

GUIDELINES FOR THE ELECTRIC VEHICLE CHARGING OPERATOR LICENSING REGIME

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1. Electric Vehicle Charging Operator (EVCO) Licensing Regime

1. One of the key objectives of the Electric Vehicles Charging Act (“EVCA”) is to ensure that users have reliable access to electric vehicle (EV) charging infrastructure in Singapore. To achieve this, LTA will establish a licensing framework to regulate EV charging operators (EVCOs).

1.1. EV Charging Operator

2. Under the EVCA, anyone who operates EV charging station(s) serving members of public or provides EV charging service(s) for a fee, will be required to obtain an EVCO licence. Examples of EVCOs will include those who operate chargers serving condominium residents, office employees, other commercial building users and/or visitors of such premises. EV charging services will include the following:
 - a. Hiring out fixed chargers
 - b. Providing EV battery swapping services
 - c. Renting out non-fixed chargers
3. Chargers operated by landed homeowners to charge their households’ vehicles, or chargers operated by fleet owners to charge vehicles in their fleets do not require a licence. Operators who operate EV chargers on behalf of fleet owners or landed homeowners will still be required to obtain an EVCO licence. Operating EV charging stations or providing EV charging services without an EVCO licence constitutes an offence.

1.2. Classification of EVCO Licence

1.2.1. Type of EV Chargers

4. For the purpose of an EVCO licence, the following EV charger classifications are used:
 - a) Fixed Chargers: Non-portable EV chargers that are powered by a connection to an electrical installation, e.g., electrical grid.
 - b) Non-Fixed Chargers: Portable EV chargers that are not permanently affixed to the electrical grid.
 - c) Battery Charge and Swap Stations (BCSS): These are EV chargers that are used for charging and exchanging a depleted swappable detachable battery for a recharged swappable detachable battery.

1.2.2. User Profile

6. Apart from the classification on types of EV chargers, the licensing regime also distinguishes EV chargers based on their user profile. The user profile of an EV charger can be classified into the following 3 categories:
 - a) Publicly accessible Chargers: These are chargers that can be accessed and used by any member of the public and will typically include chargers that are installed in malls, petrol stations, or public housing carparks.
 - b) Private Chargers: These are shared chargers that can only be used by a selected group of users. Examples include chargers installed in condominiums or office premises meant only for use by condominium residents or office employees. While private chargers are not open for use by the general public, they are shared among a large number of individuals.
 - c) Single-user Chargers: These are chargers that are used exclusively by a specific user group and are not shared. Examples are chargers used exclusively by individual landed homeowners, or by fleets.

2. Application for EVCO Licence

7. Applicants may apply for an EVCO licence via the OneMotoring website which also contains a step-by-step guide. An application fee of \$1,500 will be required.
8. The online website also allows licensees to modify and renew their EVCO licence, tag the chargers that they operate (after a licence has been granted), and upload the documents required as part of the licensing conditions.

2.1. Scope of Licence to Apply For

9. When applying for an EVCO licence, operators will be required to specify the type and user profile of the EV chargers they intend to operate under the licence. For example, an applicant may opt to select a combination of fixed charger with publicly accessible and private profiles, and BCSS with a publicly accessible profile, while another applicant may opt to select fixed chargers with a publicly accessible profile only.
10. Table 1 summarises what licences can be applied for depending on the type and user profile of chargers. Conditions of licencing will be imposed on licenced EVCOs, which may differ depending on the type and user profile of EV chargers that the licensee operates.

Table 1: Classification of charging operations allowed

User Profile	Publicly Accessible Chargers	Private Chargers	Single-user Chargers
Charger Type			
Fixed chargers	✓	✓	✓
Battery Charge and Swap Stations	✓	✓	✓ (Fleet only)
Non-Fixed chargers*	Not Applicable		✓ (Restricted access locations only)

**Non-fixed chargers can only be used in bungalows, detached houses, semi-detached houses, and terrace houses that are not comprised within a strata title plan registered under the Land Titles (Strata) Act 1967*

2.1.1. Information and Documents Required

12. As part of the application process for an EVCO licence, applicants will need to provide the following information/documents:

- (i) General particulars
 - Applicants must provide general particulars such as the company's contact details and mailing address.
- (ii) Business/Company Representative
 - Applicants must provide LTA with a representative who will be authorised to act on behalf of the applicant with regard to matters pertaining to the EVCO licence, such as receiving notices served under the EVCA.
- (iii) Point-of-Contact
 - Applicants must also provide a point of contact, who is based in Singapore, for LTA to contact should the need arises, and to liaise with LTA on the service of notices and other documents required.
- (iv) ACRA business profile (if applicable)
 - Applicants must provide a copy of the full ACRA business profile search (if applicable), which can be purchased at <https://www.bizfile.gov.sg>.
- (v) Business proposal
 - Applicants must provide relevant information on their business model, such as the company structure (e.g., sole proprietorship, company, partnership), scale of business, overseas operations (if any), existing/future operation of EV chargers. To facilitate this, applicant should fill up the business proposal template found on LTA's website and provide supporting documents where relevant.

