

UECC Electric Vehicle Carriage

Safety of our Crew and Vessels is our Priority.

Carriage of Electric vehicles on all UECC operated vessels is governed by the following Policy, Guidelines / Recommendations.

Policy:

High Voltage Battery State of Charge (SOC) Minimum 20% - Maximum 50%

- The 20% minimum is to ensure basic driving and operation of the vehicle for vessel load and discharge operations.
- The 50% maximum is set to avoid unnecessary carriage of charge and power during marine carriage.

UECC reserves the right to refuse shipment of any vehicle which does not fall within the SOC percentage levels.

Vehicles with damage to the High Voltage battery are not permitted for loading under any circumstances.

UECC reserves the right to refuse shipment of any Vehicle if deemed unsafe.

Re-Worked units – 24hr Dwell time.

- A minimum **24hr** Dwell time is required between the completion of any High Voltage Battery re-work and loading on any UECC vessel. (Excluding standard HV battery charging).
- OEM must confirm in writing that the re-worked unit is in full-working order.

Marine Carriage safety.

The following operations are **not** permitted onboard UECC vessels:

- Charging of Vehicles during the sea-passage.
- Replenishing of liquids and cooling agents for batteries.
- Replacement of batteries.
- Maintenance work of any description to any Vehicle.

Guidelines / Recommendations:

Booking, Identification, Receipt, Loading of EVs.

- All Vehicles are to be received fully functional, self-propelled, safe to drive, damage free, and in clean condition.
- All bookings should detail Make, Model, Vin, specific EV type (BEV, PHEV, HEV, FEV).
- All vehicles should have an identification marking on the windscreen, detailing battery type (BEV, PHEV, HEV, FEV).
- Basic Handling and Emergency Safety instructions should be provided by OEM and made available inside the vehicle.
- Vehicles with low ground clearance or minimal front and rear approach angles should be checked for acceptance prior booking and have an identification marking on the windscreen, detailing low ground clearance.
- Vehicles which are set to 'transport mode' through the logistics chain must have sufficient battery power to safely operate the basic functions of the Vehicle.
- All hybrids should be driven on the 'ICE' with the electric mode disengaged.

Non-Starters.

- Vehicles with flat Low Voltage batteries (12v or 24v) can be accepted based on normal jumpstarting procedures.
- Vehicles with flat High Voltage batteries must be recharged to a minimum 20%.

Towing.

- Towing can be accepted basis all wheels raised off the ground and that there is no fault with the HV battery. Piggy-back carriage on Mafi roll trailer, bolster or other may be accepted with prior agreement.

The Shipper is responsible for all risks and costs associated with towing, piggyback, and/or any necessary technical assistance. Trained / certified personnel must do all technical work.

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Guidelines / Recommendations:

HV Battery Protection:

UECC recommends the following to safeguard batteries:

- High Voltage battery pack sitting lower than the visible door sill should be clearly labelled on the windscreen detailing HV battery low ground clearance. Pre-notice of such units must be checked for acceptance prior booking.
- OEMs are advised to use Spring blocks or other methods controlling suspension movements and use battery protection covers to function as a damage prevention measure towards low ground clearance.
- Battery Management systems should send out a warning signal when irregularities are detected.
- The Battery casing should be built with fire retardant materials.
- Build with individual cell housings for protection against thermal runaway spreading.
- Build with an integrated cooling heat sink and pressure relief exhaust system for venting gases.

Certification UN 38.3 Lithium Battery.

- Lithium-ion batteries must have successfully passed pressure, temperature, crush, and impact tests as described in the UN 38.3 code for transport of lithium-ion batteries. Certificate to be provided to UECC if requested.

Emergency Response.

- Guidance specific to each EV model is vital for Emergency responders.
- Basic Emergency response guidelines should be present on the passenger seat of each vehicle.

OEMs are requested to provide response guidelines detailing quick handling of the Vehicle, firefighting measures with detail of any specific PPE required for heat, flame, and/or toxic gas which may be emitted from the Vehicle.

For the first responder, having quick access to such Emergency response guidelines collected from the same type of vehicle in proximity may allow for a quicker and safer assessment of actions to be taken.

- All vehicles should have a specific label or marking on the windscreen identifying the type of EV (BEV, PHEV, HEV, FEV) for quick and easy identification to the first responders.
- All Vehicles are becoming more technologically advanced and may have the possibility to transmit 'live' data to the OEM. If any HV battery faults are detected, these should be reported to UECC immediately as part of an 'early warning detection process.'
- If the BMS detects any kind of irregularity, activation of a warning signal / alert should occur. The BMS could activate a constant horn blowing alerting personnel of immediate need to assess the situation.

Breach or Non-Compliance

The shipper, and/or the OEM always has the duty of care to ensure that all Vehicles are safe and suitable for marine carriage. In the event of a unit not meeting the abovementioned EV Policy, UECC reserves the right to refuse shipment, with UECC staff or representative having final decision if a unit can be shipped. Where any Vehicle fails to meet the abovementioned conditions during loading, shipping, transshipment and/or discharge, UECC reserves the right to engage any third-party assistance in either bringing the Vehicle up to UECC shipping standards, or removal from a vessel by whatever means entirely at Shippers liability and cost. Due to the nature of any secondhand Vehicle, claims for damages are not accepted. Conditional disputes may be considered only if the damage is clearly proven to have occurred in UECC marine transit.

Definitions.

EV's - Electric Vehicles (including POV EV's, Cars, Vans, Buses, Trucks, Motorcycles and/or any other form of electric battery powered vehicle. **POV** – Privately Owned Vehicles. **BEV** - Battery Electric Vehicles. **PHEV** - Plug-In Hybrid Electric Vehicles.

HEV – (Self charging) Hybrid Electric Vehicles. **FCEV** - Fuel Cell Electric Vehicles. **ICE** – Internal Combustion Engine, (Together the "Vehicles").

OEM's – Original Equipment Manufacturers. **Piggyback** – Carried on truck, trailer, Mafi, or bolster. **PPE** – Personal Protection Equipment. **BMS** – Battery Management System. **SOC** – State of Charge - the level of charge relative to its capacity.

UECC – United European Car Carriers. **UECC vessel** - both UECC owned and chartered/operated vessels.