Installation of Electric Vehicle (EV) Charging Facilities at
Residential and Commercial Buildings

Frequently Asked Questions (FAQ)

A. General Information

1. I have procured an EV recently. How can I install an EV charger at my parking space at home?

EV owners can liaise with the owner/incorporated owners (IO)/property management company (PMO) of the building on the feasibility of installing EV charging facilities. After obtaining their consent, you will need to engage a Registered Electrical Contractor to install the EV charging facilities and apply for electricity supply from HK Electric. Should you require any assistance on erecting EV charging facilities, you may contact us through our EV hotline 2510 2701 or email ev@hkelectric.com.

2. There are quick, medium and standard EV charging stations. What is charging time required for each type of charging station?

The charging time depends on the battery capacity and the on-board charger of the EV. It would take 6-7 hours to fully charge up a 18 kWh battery via 1-phase 13A standard charger. Using medium chargers can save the charging time. For instance, it takes only 3-4 hours to fully charge up a 18 kWh battery via 1-phase 32A charging. Quick charging can further reduce the charging time and some quick chargers can charge up an EV to 80% capacity in 30 minutes.

Generally speaking, 1-phase 32A medium charging would be adequate for normal daily use by private EV owners.

3. What is the typical driving range of an EV? How about the charging cost for an EV as compared to a petrol vehicle?

The driving range of an EV depends on various factors including battery capacity, road conditions and driving mode, etc. A typical EV can travel for more than 130 km after a full charging. For some advanced models, the driving range can reach more than 400 km.
Taking 1-phase 32A medium charging as an example, an EV can travel about 40km after 1-hour charging, which is about the distance from urban area to the airport in Hong Kong.

<table>
<thead>
<tr>
<th>Charge Type</th>
<th>Cost Information</th>
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<tbody>
<tr>
<td>EV charging cost</td>
<td>about $0.23 per km</td>
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<tr>
<td>Petrol vehicle fuel</td>
<td>about $1.5 to $2.0 per km</td>
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4. Where are HK Electric’s EV charging stations?

HK Electric has commissioned 6 EV standard charging stations and 4 EV quick charging stations at various locations on Hong Kong Island. For details, please browse our EV website www.hkelectric.com/ev/

B. Application for electricity supply

1. How should I apply for electricity supply for EV chargers and how long is the lead time?

To apply for supply for EV chargers, please submit an application form together with the following information:

1) Estimated loading
   Generally, customer can install 18 sets of 1-phase 32A medium chargers if there is 3-phase 200A supply capacity.

2) Schematic wiring diagram
3) Proposed service position

After receiving the required information, we will confirm the availability of capacity at HK Electric supply point in 2 working days.

Once your electrical installation is completed, you can schedule an inspection appointment through our hotline 2887 3411. We will inspect the installation in 2 working days and connect supply on the same day if inspection is satisfactory.

2. How can we tell if the existing supply sources in our buildings can accommodate the additional demand of EV charging facilities?

For the capacity of HK Electric supply sources, the owner/IO/PMO can make an enquiry via email evload@hkelectric.com and we will confirm the availability of capacity in 2 working days.
With regard to the supply capacity of buildings’ communal installations, the owner/IO/PMO should engage a Registered Electrical Contractor or a consultant to assess.

3. Will HK Electric provide a new supply source to cater for the additional demand of EV chargers? If yes, what is the service charge?

Upon receiving the estimated loading, we will re-confirm whether the existing supply sources can cater for the additional demand. We will consider installing new supply sources if the existing supply source(s) for the building is already fully loaded. The detailed supply arrangement and service charge required would be determined on a case-by-case basis.

4. Can the owner/IO/PMO of the building install check meters or timers for recovering the electricity charges for EV charging?

We may allow customers to install their own check meters or timers to recover the electricity charges for EV charging facilities via metered communal installations. Prior approval from HK Electric is required and this measure is solely for the purpose of EV charging. The customer may simply submit the standard form (EV1) together with schematic diagram for our consideration and we would handle the application within 2 working days.

C. EV supply equipment

1. Which type of EV charger should we choose?

There are different types of EV chargers in the market, supporting cars manufactured in different countries. Customers should select the type which best suits their specific requirements and conditions. Most chargers can be classified by the rating and the supported charging standard:

Typical Rating

- 1-phase 13A (AC, standard charging)
• 1-phase 32A (AC, medium charging)

• 3-phase 32A (AC, quick charging)

• 50kW (DC, quick charging)

Typical Charging Standard

• IEC Standard (AC medium to quick charging according to the charging current, support mainly EVs from Europe, including BMW i3, Renault Zoe, Tesla Model S and Volkswagen e-Golf)
• SAE Standard (AC medium charging standard, support mainly EVs from USA and Japan, including Nissan Leaf)

• CHAdeMO Standard (DC quick charging standard, support mainly EVs from Japan, including Nissan Leaf and Mitsubishi i-MiEV)

• CCS Combo Standard (DC quick charging standard, support mainly EVs from Europe, including BMW i3 and Volkswagen e-Golf)

Some EV suppliers provide their own EV chargers to buyers, e.g. Tesla (Wall Connector, 3-phase 32A) and BMW i3. However, for other car brands, EV buyers may need to check with the supplier to see which charging standard the EV is compatible with.