(vi) Financial documents

- Applicants must provide the company's financial statements and any other financial documents that documents the applicant's finances for the past 3 years, or from the date when the applicant commences business (if date of commencement is less than 3 years).

2.2. Review of Licence Application

13. During the review process, LTA may request for clarifications and further documentary proof to be provided. Applicants may expect a response from LTA within 6 weeks from the date of submission, to request for clarifications and/or documents to be supplemented where necessary.
14. The total processing time for the review of a licence application will vary from application to application and will depend on factors such as the completeness of documents submitted.

2.3. Grant of EVCO Licence

15. If the applicant fulfils the criteria, LTA will share a set of draft licensing conditions with the applicant via OneMotoring. This draft document is meant for the applicant's early information, so that the applicant can make the necessary preparation to ensure compliance with the conditions after the licence is granted and takes effect.
16. After a licence application is approved, the applicant must make payment of \$15,000 for the licence fee via OneMotoring, before the licence will be granted. Each EVCO licence is valid for 3 years, starting from the date of payment of the licence fees.
17. LTA will also provide the licensee with a final set of licensing conditions within a week via OneMotoring.

2.4. Licensing Conditions

18. Licensees will be required to comply with requirements and conditions of licensing imposed by LTA. Failure to comply with any licensing condition may result in regulatory action(s), such as a financial penalty or a suspension of licence.

2.4.1. Purchase Third Party Liability Insurance

19. Licensees must purchase third party liability insurance to cover the entire scope of their operations, which should come with a minimum coverage of two million Singapore Dollars per incident for an unlimited number of incidents. The insurance contract must require the insurer to inform the Authority should the licensee cancel or reduce the assured amount in the insurance.

20. **Licensees must promptly upload their insurance cover note upon the grant of a licence**, via the OneMotoring website. Licensees will only be allowed to proceed to tag their chargers via OneMotoring, after LTA has approved the insurance cover note provided.

2.4.2. Tagging and Untagging of EV Chargers

Charger Tagging

21. Before operating any EV chargers, licensees will need to tag all the chargers that they will be operating to their licence via OneMotoring. The user profile for the EV chargers to be operated will also need to be indicated. This will enable LTA to track all the chargers operated by the licensee.
22. Licensees will not be allowed to select user profiles that fall outside of the scope of the licence granted. *For example, Company A that has been granted a licence with the scope of fixed charger with publicly accessible and private profiles, will not be able to select the single-user profile for their EV chargers.*

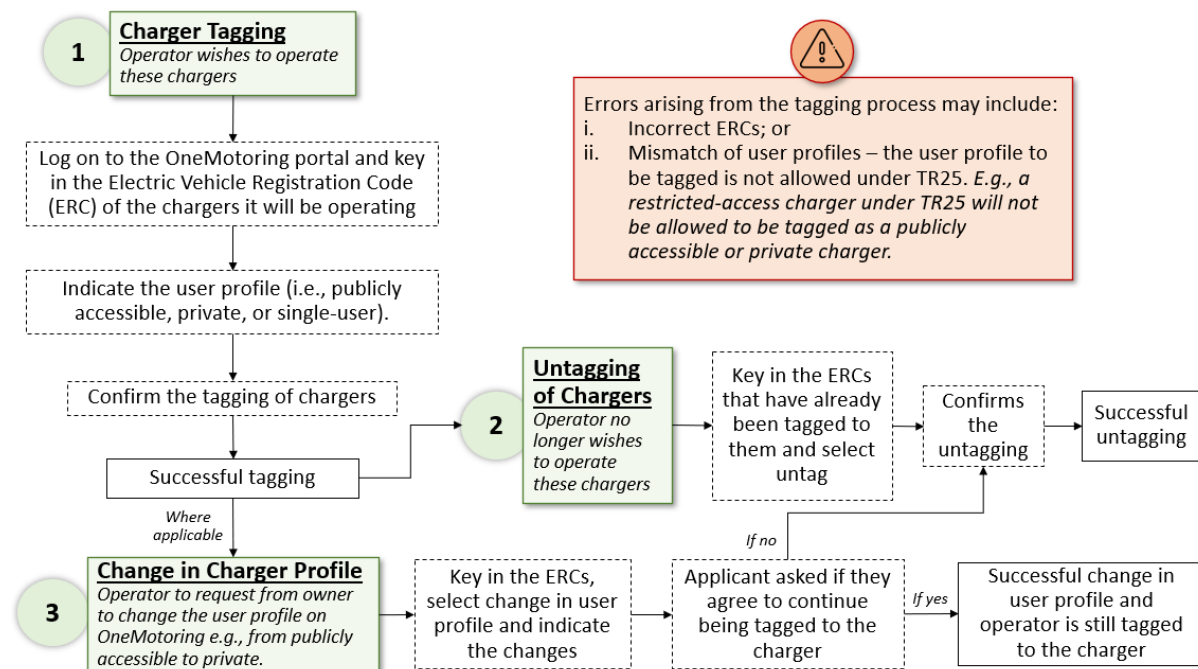
Untagging of Chargers

23. In the event a licensee is no longer operating or will no longer be operating a particular EV charger, the licensee will need to untag the EV charger.

