



Request for Information for the Expansion of Electric Vehicle Charging Network in Changi Airport

Date: 20 May 2024

1. Introduction

CAG is seeking information from qualified vendors who can provide solutions for the expansion of the existing low-voltage, electric vehicle (EV) charging network in Changi Airport.

The purpose of this RFI is to gather information on the current market offerings, capabilities, and best practices for EV charging solutions.

This RFI is not a solicitation for proposals, bids, or quotations, and does not obligate CAG to award a contract or enter into any agreement with any vendor. The information obtained from this RFI will be used by CAG to inform its future procurement strategy and requirements for the EV charging network expansion project.

2. Background

CAG is committed to reducing its carbon footprint and promoting sustainability in its operations and services, as well as enabling its airport partners and ground handlers by providing the required infrastructure.

As part of its green initiatives, since 2017, CAG has installed EV charging stations at various locations within Changi Airport's airside, to support the charging of electric baggage tractors.

CAG intends to expand the EV charging network to meet the growing demand from electric ground support equipment with an **Anderson Euro Battery Connector**.

The expansion project aims to increase the number of charging points, improve the accessibility and availability of the charging stations, enhance the user experience and convenience, and integrate the charging network with CAG's existing airport systems.

In the next phase of expansion, CAG is interested to understand from potential vendors the various ownership models offered. CAG would prefer a full Build-Own-Operate model, where CAG would grant a license to the vendor to operate the network.

3. Scope of Information Requested

CAG is interested in receiving information from vendors who can provide a concession for the EV charging network expansion project, including but not limited to the following aspects:

- Design, installation, commissioning, testing, operation, and maintenance of the EV charging stations and related infrastructure.
- Provision of hardware, software, and services for the EV charging stations and related systems, such as monitoring, management, maintenance, and analytics.
- Compliance with the relevant standards, regulations, and best practices for EV charging, such as safety, security, interoperability, and performance.
- Methods of integration and standardisation with the existing network of PosiCharge Anderson Euro chargers, and the accompanying plug-and-charge concept, whereby vehicles identify and authenticate themselves to the chargers (as opposed to drivers authenticating themselves).
- Innovation and differentiation of the vendor's solutions, such as features, functionalities, benefits, and value propositions.
- Cost and timeline estimates for the implementation of the vendor's solutions, as well as the pricing models and options for the hardware, software, and services.
- References and testimonials from previous or existing clients who have implemented or used the vendor's solutions, especially in the airport or transportation sector.

The proposal should preferably take the form of a Build-Own-Operate model, whereby:

- CAG would license the vendor to operate these chargers over a concession period,
- The vendor would recover the cost of providing chargers from the end-users, and
- The vendor would share a portion of the collected revenue with CAG, with a minimum to reimburse CAG the cost of electricity consumed.
- The concession duration would be around the range of five to seven years.

Notwithstanding the aforementioned preferences, vendors may counter-propose variations and alternatives to these terms for consideration.

4. Preferred equipment specifications

The chargers should be compatible with a range of ground support equipment, such as baggage tractors, belt loaders, pushback tractors, and passenger buses.

The chargers should be able to function with vehicles containing battery chemistries including but not limited to lead-acid, and lithium-ion.

The chargers should have a minimum output power of 40 kW, and be capable of load sharing, e.g. and the ability to distribute the outgoing current over a minimum of two ports within the same master unit, and/or via an external controller.

The chargers should use the Anderson Euro battery connector type.

The chargers should have smart features, such as remote monitoring, data logging, load management, and payment options.

The chargers should be durable, weatherproof, and safe, complying with relevant standards and regulations.

The chargers should be easy to use, maintain, and service, with clear instructions and indicators.

5. Submission of Information

Vendors who wish to respond to this RFI should submit their information in PDF format via email to jay.zhang@changiairport.com and lynette.koay@changiairport.com by **27 May 2024, 5pm (SGT)**. Requests for an extension beyond the deadline may be considered.

The information submitted should include the following sections:

- Executive summary: A brief overview of the vendor's company profile, capabilities, and solutions for the EV charging network expansion project, as per the template in **Annex A**.
- Technical details: A detailed description of the vendor's solutions, including the hardware, software, and services.
- Cost and timeline estimates: A breakdown of the cost and timeline estimates for the implementation of the vendor's solutions, as well as the pricing models and options for the hardware, software, and services.

- References and testimonials: A list of previous or existing clients who have implemented or used the vendor's solutions, especially in the airport or transportation sector, along with their contact details and feedback.
- Additional information: Any other information that the vendor deems relevant or useful for CAG to evaluate the vendor's solutions.
- Vendors should ensure that the information submitted is accurate, complete, and up-to-date, and that they have the necessary permissions and authorizations to share the information with CAG.
- Vendors should also indicate if any of the information submitted is confidential or proprietary, and specify the conditions and restrictions for its use and disclosure by CAG.

6. Evaluation and Follow-up

CAG will review and evaluate the information submitted by the vendors based on the following criteria:

- Relevance and suitability of the vendor's solutions for the EV charging network expansion project.
- Quality and reliability of the vendor's solutions, as well as the vendor's track record and reputation.
- Innovation and differentiation of the vendor's solutions, as well as the vendor's value proposition and competitive advantage.
- Cost and timeline feasibility and efficiency of the vendor's solutions, as well as the vendor's pricing flexibility and options.
- CAG reserves the right to request additional information or clarification from the vendors, or to conduct site visits or demonstrations of the vendor's solutions, as part of the evaluation process.
- CAG may invite selected vendors to participate in further discussions or negotiations, or to submit formal proposals, bids, or quotations, for the EV charging network expansion project.
- CAG may also conduct a Direct Marketing Exercise (DME), issue a request for proposal (RFP) or a tender for the EV charging network expansion project, based on the information obtained from this RFI and other sources.
- CAG does not guarantee that any vendor who responds to this RFI will be invited to participate in the subsequent procurement process, or that any contract or agreement will be awarded to any vendor as a result of this RFI.

7. Contact Information

For any queries or clarifications regarding this RFI, please contact:

Mr. Jay Zhang
Assistant Manager, Airside Management
Jay.zhang@changiairport.com

Ms. Lynette Koay
Assistant Manager, Airside Management
Lynette.koay@changiairport.com

Annex A: Executive Summary Template

Company	
Manufacturer of charger	
Lead-time for delivery and installation	
Ability to integrate and standardise with existing network (Y/N)	
Revenue sharing model	
Load-sharing concept	
Supported battery chemistries	
Concession duration	