Standard Template for Test Report Submitted in Accordance with the Section 7 of Guideline "Vehicle Construction Approval Requirements for Pure Electric Vehicles and Plug-in Hybrid Vehicles"

Date : _____

Report No. : _____

Name of Applicant : _____

Address of Applicant :

_____

Contact Person : _____

Contact No. : _____

E-Mail : _____

Remarks (if applicable):

_____

Sample Description :

Registration Class:	
Chassis No.:	
Make:	
Model:	
Type, Variant, Version / Model code:	
Motor No.:	
Year of Manufacture:	
Country of Origin:	

Date of Inspection: _____

Location of inspection: _____

Test Requirement:	Paragraph 7 "Special remarks for individual electric vehicle importer" of "Vehicle Construction Approval Requirements for Electric Vehicles" (Rev.7, July 2022), issued by Vehicle Safety and Standards Division, Transport Department.
Test Result:	See following pages
Conclusion:	Based on our evaluation, the inspected vehicle, at the time and at the location of conducting the test and inspection, met the requirements of Paragraph 7 "Special remarks for individual electric vehicle importer" of "Vehicle Construction Approval Requirements for Electric Vehicles (applicable to pure electric vehicles and plug-in hybrid electric vehicles)" (Rev.7, July 2022), issued by Vehicle Safety and Standards Division, Transport Department.

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Tested by:

Signature: _____

Name: _____

Approved by:

Signature: _____

Name: _____

R.P.E. Card :

Issued by:

Name : _____

Address : _____

Contact No. : _____

E-Mail : _____

Test Results

7.1 Visual inspection results on high-voltage electrical components of the vehicle.

After removal of parts in a non-destructive manner, visual inspection was performed on high-voltage electrical components of the vehicle, including:

- Rechargeable Energy Storage System (RESS)
- On-board charger
- Vehicle inlets
- High voltage cables, terminals and connectors
- Energy conversion system assembly
- Traction system

Inspection results:

Item	Observation
Damages	
Wear and tear	
Burnt mark	
Poor workmanship	
Poor connections	
Signs of overheating	
Water marks	

Remarks:

See photos in section 7.4 for details.

7.2 Technical specifications of the high-voltage electrical components, including RESS, On-board charger, Vehicle inlets, High voltage cables, terminals and connectors, Energy conversion system assembly and traction system etc.

Component	Technical specifications information	Photo
Rechargeable Energy Storage System (RESS)	Nominal system voltage (V): Rated Pack Energy (kWh): Number of Cell: Battery Chemistry Type:	

Energy conversion system assembly/ On-board charger	Model Name/No. Model ID (Ref. No.): Electric Source: - INPUT (V, Hz): - OUTPUT (V): Serial No.: Manufactured Year/Month:	

Vehicle inlets	AC (eg: IEC 62196 ; SAE J1772 ; GB 20234.2) : Voltage (VAC): Current (A): DC (eg: IEC CCS2 ; SAE CCS1 ; CHAdeMO ; GB 20234.3) : Voltage (VDC): Current (A):	
High voltage cables, terminals and connectors	HV Cables (e.g. from Charging Inlet to on board charger; from battery to invertor etc.) : Terminals (e.g. battery; invertor; on board charger etc.)	

	Connectors (e.g. battery; invertor; on board charger etc.):	
Motor	Motor Type:	
	Motor No.:	
	Rated Power (kW):	
	Max Output (kW):	
	Max Torque (Nm):	

7.3 The Isolation resistance test according to measurement method stipulated in UNECE-R100 Revision 2 / UNECE-R136*

According to the paragraph 5.1.3. "Isolation resistance"[1] of UNECE-R100 Revision 2 /UNECE-R136*,

Paragraph	Requirement for minimum value of the working voltage for high buses
5.1.3.1.	Electric power train consisting of separate DC- or AC-buses
	☐ If AC high voltage buses and DC high voltage buses are galvanically isolated from each other, isolation resistance between the high voltage bus and the electrical chassis shall have: • a minimum value of **100 Ω/volt** of the working voltage for DC buses, and • a minimum value of **500 Ω/volt** of the working voltage for AC buses.
5.1.3.2.	Electric power train consisting of combined DC- and AC-buses
	☐ If AC high voltage buses and DC high voltage buses are galvanically connected isolation resistance between the high voltage bus and the electrical chassis shall have a minimum value of **500 Ω/volt** of the working voltage.
	☐ If all AC high voltage buses are protected by one of the 2 following measures, isolation resistance between the high voltage bus and the electrical chassis shall have a minimum value of **100 Ω/ volt** of the working voltage: ☐(a) Double or more layers of solid insulators, barriers or enclosures that meet the requirement in paragraph 5.1.1. independently, for example wiring harness; ☐(b) Mechanically robust protections that have sufficient durability over vehicle service life such as motor housings, electronic converter cases or connectors;

The isolation resistance between the high voltage bus and the electrical chassis is demonstrated in measurement method: A / B *.

(* Delete as appropriate)

☐[1] According to UNECE-R136, this paragraph shall not apply to chassis connected electrical circuits where the maximum voltage between any live part and the electrical chassis or any exposed conductive part does not exceed 30 V AC (rms) or 60 V DC.

A. Measurement method using DC voltage from external sources (according to Annex 4A Clause 2.1 of UNECE-R100 Revision 2 / UNECE-R136*)

Battery Nominal Voltage	_____	V
Test Voltage (> half of battery nominal voltage)	_____	V

Measured Location (DC High voltage bus):	Measured value	
HV + to electrical chassis (Front)	_____	Ω/V
HV + to electrical chassis (Rear)	_____	Ω/V
HV - to electrical chassis (Front)	_____	Ω/V
HV - to electrical chassis (Rear)	_____	Ω/V
Inlet DC (1) + to electrical chassis (Front)	_____	Ω/V
Inlet DC (1) + to electrical chassis (Rear)	_____	Ω/V
Inlet DC (1) - to electrical chassis (Front)	_____	Ω/V
Inlet DC (1) - to electrical chassis (Rear)	_____	Ω/V
Inlet DC (2) + to electrical chassis (Front)	_____	Ω/V
Inlet DC (2) + to electrical chassis (Rear)	_____	Ω/V
Inlet DC (2) - to electrical chassis (Front)	_____	Ω/V
Inlet DC (2) - to electrical chassis (Rear)	_____	Ω/V
Min. required isolation resistance: (refer to Paragraph 5.1.3)	_____	Ω/V

Conclusion: The lowest isolation resistance is _____Ω/Volt. This value is greater than _____Ω/Volt as required, therefore the result meet with satisfaction.

Measured Location (AC High voltage bus):		
Inlet AC (L1) to electrical chassis (Front)	_____	Ω/V
Inlet AC (L1) to electrical chassis (Rear)	_____	Ω/V
Inlet AC (L2) to electrical chassis (Front)	_____	Ω/V
Inlet AC (L2) to electrical chassis (Rear)	_____	Ω/V
Inlet AC (L3) to electrical chassis (Front)	_____	Ω/V
Inlet AC (L3) to electrical chassis (Rear)	_____	Ω/V
Inlet AC (N) to electrical chassis (Front)	_____	Ω/V
Inlet AC (N) to electrical chassis (Rear)	_____	Ω/V
Min. required isolation resistance: (refer to Paragraph 5.1.3)	_____	Ω/V

Conclusion: The lowest isolation resistance is _____Ω/Volt. This value is greater than _____Ω/Volt as required, therefore the result meet with satisfaction.

(* Delete as appropriate)

B. Measurement method using the vehicle's own REESS as DC voltage source (according to Annex 4A Clause 2.2 of UNECE-R100 Revision 2 / UNECE-R136*)

Measured Location	Measured value	
REESS High Voltage bus (Vb)	_____	V
Negative side of REESS High Voltage bus to electrical chassis (V1)	_____	V
Positive side of REESS High Voltage bus to electrical chassis (V2)	_____	V

The result indicated V1 ≥ V2 / V1 < V2* , therefore V1/V2* is used for Resistor Insertion test.

Resistor Inserted (Ro)	_____	Ω
With resistor inserted, measured voltage between the Positive / Negative* side of the High Voltage bus and the electrical chassis (V1' / V2'*)	_____	V
Electrical Isolation (Ri) = Ro*Vb*(1/V1'-1/V1) or Ro*Vb*(1/V2'-1/V2)		
= _____	_____	Ω
Isolation Resistance = Ri / Vb		
= _____	_____	Ω/V
Min. required isolation resistance: (refer to Paragraph 5.1.3)	_____	Ω/V

Conclusion: The isolation resistance is _____Ω/Volt. This value is greater than _____Ω/Volt as required, therefore the result meet with satisfaction.

(* Delete as appropriate)

7.4 Photos showing the EV in different views, EV charging cables, vehicle inlet(s) and name plate of the In Cable Control Box (ICCB).