Change in User Profile

24. The user profile of an EV charger may change depending on the preference of the charger owner or the operator. *For example, charger owner or operator may decide to change the user profile of a charger from publicly accessible to private and will be required to reflect this change on the website.*
25. Licensees will be prompted to confirm whether they wish to continue operating those chargers, which will reflect the new user profile upon confirmation. If the licensee does not wish to continue operating those chargers, the charger will be untagged.
26. Please refer to the flow chart below that maps out the workflow for the charger tagging, untagging and change in user profile.

Image 1: Flow chart for charger tagging, untagging and change in user profile



2.4.3. Data Sharing

27. All licensees will be required to submit monthly reports for **static data** in a format specified by LTA. This submission must be made by the third day of the next month and can be submitted via email at EVCA_licensing@lta.gov.sg and OneMotoring. Please refer to LTA’s website for the “Static Data Submission Template” for the format of the monthly report required and **Annex A** for more information.
28. Licensees operating publicly accessible chargers are required to provide **dynamic data** in real-time via the Open Charge Point Interface protocol (OCPI) to LTA’s assigned technical partner at a 2-min interval. Licensees must ensure that they are OCPI-compliant when applying for an EVCO licence and will be required to complete the OCPI integration with LTA’s technical partner and begin transmission of dynamic data **within 1 month** of the grant of licence. Refer to **Annex A** for more information and the data type/format prescribed.

2.4.7. Other Licensing Conditions

28. In addition to the above, Licensees will also be required to adhere to other licensing conditions depending on the scope of licence granted, such as:
 - (i) Capabilities to activate smart charging
 - The licensee shall ensure that EV chargers have the capability to adjust the electrical load in an automated way to regulate the charging rate dynamically depending on the conditions
 - (ii) Common payment method

- The licensee must provide payment methods that are commonly used across merchants in SG, such as SGQR payment codes or credit card payments, as options.
- (iii) Deposits
- The licensee must not require users to maintain or provide a deposit, which refers to an unusable sum of money, before they can use an EV Charger.¹
- (iv) Membership
- The licensee must not require users to have a membership account to pay for the services, i.e. must allow ad-hoc payment options.
- (v) Open backend standards
- The licensee must utilise open standards for communication between the charger and the charger management system (CMS). Open standards refer to all standards that are available and accessible to all operators (e.g. ISO), and are not limited to protocols by the Open Charge Alliance.
- (vi) Cybersecurity requirements
- The licensee must ensure compliance with cybersecurity requirements set out by LTA, which include the securing of network, adopting security procedures and establishing frameworks to ensure that their EV charging network is protected against cyber threats. Please refer to Annex C for the details on cybersecurity requirements.
- (vii) Service uptime standards
- The licensee must maintain a service uptime of at least 90% across all their charging points at all times.²
- (viii) Downtime correction standards
- The licensee must notify LTA of a charger downtime event in accordance to LTA's notification requirements. A charger downtime event refers to any event where 5% of the licensee's charger network is unoperational at the same time for more than 20 minutes, and where the downtime is directly attributable to factors within the licensee's control.
- (ix) Service hotline
- The licensee must provide a service hotline to attend to the queries, feedback, or complaints from callers. The contact numbers of the service hotline must be clearly visible.

¹ The following will not be considered as deposits: (a) payments in advance through a booking system, (b) requiring payment of a monthly fee, (c) purchase of gift cards, and (d) holding a sum of money from the user while the user is charging and immediately crediting the sum of money back to the user after the charging session has ended.

² The percentage is to be calculated at the end of each calendar month and submitted in the monthly data reports.

(x) Incident management procedures

- The licensee shall provide LTA with an incident management SOP that the licensee commits to undertake when dealing with specified incidents (i.e. electrical, fire, or any other safety or security incidents resulting in any serious injury or death). In the event of such an incident, the licensee should submit an incident report to LTA based on LTA's notification requirement where applicable.

(xi) Ceasing of Operations

- The licensee shall inform the Authority, at least 6 months prior, of its intention to cease operations or if it is forced to cease operations.

(xii) Mitigation of Disamenities

- The licensee shall take all reasonable steps to ensure that disamenities specified by LTA are mitigated.

(xiii) Installation of fast chargers

- The licensee must seek LTA's approval prior to operating any fast charger (i.e. charger with power rating of 22kW and above) in any residential areas (e.g. condominiums, HDB estates, or landed homes)

(xiv) Clearance from SCDF for BCSS

- For BCSS, licensee must obtain SCDF's clearance for fire safety before installing any new BCSS

29. Please refer to **Annex B** for an overview of the licensing conditions that would apply for the respective user profiles.

3. EVCO Licence Modification

30. A modification of the licence is required if any licensee wishes to operate different types of chargers that were not approved under the original scope of the licence granted. This is necessary because licensees will be held responsible to comply with the conditions of licence originally granted by LTA, unless a modification of licence is granted.

