging points.*	2	50kW
Total power drawn		**50kW – Meet requirements!**

The possible charger combinations will be **1, 2 and 4**.

Annex B – Sample on the list of documents to be submitted



Sample of annotated carpark plan



Sample of single line diagram for EV charging

S/N	Serial No.	LTA's Registration Code Assigned

List of EV chargers installed with LTA's

Sample of list of EV chargers installed with LTA's registration code assigned
template available for download for submission

Photographic visual report template (A3)

Photographic visual report template (A3)
template available for download for submission

Active Provision	
Overview of area where chargers are installed	*Overview of area where chargers are installed*
Electrical infrastructure (such as circuit breakers in switch room, with 'spares' labelled as for future EV charging)	*Electrical infrastructure (such as circuit breakers in switch room, with 'spares' labelled as for future EV charging)*

Sample of visual report template (A3)

Active Provision	
Charger 1 (Front View)	*Charger 1 (Registration label)*
Charger 2 (Front View)	*Charger 2 (Registration label)*

Sample of visual report template (A3)