Photos showing the:

- EV in different views:

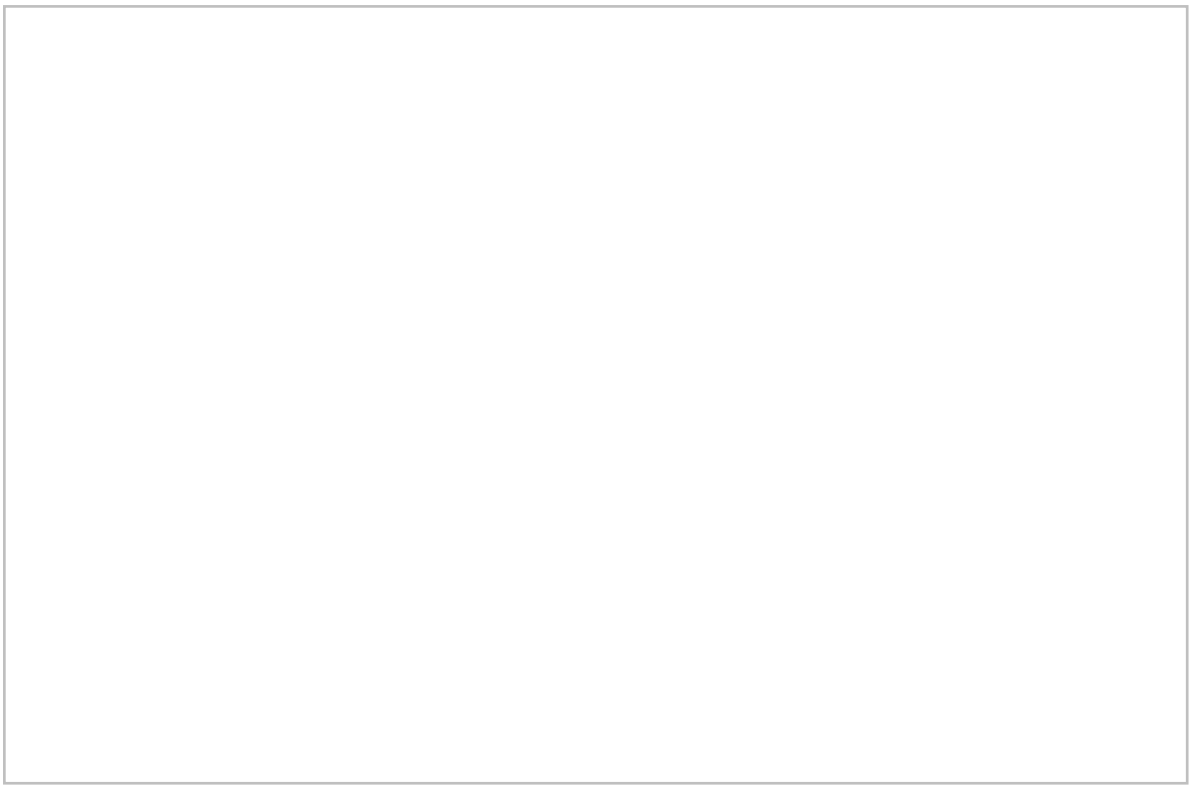

Figure 1 : Front view (1)

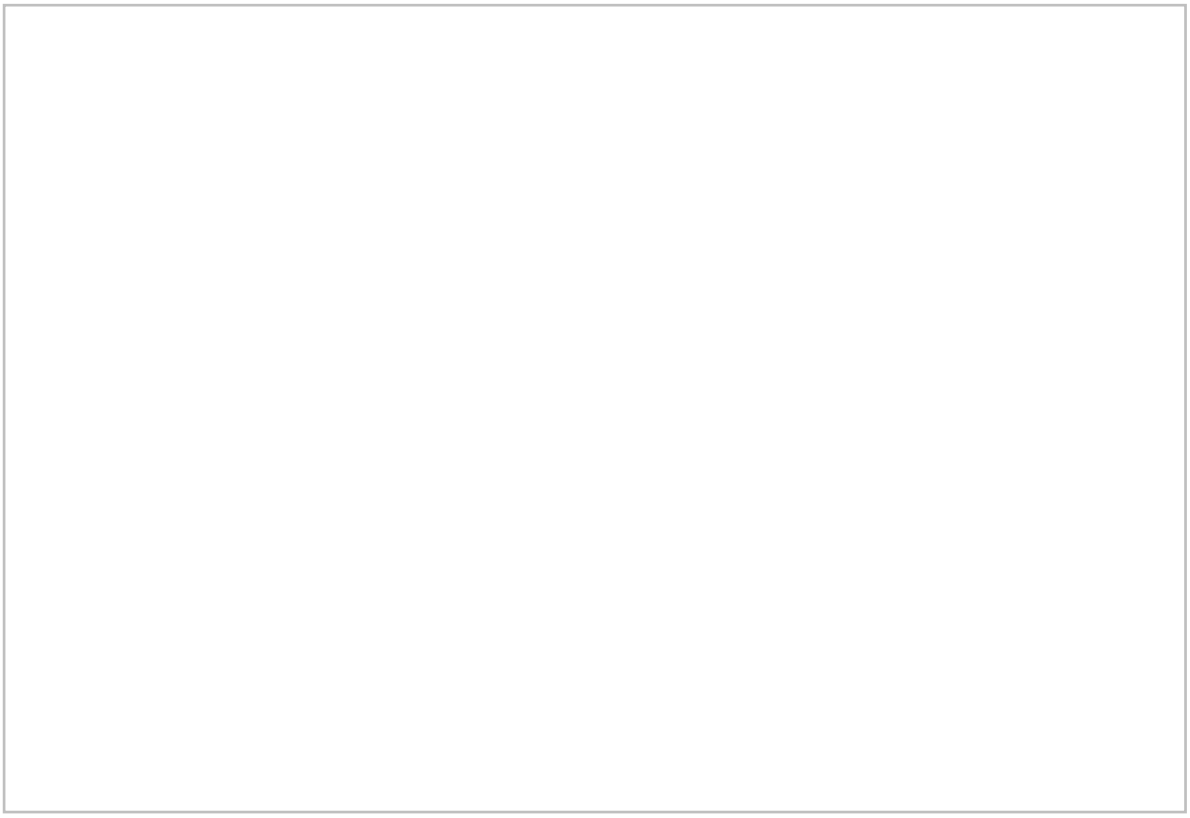

Figure 2 : Front view (2)

Note: Please use additional sheet if necessary.

- EV in different views (Cont'd):

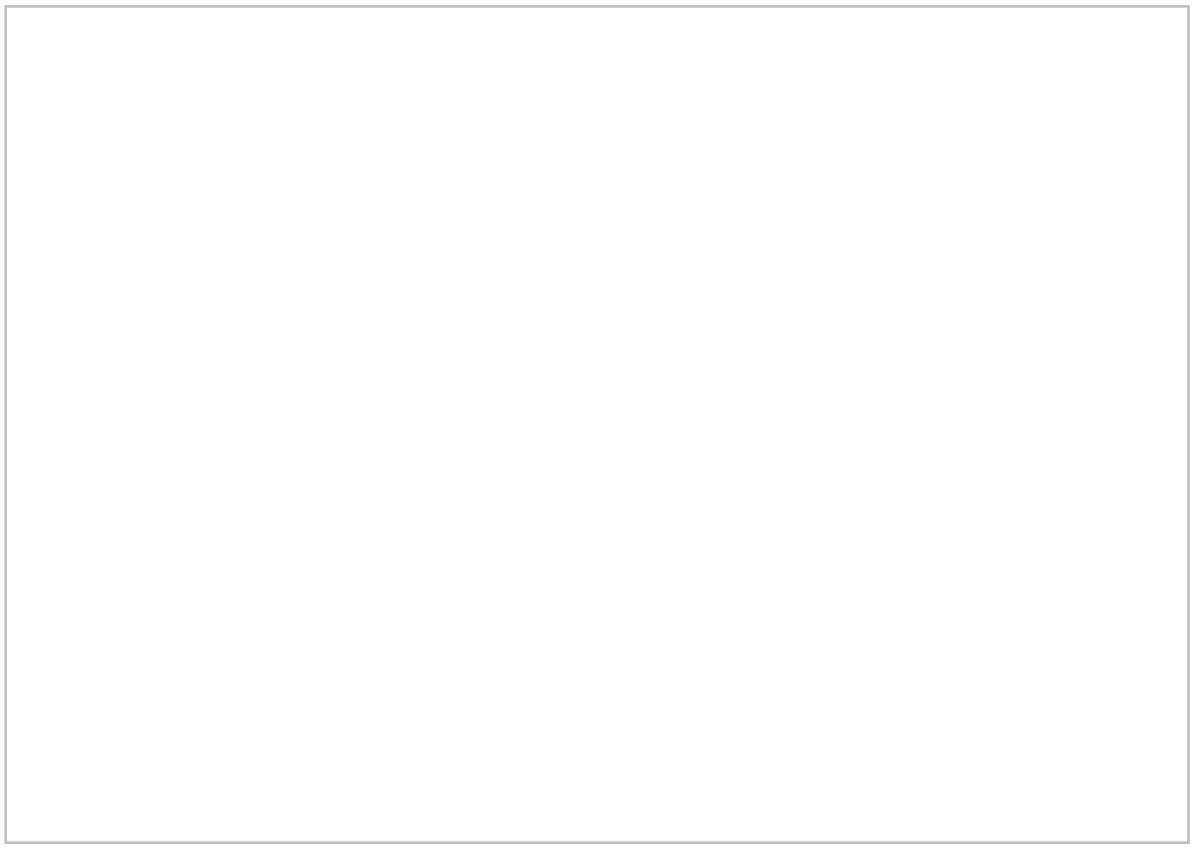

Figure 3 : Back view (1)