31. Licensees can **apply for licence modification via OneMotoring up till 9 months before the date of licence expiry**. Applications for licence modification within 9 months from the date of licence expiry will not be allowed. An application fee of \$800 is required for licence modification. During the application, licensee will need to reselect the type(s) and user profile(s) for chargers that they intend to operate.

32. During the review process, LTA may request for clarifications and further documentary proof to be provided. Applicants may expect a response from LTA within 6 weeks from

the date of submission, to request for clarifications and/or documents to be supplemented where necessary.

33. The total processing time for the review of a licence application will vary from application to application and will depend on factors such as the completeness of documents submitted.

4. EVCO Licence Renewal

34. Each EVCO licence is valid for 3 years, and the licensee must renew their licence before the date of their licence expiry. An application for licence renewal will require a renewal application fee of \$1,500 and **must be made no later than 3 months before the expiry of the licence**. To ensure timely processing, licensees are advised to submit the application for licence renewal 7 months before the expiry of the licence.
35. During the review process, LTA may request for clarifications and further documentary proof to be provided. Applicants may expect a response from LTA within 6 weeks from the date of submission to request for clarifications and/or documents to be supplemented where necessary.
36. **It is the responsibility of licensees to submit their application for licence renewal in a timely manner to avoid any unintended lapse of their licence validity and any corresponding disruptions to the licensees' operations.**

6. Transitioning to the New Regulations

37. To smoothen the industry's transition, LTA will provide a grace period of 12 months, until 7 December 2024, for existing EVCOs to obtain an EVCO licence. Existing EVCOs can continue to operate EV charging stations or provide EV charging services without a licence during the grace period. After the transitional period, all EVCOs must be granted a licence before they can provide EV charging services or operate EV charging stations.
38. Should you have any further queries regarding the new regulations, please contact EVCA_licensing@lta.gov.sg.

Annex A: Data to be provided by EVCOs

As part of the Licencing Conditions, EVCOs are required to provide and retain prescribed records or data for a period of 3 years for (a) Static Records and Data and 1 year for (b) Dynamic Records and Data respectively even after the date of licence expiry.

This is relevant for the following EVCOs that holds the licence to the following:

- Fixed chargers – publicly accessible
- Fixed chargers – private
- BCSS – publicly accessible
- BCSS – private
- Non-Fixed Chargers

Static Records & Data

Licensees are required to submit monthly static records and data via the EVCO Licensing Module on One Motoring following the submission template “Static Data Submission Template” on LTA’s OneMotoring website. Additionally, they must keep the corresponding static records and data for a minimum of three years, covering each calendar month.

Table 2.1: Summary of data to be collected (non-exhaustive list, to refer to excel template for full details required)

S/N	Field Name	Data Type (In Excel)	Size (Characters)	Allow Null	Description
1.	EV Charging Operator	String	200	Not allowed	Name of EV Charging Operator
2.	Operation Month and Year	String	7	Not allowed	Month of report submission on operation information <Year>-<Month>
3.	Average network uptime of EV Charge Points (EVCP) (For publicly accessible charge points only)	String	6	Not allowed	Percentage of time the publicly accessible EV charge points are available on a network level. E.g., 99.540%, 98.050%, 90.500% Formula for uptime is as follows: $\left(\frac{\sum \text{No. of mins each publicly-accessible charging point operated by the Licensee is operational in a calendar month}}{\text{No. of mins in a calendar month} \times \text{No. of operated publicly-accessible charging points}} \right) \times 100\%$

4.	Power Rating	Float	5	Not allowed	Value of power rating in kW. E.g., 7.4, 120.0, etc.
5.	Current Type	String	2	Not allowed	Type of Charging that the EV Charger supplies E.g., AC or DC
6.	Minimum Pricing (SGD with GST)	Float	5	Not allowed	Lowest Price in dollars charged for each unit of EV Charging service provided in that month E.g. \$0.234 or \$12.432
7.	Maximum Pricing (SGD with GST)	Float	5	Not allowed	Highest Price in dollars charged for each unit of EV Charging service provided in that month E.g. \$0.234 or \$12.432
8.	Unit of Pricing (kWh/Hour)	String	10	Not allowed	Unit of pricing. E.g., kWh, hour, etc.
For operators who operate Battery Charge & Swapping Systems (BCSS) only					
9.	Average network uptime of Battery Charge and Swap Stations (BCSS) (For publicly accessible charge points only)	String	6	Not allowed	Percentage of time all the BCSS stations are available on a network level. E.g., 99.540%, 98.050%, 90.500%
10.	Default price charged for monthly subscription to the BCSS (SGD with GST)	Float	5	Not allowed	Price of the subscription package which has the most number of subscriptions. E.g. \$0.234 or \$12.432 Put \$0.00 if there is a possibility of selecting a service without a subscription fee.
11.	Average state of charge (SOC) of batteries that are returned by the user to the BCSS during a swap	Float	5	Not allowed	Average State of Charge of the batteries that are returned by the user to the BCSS during a swap E.g. 54.200% or 12.400%
12.	Average state of charge (SOC) of batteries that are released to the user by the BCSS during a swap	Float	5	Not allowed	Average State of Charge of the batteries that are released to the user to the BCSS during a swap E.g. 93.500% or 87.500%

