




Functional Requirements


March 2024

**Truck for Mobile Battery Energy Storage System (ESS)
and Mobile Power Changeover System (PCS)**

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1. SCOPE

These Functional Requirements apply to the supply of **2 heavy trucks (RHD)** for carrying Mobile Battery Energy Storage System (ESS) and **1 heavy truck (RHD)** for carrying Mobile Power Changeover System (PCS), cables and accessories, and the necessary adaptations to be done in order to optimize the layout and to improve the effectiveness of the operating team's performance. The mobile unit (truck, ESS, PCS and accessories) is an uninterrupted power supply facility for CEM's and therefore the highest reliability patterns should be taken into account on choosing the truck model and brand.

Supplier shall be responsible to prepare all necessary documents (e.g. calculation data, drawings, etc.) for submitting the application to DSAT and obtaining license for the trucks after installed ESS cubicle and PCS cubicle. Cubicle supplier will support to assemble the truck and cubicle, provide the necessary drawings and documents related to ESS cubicle and PCS cubicle. CEM shall only be responsible for the signature on the prepared forms.

2. LOAD

List of equipment to be transported and approximate corresponding weight

Mobile Battery Energy Storage System (ESS)


Material/Equipment	Approximate weight (kg)
Battery	10,000
BMU	80
Converter	650
Air conditioner	140
Cubicle	3,130
Sum:	14,000

Mobile Power Changeover System (PCS)

Material/Equipment	Approximate weight (kg)
Static transfer system	515
Cable	355
Cubicle	3,130
Sum:	4,000

The tenderer must perform an analysis for the weight distribution on the axles and calculate the gravity Centre as well. The truck's stability is a major requirement

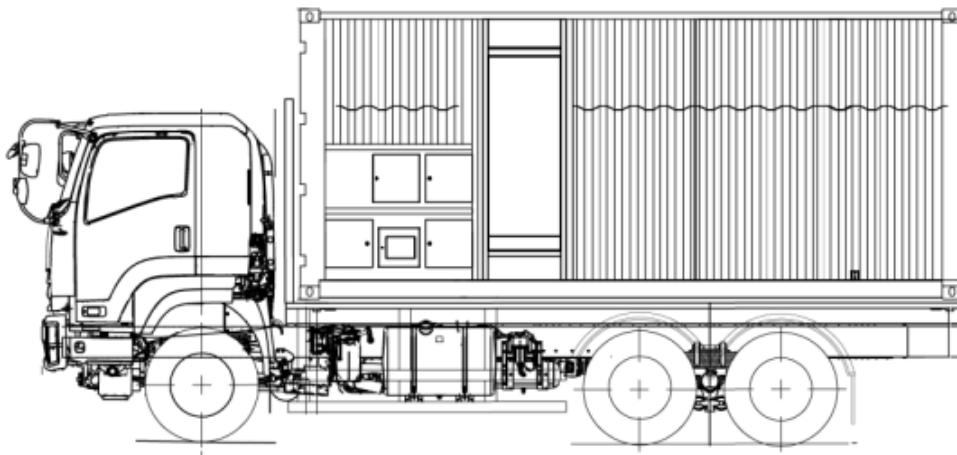
The truck must cope, without special deterioration, with the vibration produced by the ESS and PCS when at working mode

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3. DIMENSIONS AND WEIGHT

Cubicle dimensions of Mobile Battery Energy Storage System (ESS)

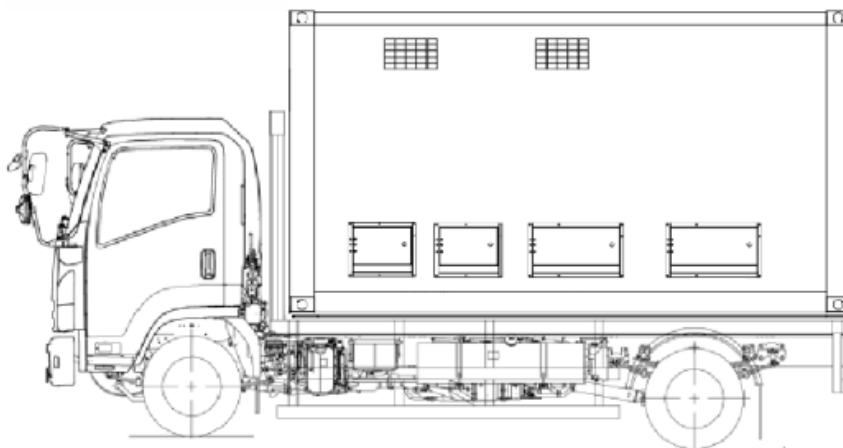
Length	6058 mm
Width	2590 mm
Height	2400 mm



Truck's weight	25t
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Cubicle dimensions of Power Changeover System (PCS)

Length	4000 mm
Width	1900 mm
Height	2300 mm



Truck's weight	10t
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A trade-off between minimum required dimensions and the suitability for the traffic conditions on Macau's narrow streets should be a proposal goal.

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4. BRAND AGENT

Since this is crucial equipment for CEM, technical assistance and availability of spares are major factors for the tender awarding.

It is a determinant condition for proposal acceptance that truck brands have a local (Macau's) agent with adequate repair facilities and technical personnel.

Proven availability of spares, both in storage terms, and in fast importation capacity, will be also assessed.

5. GUARANTEE

A truck's guarantee proposal covering the usual aspects of this type of equipment for no less than two years should be submitted together with the Tender documents.

6. DATA TO SUBMIT WITH THE TENDER DOCUMENTS

- Complete set of documentation for the truck: technical data, suitability for the task, commercial data, and track record.
- Brand representative detailed information including: facilities, functional technical organization, and history.
- Guarantee period and coverage for the truck
- Plans and detailed drawings for the structures to be adapted and materials to be used.