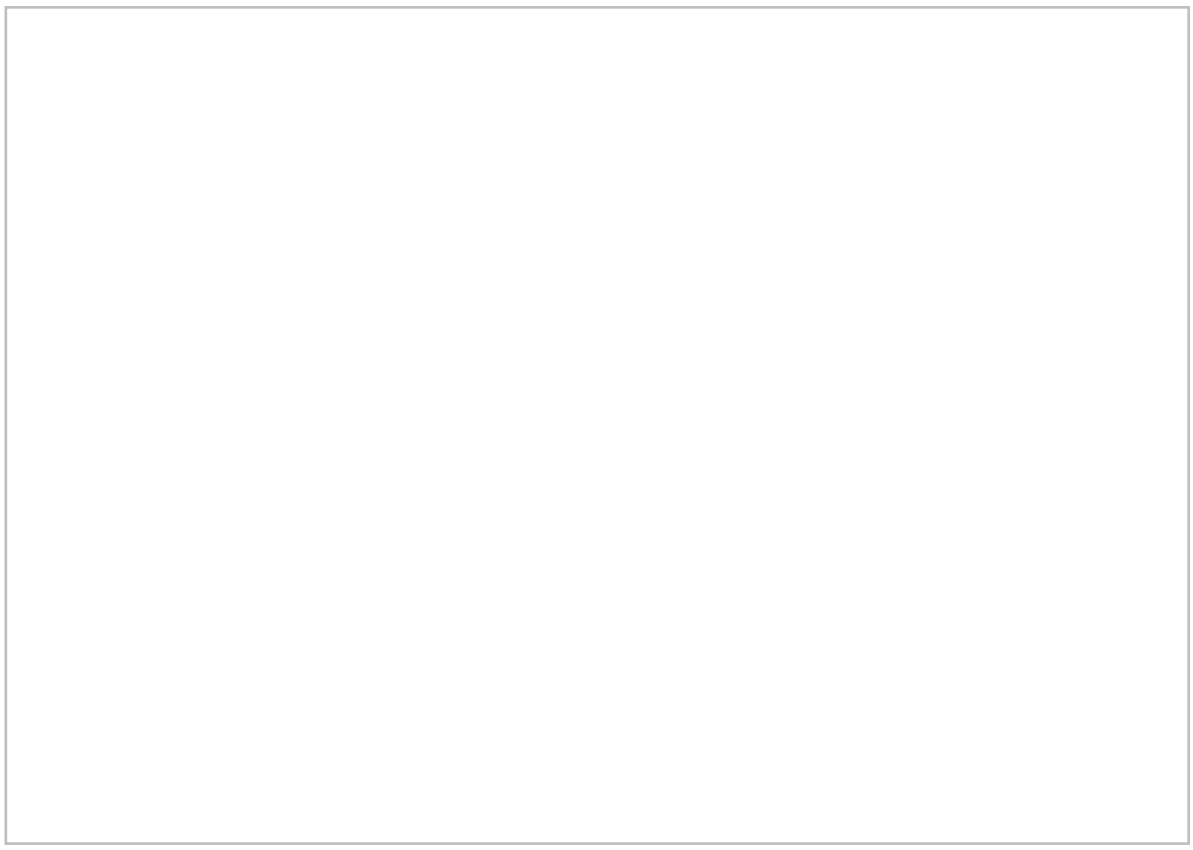

Figure 4 : Back view (2)

Note: Please use additional sheet if necessary.

- EV in different views (Cont'd):

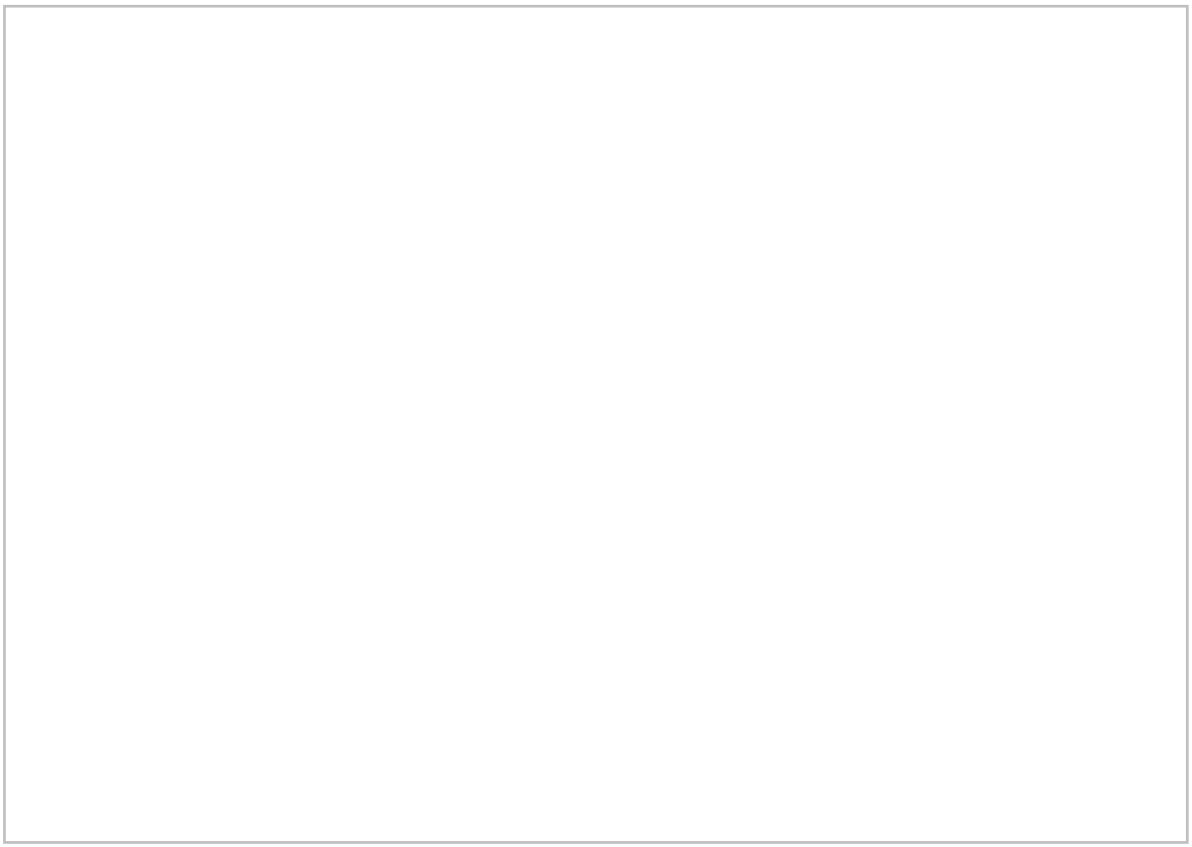

Figure 5 : Right side view (1)

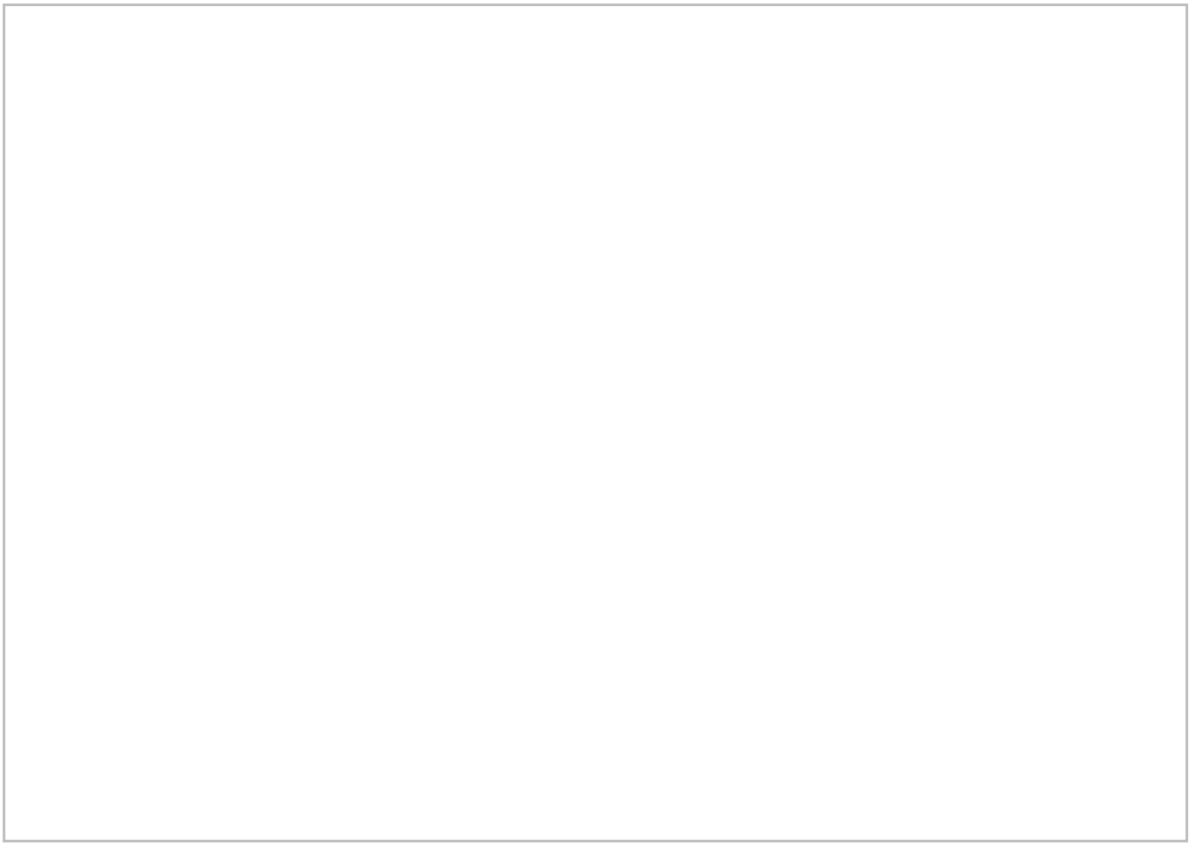

Figure 6 : Right side view (2)

Note: Please use additional sheet if necessary.

- EV in different views (Cont'd):