Table 2.2: EV Charge Point Carpark X (non-exhaustive list, to refer to excel template for full details required)

S/N	Field Name	Data Type (In Excel)	Size (Characters)	Allow Null	Description
1.	Date	String	50	Not allowed	Date of content E.g., 1 January 2024

2.	Start Time (hh:mm)	String	10	Not allowed	Start of time block for content E.g., 12:00
3.	End Time (hh:mm)	String	10	Not allowed	End of time block for content E.g., 12:59
4.	Car Park Code	String	6	Not allowed	Specific carpark code for HDB/URA carparks. <Branch code><car park number> <i>To indicate as 000000 if there is no carpark code available.</i>
5.	Postal Code	String	6	Not allowed	Postal code of charger installation location. E.g., 243786 <i>To indicate as 000000 if postal code is not available (only for URA carparks).</i>
6.	Total Energy Transferred (kWh)	Numeric	6	Not allowed	Accumulated energy transferred for all charge points within a carpark by a specific EVCO for that hour in kWh E.g., 7, 8.5, etc.
7.	Average energy transferred (kWh) by each charge point with the same power rating	Float	6	Not allowed	Average energy transferred for all charge points within a carpark by a specific EVCO for that hour in kWh for a specific power rating. This means please divide the total power transferred with the number of charge points. If there are multiple power ratings please duplicate the column with that power rating (E.g. for 22kW – 149kWh – 1 st column, for 50kW – 120kWh – 2 nd column) E.g., 2, 1.5, etc.
8.	Average time utilisation in percentage (%) of charge points per power rating (For non-publicly accessible charge points only)	Float	5	Not allowed	Average percentage utilisation of all charge points in a carpark by a specific EVCO for that hour in % and up to 2 decimal places. If there are multiple power rating for each charge point use multiple power columns. E.g., 52.45%, 68.75%, etc.

Table 2.3: EV Charge Points (non-exhaustive list, to refer to excel template for full details required)

S/N	Field Name	Data Type (In Excel)	Size (Characters)	Allow Null	Description
1.	Date	String	50	Not allowed	Date of content E.g., 1 January 2024
2.	Start Time (hh:mm)	String	10	Not allowed	Start of time block for content E.g., 12:00
3.	End Time (hh:mm)	String	10	Not allowed	End of time block for content

					E.g., 12:59
4.	ERC Number	String	11	Not allowed	Connector Code/ EV Charge point identifier provided by the EV Charger Type approval system. E.g., R12356A-001
5.	Average energy transferred (kWh)	Float	6	Not allowed	Average energy transferred of each charge point for that hour in kWh. E.g., 2, 1.5, etc.
6.	Time utilisation (%) (Non-publicly accessible EVCP only)	Float	5	Not allowed	Average percentage utilisation of each EV charge point for that hour in % and up to 2 decimal places. E.g., 52.45, 68.75, etc.

Table 2.4: BCSS (non-exhaustive list, to refer to excel template for full details required)

S/N	Field Name	Data Type (In Excel)	Size (Characters)	Allow Null	Description
7.	Date	String	50	Not allowed	Date of content E.g., 1 January 2024
8.	Start Time (hh:mm)	String	10	Not allowed	Start of time block for content E.g., 12:00
9.	End Time (hh:mm)	String	10	Not allowed	End of time block for content E.g., 12:59
10.	ERC Number	String	11	Not allowed	Connector Code/ EV Charge point identifier provided by the EV Charger Type approval system. E.g., R12356A-001
11.	Average energy transferred (kWh)	Float	6	Not allowed	Average energy transferred at that BCSS. E.g., 2, 1.5, etc.
12.	Total number of battery swaps per BCSS	Numeric	5	Not allowed	Number of swaps that take place in an hour E.g., 52.45, 68.75, etc.

Table 2.5: Ad-hoc data (non-exhaustive list, to refer to excel template for full details required)

S/N	Field Name	Data Type (In Excel)	Size (Characters)	Allow Null	Description
1.	Operation months	String	50	Not allowed	Month of report submission on operation information <Year>-<Month> to <Year>-<Month>

2.	Total number of unique registered users (For EV Charge Points)	Integer	10	Not allowed	Total number of unique registered users within the reporting months.
3.	ERC Number	String	11	Not allowed	Connector Code/ EV Charge point identifier provided by the EV Charger Type approval system. E.g., R12356A-001
4.	Operating Hours (For privately accessible EV Charge points and BCSS)	String	15	Not allowed	XXXX-XXXX hours E.g., If there are more than one operating hour bracket, 0700 – 1900 for Mon to Fri and 0700 – 1700 for Sat to Sun

Dynamic Records & Data

Licensees are required to integrate with LTA’s Digital Platform via Open Charge Point Interface (OCPI) to send Dynamic Records and Data at a frequency of every two minutes for all publicly accessible EV charge points to LTA’s appointed technical partner. Such Dynamic Records and Data should also be retained by licensees for a minimum of one calendar year.