In general, all EVs can support 1-phase 13A standard charging. Moreover, most popular EVs in Hong Kong can use 1-phase 32A charger in IEC charging standard, which can reduce the charging time (3-4 hours from empty to full charge) by about 60 per cent as compared with standard 13A (1-phase) socket outlet (6-7 hours from empty to full charge).
Nowadays, some EV suppliers also provide adaptor charging cable to facilitate conversion to other charging standards for their EVs. A common example is IEC/SAE adaptor charging cable.

You may find the information of EV supply equipment suppliers on our website www.hkelectric.com/ev/evse_list.

2. We learnt that there is some smart charging system in the market which could provide extra convenience in managing EV charging facilities. Could you share more about these smart charging systems?

In general, EV smart charging systems can provide extra convenience for EV charging. Currently, the smart charging systems more prevalent in the market include Booking System, Electronic Payment System and Load Management System.

**Booking System**

Booking System allows the EV drivers to book the desired EV chargers in advance, aiming to resolve the queuing issues faced by EV drivers. Such system usually features the occupancy status in a mobile App which may also navigates drivers to the designated charging station(s).

User authentication could be achieved via mobile App, QR-code, etc.

**Electronic Payment System**

Electronic Payment System can be used to pay charging fees via Octopus, Autotoll, credit card, PayPal systems, etc.

Some common payment arrangements include

1) Store-value
2) Pay as you go
3) Deposit with monthly statement

**Load Management System**

Load Management System can monitor the real-time charging current, charging power and status of each networked charger facility and regulate charging current of EV charging facilities based on the overall demand in order to avoid overloading the power supply of the EV chargers.

Hence, carparks can be allowed to install more EV chargers without the need to increase electricity load while optimising power supply.
D. HK Electric’s services

1. How can HK Electric help us in erecting EV charging facilities?
   - Provide technical information of EV charging facilities
   - Give recommendations on supply arrangement for customer installation
   - Confirm availability of capacity at HK Electric supply point
   - Assess application to install check meters or timers for calculating electricity consumption charges by the owner/IO/PMO of the building
   - Arrange visits to our charging facilities and help buildings assess locations, metering and supply arrangements for erecting EV charging facilities

In addition, the “Smart EV Charge Easy Online Advisor” is launched at our EV website and Low Carbon App which is tailored for EV Owners, Incorporated Owners and Management Office. By completing some simple question, the online advisor provides you a tailor-made preliminary proposal to facilitate the installation of EV charging facilities in your building. With the report on-hand, it is much more convenient for customers to further discuss the plan with Incorporated Owners or for HK Electric to provide customize advise to you. Scope of advice covers electricity supply capacity, customer electrical installation, payment arrangement, financial arrangement by customer, smart charging features, etc.

2. The IO/owner of the building does not allow us to erect EV charging facilities at our parking spaces, how could we arrange for charging?

You may liaise with the IO/owner of the building to understand their reason for not allowing the erection of EV charger. Please contact us if it is related to the supply equipment, meter installation or interface requirements of HK Electric.
You can also charge your EV in public car parks. Currently, there are over 1,200 chargers all across Hong Kong for public use including 11 quick chargers using CHAdeMO standard, such that there is one within around 20 km. They also include over 106 quick chargers using other charging standards and 180 medium chargers.

You may refer to the website of Environmental Protection Department www.epd.gov.hk/epd/english/environmentinhk/air/prob_solutions/promotion_ev.html for the locations of these public chargers. You may also find the locations of HK Electric EV charging stations in our EV website www.hkelectric.com/ev/.

3. Can HK Electric help us erect EV charging facilities?

As an electricity supplier, HK Electric does not undertake electrical works on customer installations. EV charging facilities are fixed electrical installations which must comply with the relevant requirements of the Electricity Ordinance and its subsidiary Regulations. Electrical works on EV charging facilities including design, installation, commissioning, inspection, testing, maintenance, modification and repairing shall be carried out by Registered Electrical Contractors (REC) and Registered Electrical Workers of the appropriate grade. You may find the information of REC for EV charging installation on our website www.hkelectric.com/ev/rec_list. Alternatively, you may also find the information on REC on the government website www.emsd.gov.hk/emsd/eng/ppp/electricity_reg_ec.shtml.