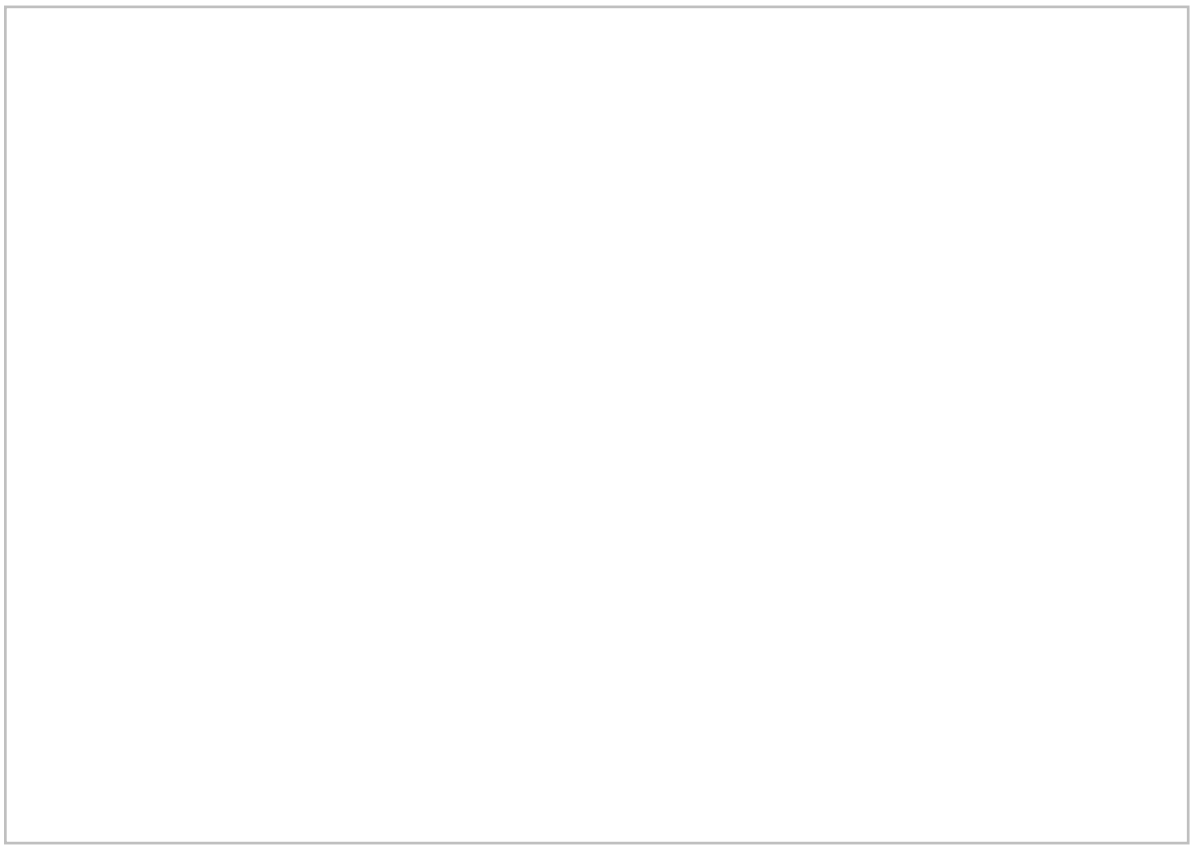

Figure 7 : Left side view (1)

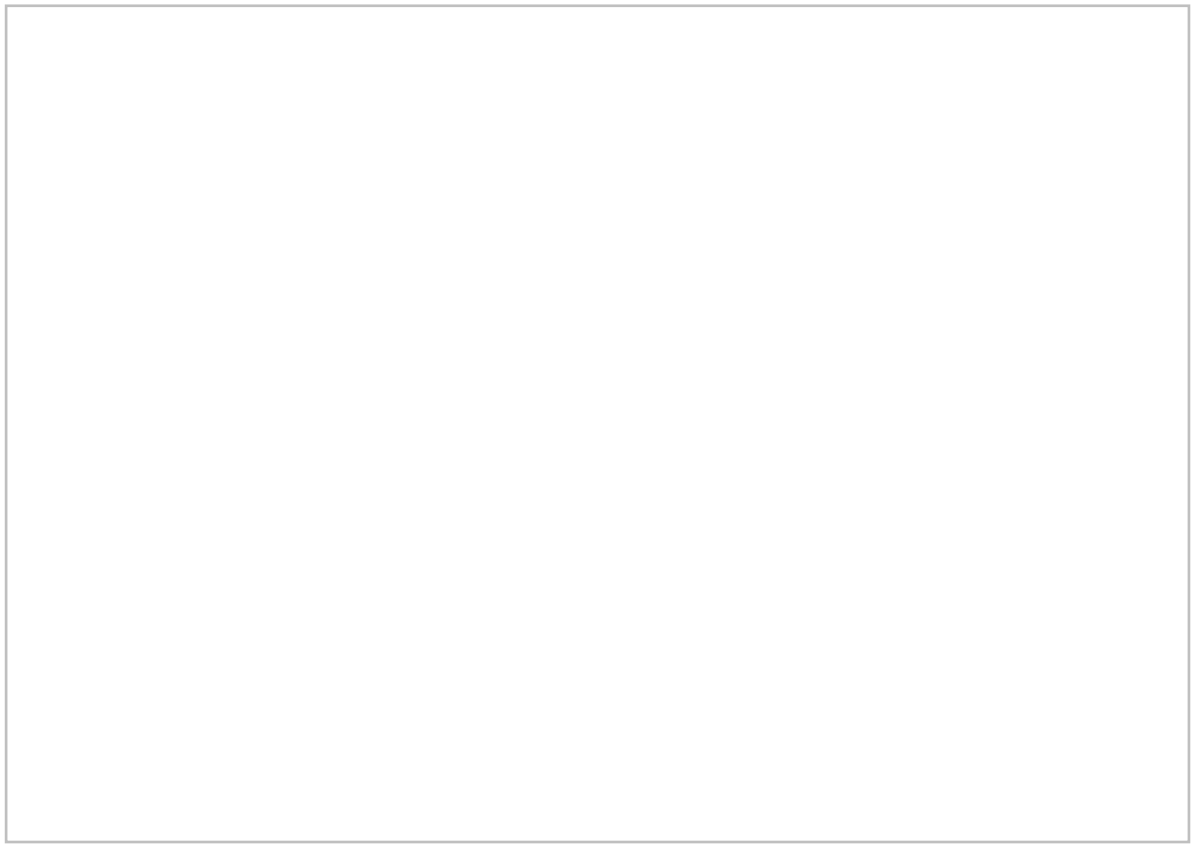

Figure 8 : Left side view (2)

Note: Please use additional sheet if necessary.

- EV charging cables:

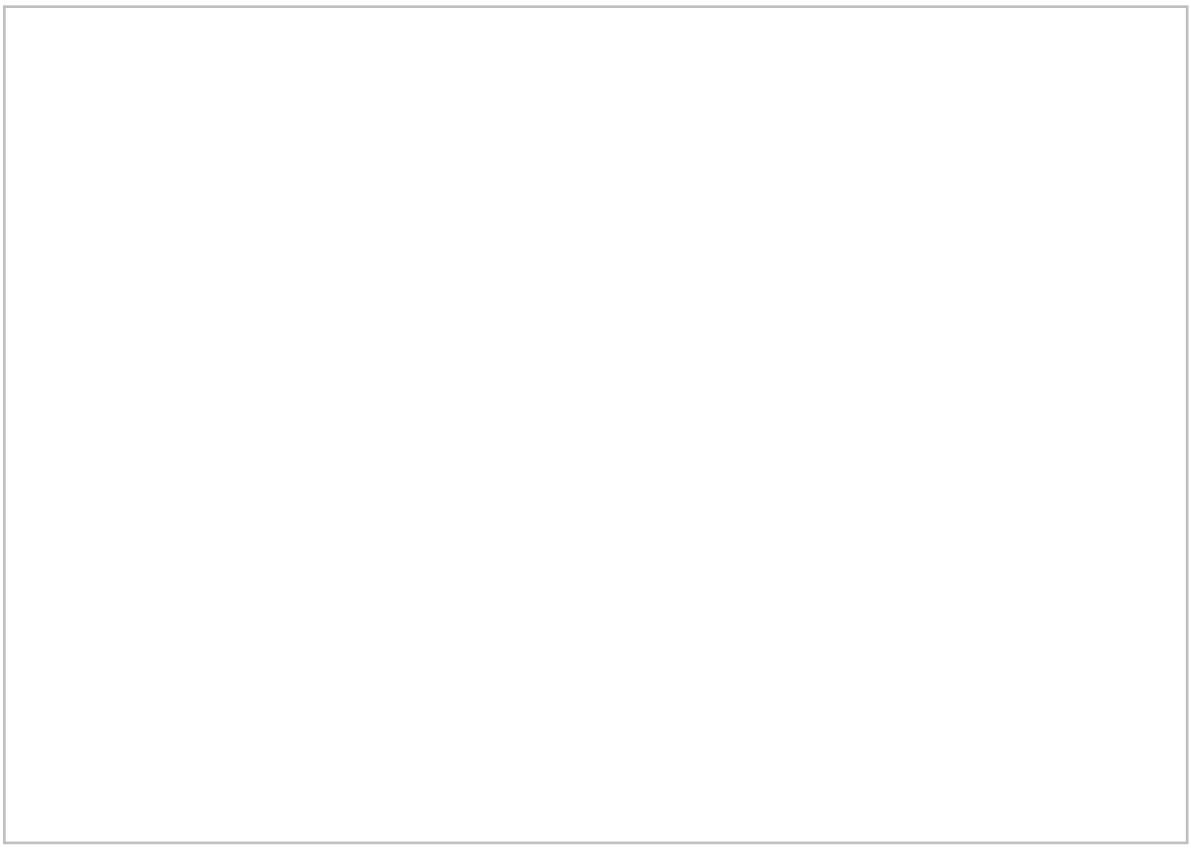

Figure 9 : HV cable & connectors routed vehicle inlet to inverter (1)