A licensee should follow the latest official OCPI release with version 2.2.1 as baseline to minimally provide the required information listed below.

Dynamic Data	Description and Example		
Operator	[OCPI 2.2.1 Section 8.3.1] Location		
	Property	Type	Description
	operator	Business Details	Information of the operator.
	[OCPI 2.2.1 Section 8.4.2] Business Details		
Operator	Property	Type	Description
	name	String	Name of the operator
Name of Operator, same as the name used for EVCO licencing registration. E.g., Operator A			
Charging station/location name	[OCPI 2.2.1 Section 8.3.1] Location		
	Property	Type	Description
	name	String	Display name of the location

	E.g., Delta Sports Complex, MSCP 123																																				
EV Charge Point ID / ERC Number	<p>[OCPI 2.2.1 Section 8.3.3] Connector</p> <table border="1"> <thead> <tr> <th>Property</th> <th>Type</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>id</td> <td>String</td> <td>Identifier of the Connector within the EVSE.</td> </tr> </tbody> </table> <p>The identification details of each charging point (“the Charge Point ID”) generated from charger registration on OneMotoring. E.g., R100001F-001</p>	Property	Type	Description	id	String	Identifier of the Connector within the EVSE.																														
	Property	Type	Description																																		
id	String	Identifier of the Connector within the EVSE.																																			
Price (With GST)	<p>[OCPI 2.2.1 Section 8.3.3] Connector</p> <table border="1"> <thead> <tr> <th>Property</th> <th>Type</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Tariff_ids</td> <td>CiString</td> <td>Identifiers of the currently valid charging tariffs.</td> </tr> </tbody> </table> <p>[OCPI 2.2.1 Section 11.3.1] Tariff</p> <table border="1"> <thead> <tr> <th>Property</th> <th>Type</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>id</td> <td>CiString</td> <td>Uniquely identifies the tariff within the CPO’s platform.</td> </tr> <tr> <td>elements</td> <td>TariffElement</td> <td>List of Tariff Elements</td> </tr> </tbody> </table> <p>[OCPI 2.2.1 Section 11.4.4] TariffElement</p> <table border="1"> <thead> <tr> <th>Property</th> <th>Type</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>price_components</td> <td>PriceComponent</td> <td>List of price components that describe the pricing of a tariff</td> </tr> </tbody> </table> <p>[OCPI 2.2.1 Section 11.4.2] PriceComponent</p> <table border="1"> <thead> <tr> <th>Property</th> <th>Type</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>type</td> <td>TariffDimensionType</td> <td>Type of tariff dimension</td> </tr> <tr> <td>price</td> <td>number</td> <td>Price per unit (excl. VAT) for this tariff dimension.</td> </tr> <tr> <td>vat</td> <td>number</td> <td>Applicable VAT percentage for this tariff dimension. If omitted, no VAT is applicable. Not providing a VAT is different from 0% VAT, which would be a value of 0.0 here.</td> </tr> <tr> <td>step_size</td> <td>int</td> <td>Minimum amount to be billed. This unit will be billed in this step_size blocks. Amounts that are less than this step_size are rounded up to the given step_size. For example: if type is TIME and step_size has a value of 300, then time will be billed in blocks of 5 minutes. If 6 minutes were used, 10 minutes (2 blocks of step_size) will be billed.</td> </tr> </tbody> </table> <p>Price charged by the licensee for the provision of EV charging services to 3 decimal points. E.g., 0.500, 0.655, 0.812</p>	Property	Type	Description	Tariff_ids	CiString	Identifiers of the currently valid charging tariffs.	Property	Type	Description	id	CiString	Uniquely identifies the tariff within the CPO’s platform.	elements	TariffElement	List of Tariff Elements	Property	Type	Description	price_components	PriceComponent	List of price components that describe the pricing of a tariff	Property	Type	Description	type	TariffDimensionType	Type of tariff dimension	price	number	Price per unit (excl. VAT) for this tariff dimension.	vat	number	Applicable VAT percentage for this tariff dimension. If omitted, no VAT is applicable. Not providing a VAT is different from 0% VAT, which would be a value of 0.0 here.	step_size	int	Minimum amount to be billed. This unit will be billed in this step_size blocks. Amounts that are less than this step_size are rounded up to the given step_size. For example: if type is TIME and step_size has a value of 300, then time will be billed in blocks of 5 minutes. If 6 minutes were used, 10 minutes (2 blocks of step_size) will be billed.
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Price Type	[OCPI 2.2.1 Section 11.4.5] TariffDimensionType	
	Property	Description
	ENERGY	Defined in kWh, step_size multiplier: 1Wh
	FLAT	Flat fee without unit for step_size
	PARKING_TIME	Time not charging: defined in hours, step_size multiplier: 1 second
	TIME	Time charging: defined in hours, step_size multiplier: 1 second
Price type (i.e., whether price is measured by amount of energy transferred (kWh) or amount of time taken to deliver the energy (hour)). “kWh, hour”		
Status (Availability)	[OCPI 2.2.1 Section 8.3.22] Status of an EVSE	
	Value (in capital letters)	Description
	AVAILABLE	The EVSE/Connector is able to start a new charging session.
	BLOCKED	The EVSE/Connector is not accessible because of a physical barrier, i.e. a car.
	CHARGING	The EVSE/Connector is in use.
	INOPERATIVE	The EVSE/Connector is not yet active, or temporarily not available for use, but not broken or defect.
	OUTOFORDER	The EVSE/Connector is currently out of order, some part/components may be broken/defect.
	PLANNED	The EVSE/Connector is planned, will be operating soon.
	REMOVED	The EVSE/Connector was discontinued/removed.
	RESERVED	The EVSE/Connector is reserved for a particular EV driver and is unavailable for other drivers.
UNKNOWN	No status information available (also used when offline).	