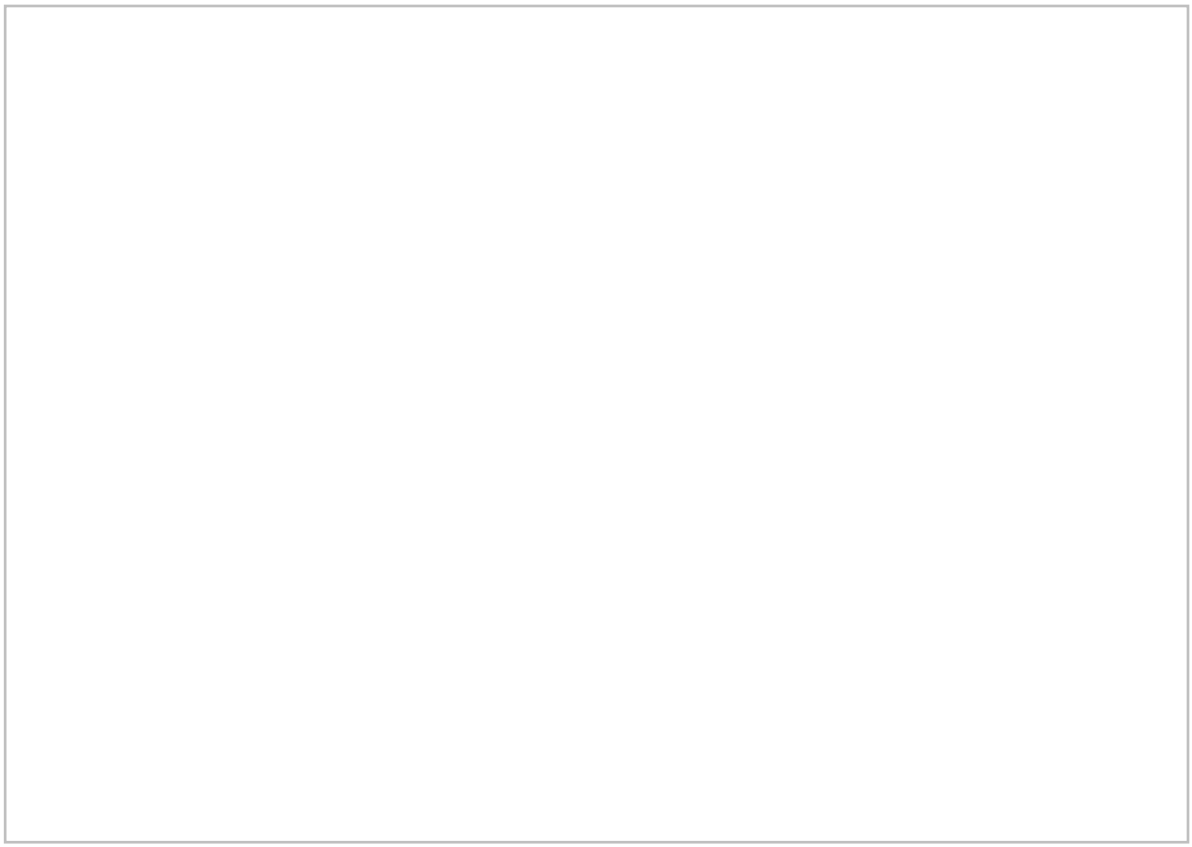

Figure 10 : HV cable & connectors routed vehicle inlet to inverter (2)

Note: Please use additional sheet if necessary.

- EV charging cables (Cont'd):

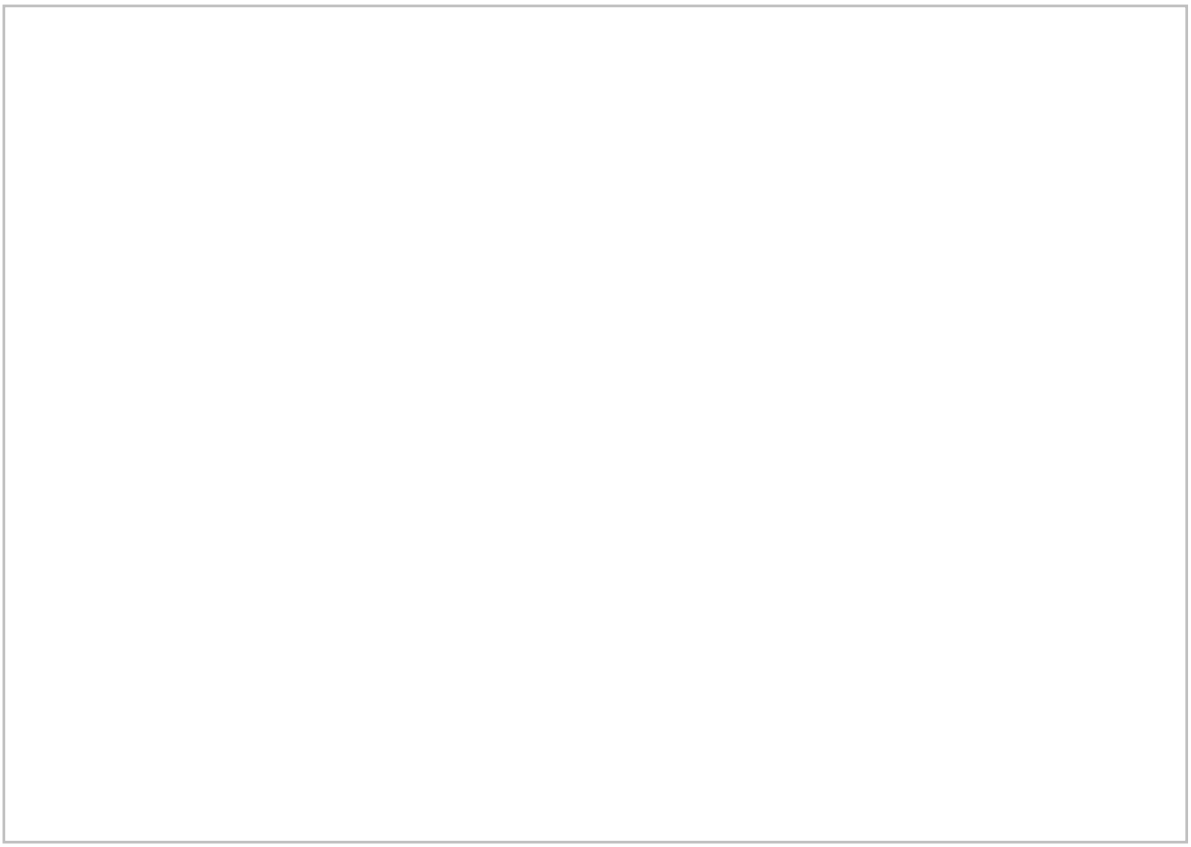

Figure 11 : HV cable & connectors routed inverter to battery (1)

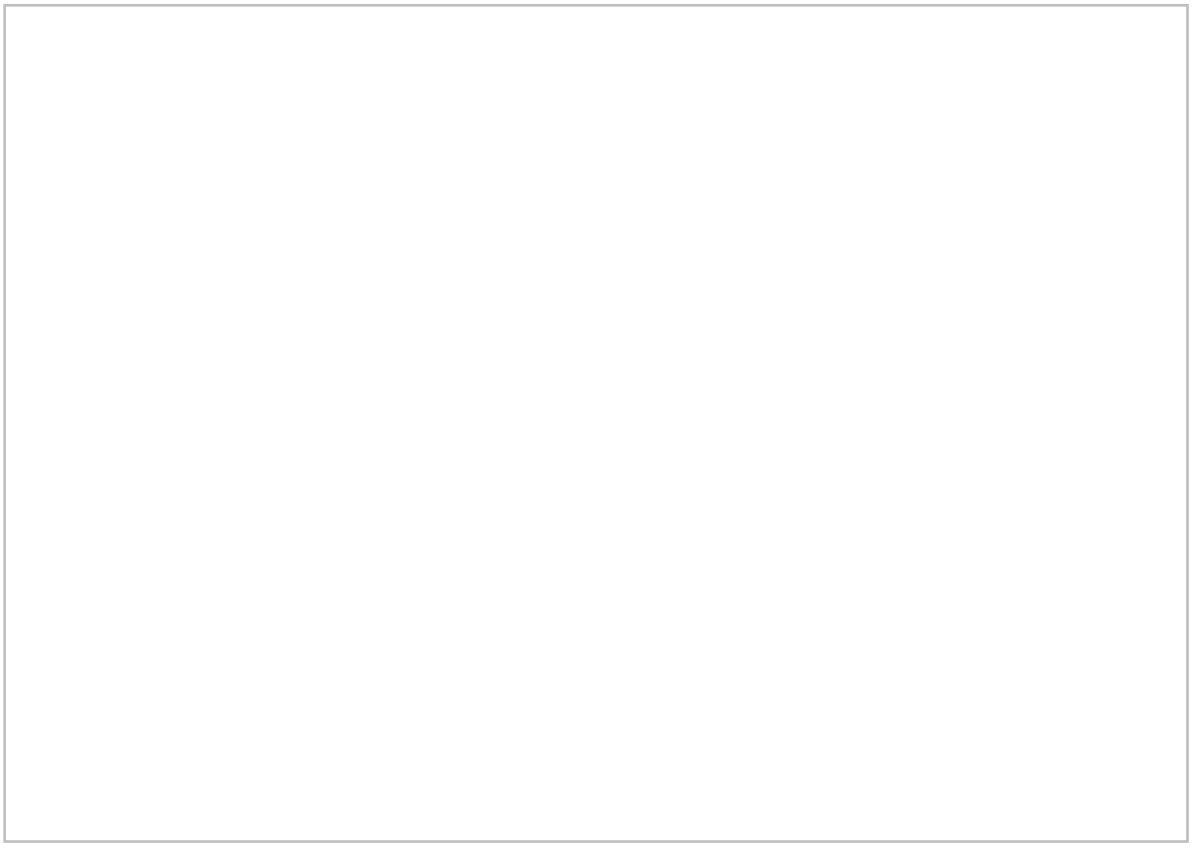

Figure 12 : HV cable & connectors routed inverter to battery (2)

Note: Please use additional sheet if necessary.

- Vehicle inlet(s):

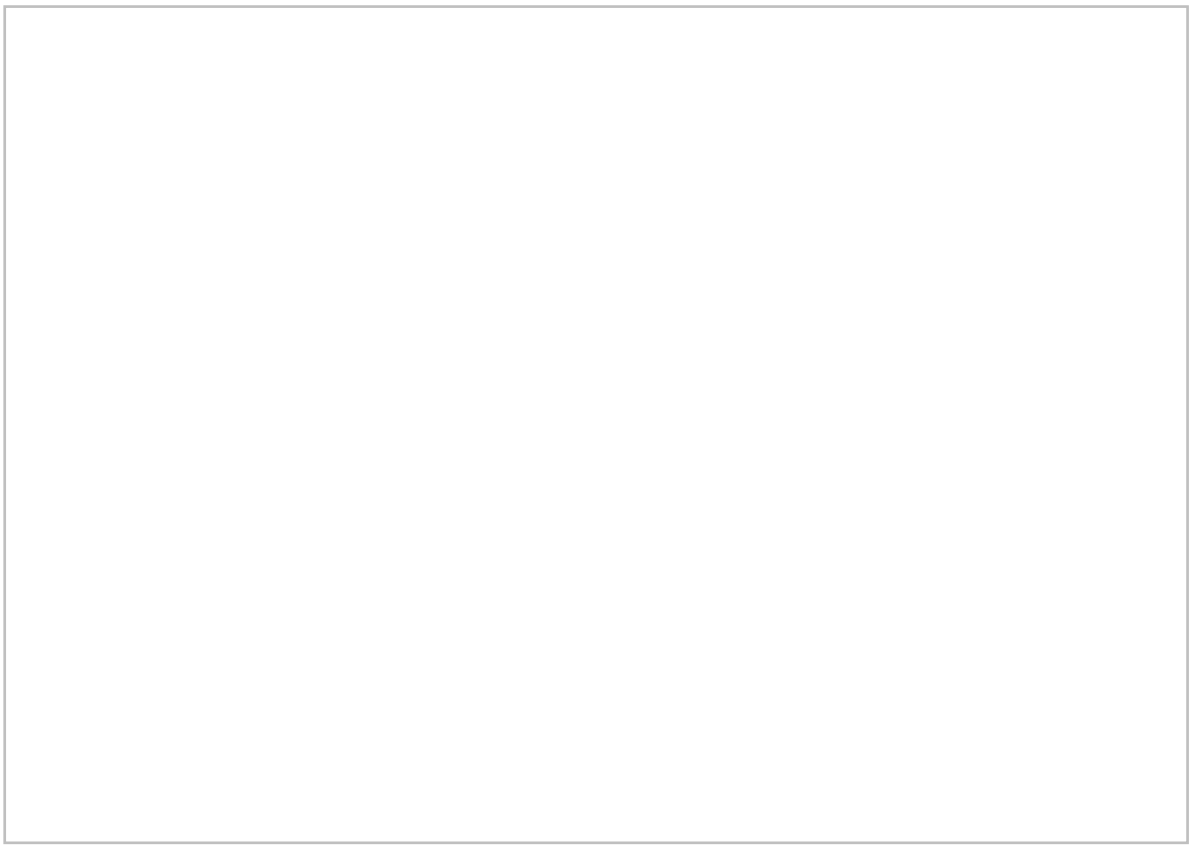

Figure 13 : Vehicle inlet / external charger socket (1)

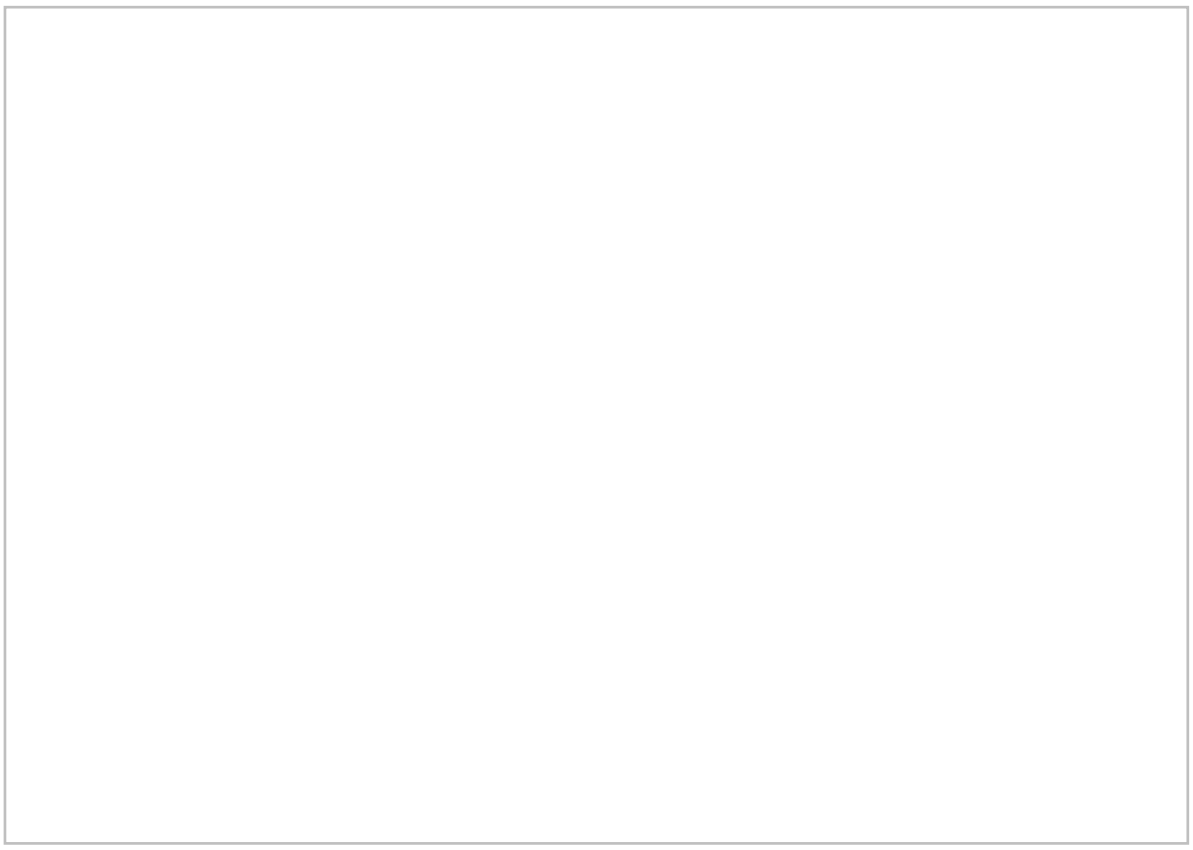

Figure 14 : Vehicle inlet / external charger socket (2)

Note: Please use additional sheet if necessary.

- Vehicle inlet(s) (Cont'd):

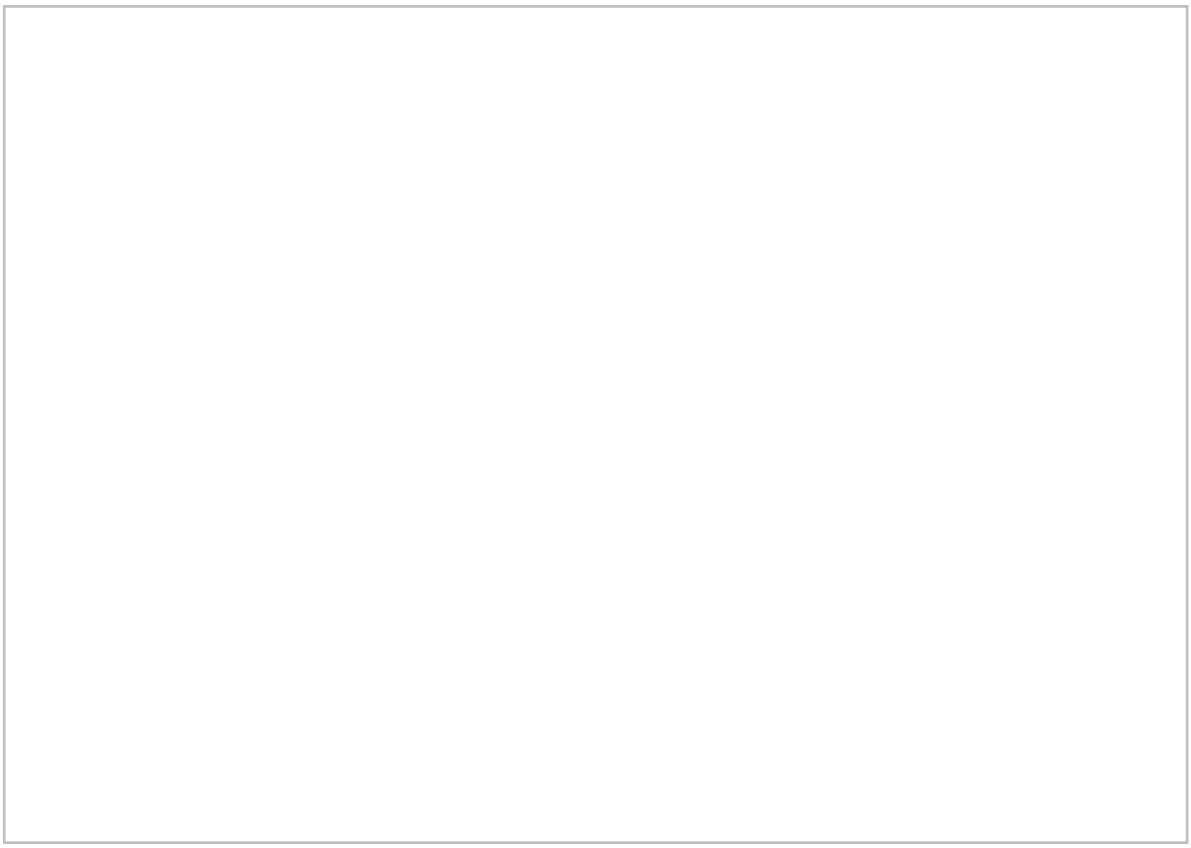

Figure 15 : External charger cable connector (1)