The licensee shall contact EVCA_licensing@lta.gov.sg to inform of the intention to integrate their data pipeline when necessary and will be linked up with LTA’s technical partner (GovTech).

Annex B: List of licensing conditions applicable to various user profiles

Licensing Requirements											
Capabilities-related	Payment-related			Charger-related	Operations-related						
Capabilities to activate smart charging	Common payment methods	Users to not be required to give deposits	No memberships required for the use of chargers	Chargers to have open backend standards.	Cyber-security requirements	Downtime correction standards	Uptime standards	Data-sharing requirements	Service hotline requirements	Approval for fast charging	Compliance with SCDF's requirements
Fixed chargers – Public											
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Fixed chargers – Private											
					✓			✓	✓	✓	
Fixed chargers – Single-user											
					✓					✓	
BCSS – Public											
	✓				✓	✓	✓	✓	✓		✓
BCSS – Private											
					✓			✓			✓
BCSS – Single-user											
					✓						✓
Non-Fixed Chargers											
	✓	✓	✓					✓	✓		
Legend											
✓	Required to comply										

Annex C: LTA's Cybersecurity Requirements

1. Cybersecurity Framework

- 1.1 The Licensee shall develop and establish a cybersecurity framework to ensure the security of the Electric Vehicle Supply Equipment (EVSE), Charging Management System (CMS) and all related system components hereinafter the "Cyber Security Incident Management Process". This shall include:
 - 1.1.1 A Cybersecurity Committee or equivalent to provide leadership and direction on cybersecurity goals and policies.
 - 1.1.2 Clearly defined cybersecurity roles, responsibilities and authority for managers, administrators, operators and users.
 - 1.1.3 Review of cybersecurity policies, procedures and practices for relevance and effectiveness.
 - 1.1.4 Processes for planning, implementing, evaluating and documenting remedial actions to address cybersecurity vulnerabilities.
 - 1.1.5 Review of major cybersecurity incidents for adequacy of response and controls.

2. Application & Hosting Environment Management

- 2.1 The Licensee shall ensure the application is secure and mitigated against all identified threat scenarios. It shall be hosted on a secure environment. If the application is hosted on a cloud platform, the cloud service provider shall be certified with CSA-STAR or all three of the following ISOs: 27001, 27017, and 27018.

3. Assets, Configuration and Change Management

- 3.1 The Licensee shall maintain an accurate documentation of the EVSE, CMS and all related system components including its configuration.
- 3.2 The Licensee shall develop and establish an effective change management process that governs changes to the EVSE, CMS and all related system components.

4. Access Management

- 4.1 The Licensee shall adopt strong password management and implement access control based on the principle of least privileges for all accounts to protect against unauthorized access to the EVSE, CMS and all related system components.

5. Network Security

- 5.1 The Licensee shall ensure that there are adequate security measures to ensure the confidentiality, integrity and availability of any data transmitted.

6. System Security

- 6.1 The Licensee shall evaluate security measures and appropriate procedures to minimise the potential introduction of malicious codes into the EVSE, CMS and all related system components.

- 6.2 The Licensee shall ensure the EVSE, CMS and all related system components are hardened by disabling unneeded functions, services and unused hardware ports.

7. System Logging and Cybersecurity Monitoring

- 7.1 The Licensee shall develop and establish a security logging policy to facilitate timely detection and response to cybersecurity threats and incidents.
- 7.2 The Licensee shall develop and establish operational processes and procedures for timely detection of malicious cyber activities so that imminent cyber threats are dealt with quickly.

8. Patch Management

- 8.1 The Licensee shall develop and establish a patch management framework which includes policy and processes to ensure timely deployment of system and application updates, stable patches, and definition files to the EVSE, CMS and all related system components.

9. Risk Assessment

- 9.1 The Licensee shall conduct periodic cybersecurity risk assessments for EVSE, CMS and all related system components. Such assessments shall minimally include identification and evaluation of cybersecurity threats, vulnerabilities and impact with mitigating measures.