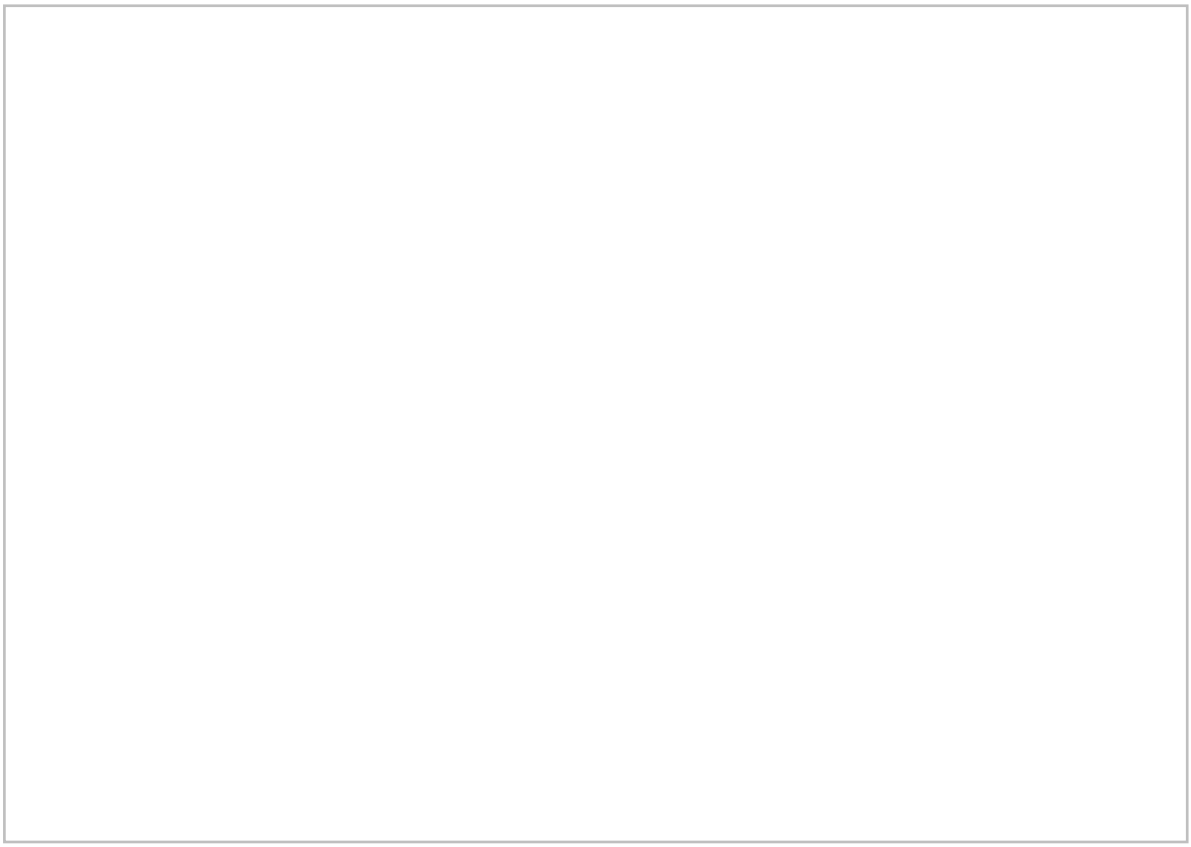

Figure 16 : External charger cable connector (2)

Note: Please use additional sheet if necessary.

- Name plate of the In cable Control Box (ICCB):

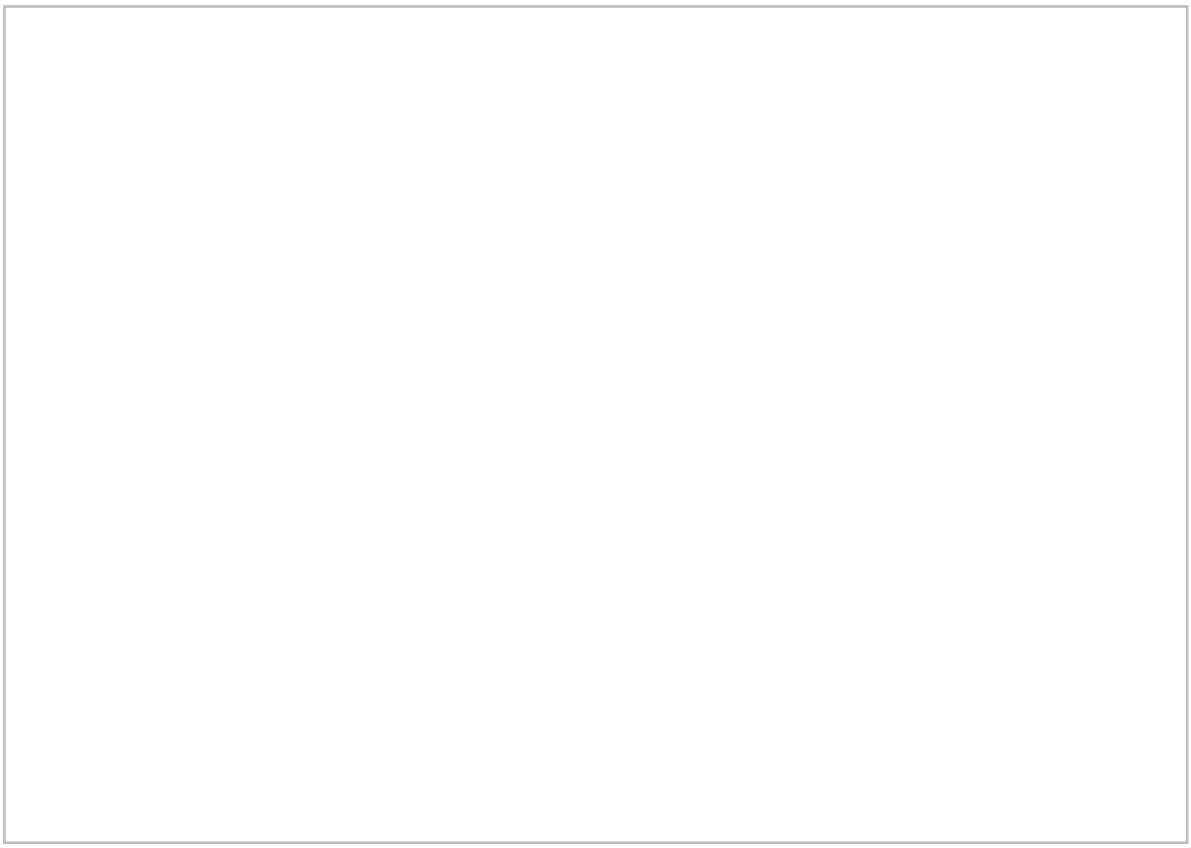

Figure 17 : Control box (ICCB) label (1)

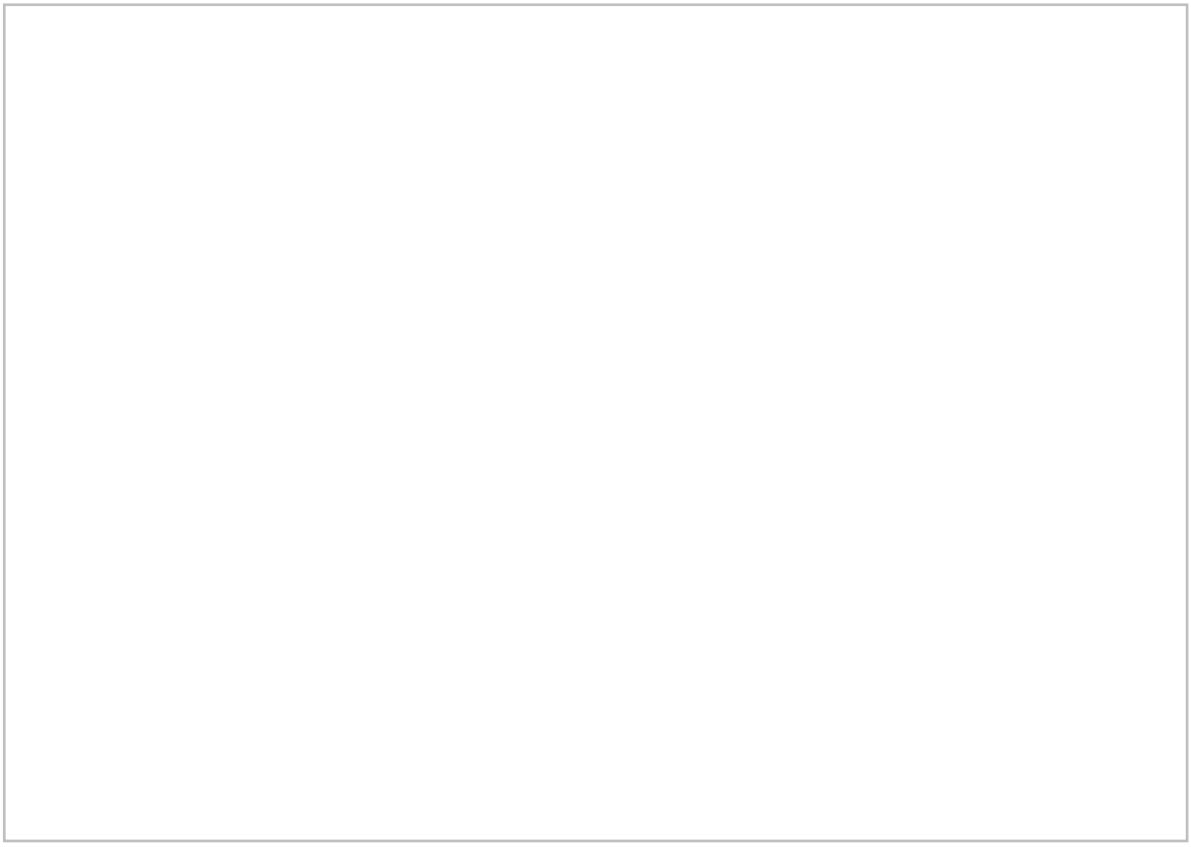

Figure 18 : Control box (ICCB) label (2)

Note: Please use additional sheet if necessary.

- _____

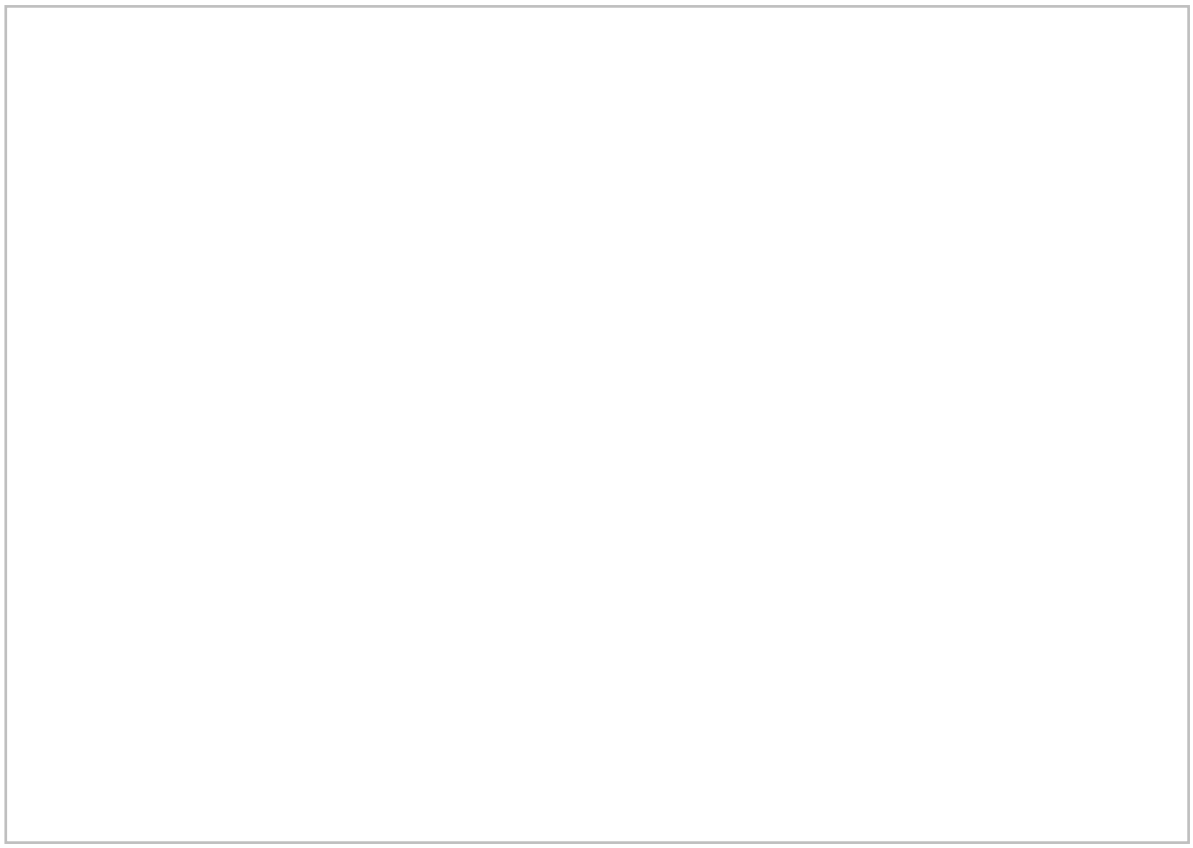

Figure _____

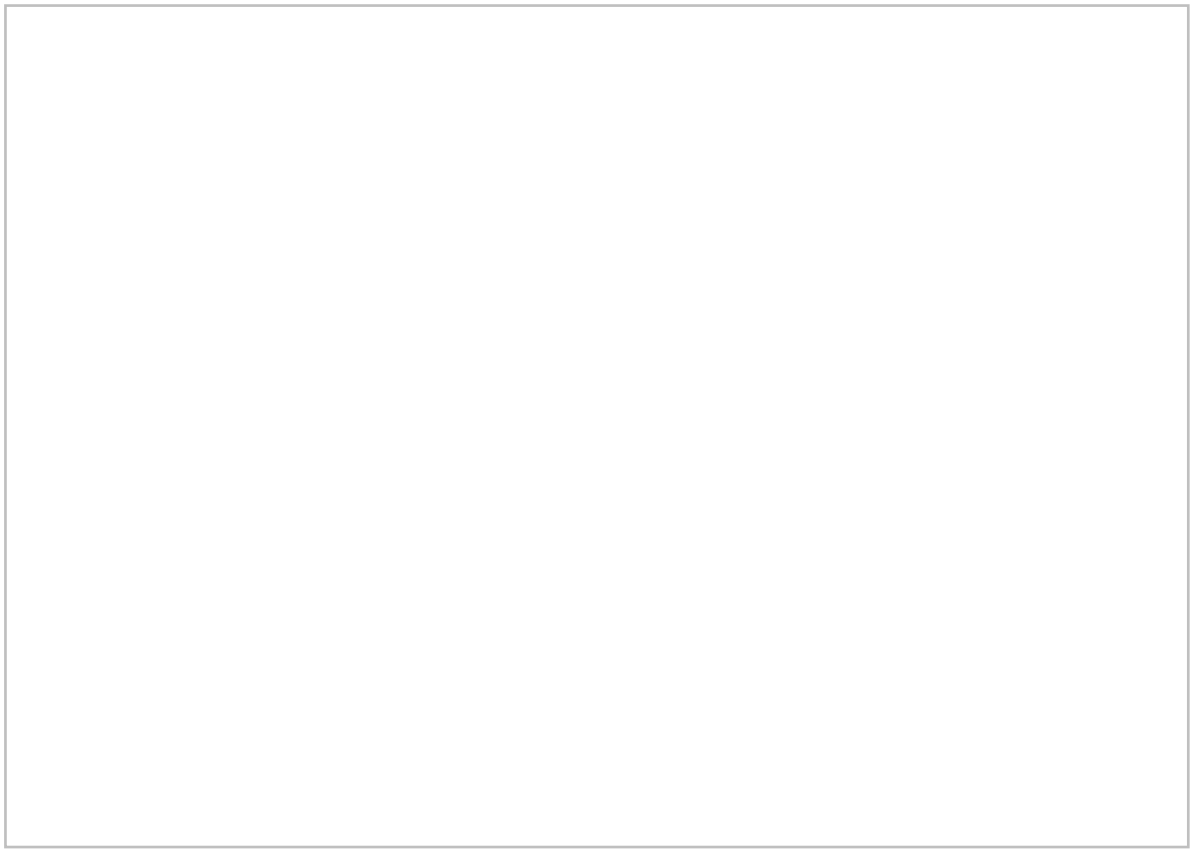

Figure _____

7.5 Declaration of the EV charging system including the RESS is suitable for safe and reliable operation under the local electricity supply system, i.e. 1 phase 220V, 50Hz or 3 phase 380V, 50Hz

The following information of EV charging system were found while carried out inspection:

- Charging system fact sheets
- Vehicle inlet
- AC-DC converter

Based on the facts in the inspection, we declare that the EV charging system is suitable for operation under the local electricity supply system.

(Please enclose relevant information)

Figure _____

7.6 Documentary proof for the vehicle movement by its own propulsion system shall be impossible as long as the connector of the external electric power supply is physically connected to the vehicle charging inlet. Physical testing supported with declaration of test result is acceptable.

(Documentary Proof / Physical testing result)

Figure _____

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7.7 Fact Sheet

車輛類別 Vehicle Classification	請選擇Please Select
廠名及型號 **備註:** 廠名及型號應與TA001表格一致(以上備註只適用於車輛類型評定申請) Vehicle Make and Model **Note:** Make and Model names should tally with that provided in TA001 (this note is only applicable to type approval submission.)	廠名 Make : 型號及版本 Type & Variant / Version : 市售名稱 Commercial Name :
電池容量(千瓦時) 及 種類 (例如：Li Fe SO4) Battery Capacity (kWh) and Type (e.g. Li Fe SO_4)	kWh 電池種類 Battery type: 請選擇Please Select
電池電壓 (伏特) Battery Voltage (V)	V
電池保養期(年) / (公里) Battery Warranty (year) / (km)	year(s) / 公里 km
續航里程 (公里) (NEDC / WLTP / 其他: 請註明) Driving Range (km) (NEDC / WLTP / For other standards, please specify)	公里 km 標準 Standard: 請選擇Please Select
充電標準 (例如 IEC，SAE，GB，CHAdeMO) Charging Standard (e.g. IEC, SAE, GB, CHAdeMO)	交流電 AC - 請選擇Please Select 直流電 DC - 請選擇Please Select
車輛充電輸入電流 (安培)及功率(千瓦) **備註:** 如空間不足，請另外加紙書寫。 Charging Input Current (A) & Power (kW) to Vehicle Inlet **Note:** Please use separate sheet if space is insufficient.	請選擇Please Select A 請選擇Please Select kW 請選擇Please Select A 請選擇Please Select kW 請選擇Please Select A 請選擇Please Select kW 請選擇Please Select A 請選擇Please Select kW
充電時間 (小時) **備註:** 充電時間應與各自的充電電流相對應。 Charging Time (hour) **Note:** The figure of charging time should correspond to the respective charging current.	請選擇Please Select hrs. 請選擇Please Select 例e.g.: 10-80% ; 0-100% 請選擇Please Select hrs. 請選擇Please Select 例e.g.: 10-80% ; 0-100% 請選擇Please Select hrs. 請選擇Please Select 例e.g.: 10-80% ; 0-100% 請選擇Please Select hrs. 請選擇Please Select 例e.g.: 10-80% ; 0-100%

運輸署 Transport Department

附件 3 Annex 3

內置充電器輸入電流(安培)(單相/三相)及功率額定值(千瓦) Input Current (A) (1-phase / 3-phase) and Power Rating (kW) of On-board Charger	☐ A 請選擇Please Select ☐ kW ☐ A 請選擇Please Select ☐ kW 其他(請註明) For others, please specify
電動機額定值(千瓦)及最大扭矩(牛頓米) Motor Rating (KWh) and Maximum Torque (Nm)	最大功率 Maximum Power / 額定功率 Rated Power / 最大扭矩 Maximum Net Torque Front 前: ☐ kW ☐ kW ☐ Nm Rear 後: ☐ kW ☐ kW ☐ Nm Combined 合併: ☐ kW ☐ kW ☐ Nm
充電模式選項 (例如: 模式 1/ 模式 2/ 模式 3/ 模式 4) Charging Mode Option (e.g. Mode 1/ Mode 2/ Mode 3/ Mode 4)	請選擇Please Select 請選擇Please Select 請選擇Please Select 請選擇Please Select
汽車插座標準 (例如: IEC 62196 type 2) **備註:** 連接器和汽車插座的配置應包含於「廠方標準」選項內(例如: 廠方標準)  Standard of Vehicle Inlet (e.g. IEC 62196 type 2) **Note:** Pin Layouts of the vehicle connector and inlet shall be included in "Factory Standard" option. (e.g. Factory Standard) 	交流電 / 插座 1 AC / Inlet 1: 其他(請註明)For others, please specify 直流電 / 插座 2 DC / Inlet 2: 其他(請註明)For others, please specify
座位數目(包括司機座位) Seating Capacity (Including Driver)	

本港汽車供應商資料 Details of Supplier of the Vehicle in Hong Kong	
本港汽車供應商名稱(中文及英文名稱)* Name of suppliers of the vehicle in Hong Kong (Both Chinese and English)*	
聯絡人員 Contact Person	
電話 Telephone*	
該電動車的網址(中文及英文版本)* Website's hyperlink for the concerned EV (Both Chinese and English)*	
電郵 E-mail*	
電動汽車生產地 EV manufactory economy	

*資料將被刊登於環境保護署網頁。Information will be posted at EPD webpage.