10. Cybersecurity Incident Management

- 10.1 The Licensee shall develop and establish a robust cybersecurity incident management procedure to effectively handle any cybersecurity incidents.

11. Security Audit

- 11.1 The Licensee shall engage qualified independent third-party security consultant(s) to conduct periodic security audits on the EVSE, CMS and all related system components. The security audits would include validation of cybersecurity controls, conduct of vulnerability assessment and penetration tests (if applicable), and to perform cybersecurity risk assessments.

12. Supply Chain and Third-Party Vendor Management

- 12.1 The Licensee shall develop cybersecurity procedures to protect and mitigate the risk of Supply Chain cybersecurity attacks.
- 12.2 In the event that any part of the EVSE, CMS and related system components is outsourced to one or more third party vendors or service providers, proper security management process and procedures shall be in place to protect data, as well as mitigate against any security risks associated with the outsourced IT service.

13. Security Awareness Programme

- 13.1 The Licensee shall develop and establish an ongoing cybersecurity awareness programme to educate its employees, third-party vendors and service providers and any other users authorised or otherwise permitted to access (including for the purpose of working on or repairing) any EVSE, CMS and all related system components and highlight to these personnel their roles and responsibilities in cyber security.

LTA’s Cybersecurity Incident Reporting Timeline

Appointment of SIRO/SIRM

Licensees are to appoint a Security Incident Response Officer (SIRO) and a Security Incident Response Manager (SIRM), who should possess the necessary knowledge and expertise to take the necessary steps when faced with possible cybersecurity threats. The SIRO and SIRM shall be the points of contact for all cyber security incidents related to the scope of the licence.

The responsibilities of the SIRO and SIRM can be found in the table below.

Responsibilities	
Security Incident Response Officer (SIRO)	<p>Role: On-site point of contact for cyber security incidents in the organisation.</p> <p>Responsibilities:</p> <ol style="list-style-type: none"> a. To have oversight over all cyber security incidents. b. To be the primary point of contact for incident notification. c. To assign IT Security Personnel to handle incidents. d. To be apprised of the current state of cyber security in place in the Licensee. e. To exercise the security policy of the licensee. f. To be technically proficient and up-to-date in cyber security practices. g. To be proactive in preventing cyber security incidents. h. To be proficiently trained in incident response procedures. i. To exercise the incident response guidelines and procedures in the licensee’s Cyber Security Incident Management Process at all times
Security Incident Response Manager (SIRM)	<p>Role: Authority in command and corporate intermediary for cyber security incidents in the Licensee.</p> <p>Responsibilities:</p> <ol style="list-style-type: none"> a. To administer, maintain and assess the implementation of the organisation’s Cyber Security Incident Management Process b. To develop management support for acquiring and sustaining adequate resources for incident response. c. To be the corporate intermediary for co-coordinating communications between senior management and incident response personnel. d. To assess and approve procedures and operations for investigating, resolving and recovering from cyber security incidents. e. To promote cyber security awareness and responsibility.

The 24x7 contact information of the designated SIRO/SIRM shall be provided to LTA's SIRO/SIRM. The designated SIRO/SIRM shall report all cyber security incidents to LTA's SIRO/SIRM in accordance with the Incident Reporting Timeline.

Incident Reporting Timeline

In the event of a cybersecurity incident or attack, operators will need to ensure compliance with the cybersecurity incident reporting timeline specified³ in the table below.

Incident Reporting Timeline	
Incident Notification	<p>Immediate notification to LTA SIRO/SIRM (contact details of LTA SIRO/SIRM can be found in the licence conditions after the licence has been granted). upon initial detection of the incident via phone messaging/email. Operator should also loop EVCA_licensing@lta.gov.sg into the notification email.</p> <ul style="list-style-type: none"> Brief description of incident, including name(s) of affected systems, type of incident and its severity.
Written Report	<p>Time to <u>submit written incident report</u>*: within 46 hours</p> <ul style="list-style-type: none"> Submit a written incident report to LTA SIRO/SIRM within 46 hours following initial detection of the incident. An e-mail of the report shall also be forwarded to LTA at EVCA_licensing@lta.gov.sg
<p>*Cyber Security Incident Reporting Form</p> <p>Please submit CSA's National Cyber Security Incident Reporting Form to LTA's SIRO/SIRM. The CSA incident form can be found here: https://www.csa.gov.sg/docs/default-source/csa/documents/legislation_form/national-cyber-security-incident-reporting-form.docx?sfvrsn=a1639977_0.</p> <p>Please also inform LTA's SIRO/SIRM and submit the incident in the SingCert portal found here: https://go.gov.sg/singcert-incident-reporting-form.</p>	
Regular Status Updates	<ul style="list-style-type: none"> Submit a written status update report to LTA SIRO/SIRM every 48 hours following the first written report to LTA SIRO/SIRM until incident closure. An e-mail of the report shall also be forwarded to LTA at EVCA_licensing@lta.gov.sg.

³ Based on the land transport cybersecurity incident management framework / category 3- incident occurred on system or network within land transport sector