UECC Electric Vehicle Guideline 2022.

In the unlikely event of an incident, accident, or emergency on board, which may be directly or indirectly related to any type of Vehicle or Ships machinery, Fire is a major concern. Preventative actions to mitigate the chance of fire are of upmost focus for the safety of our Crew, Vessels', and your cargo.

UECC recommend the following EV guideline applicable for carriage on all UECC vessels.

State of Charge (SOC).
High Voltage Battery SOC levels with a Minimum 20% and Maximum 40% during the marine transport.

The 20%-40% range should ensure basic driving and operation of the vehicle for vessel load and discharge operations.

The 40% limit is to avoid unnecessary carriage of charge and power during marine carriage.
Limiting the SOC can act to mitigate degradation of the battery thermal stability, reduce possibility of Battery reignition and minimize Stranded energy.

Vehicles which can be set in to a 'transport mode', which run on a 'power down' modus throughout 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.

Booking of EVs
All bookings should detail with following: Make, Model, Vin, specific EV type (BEV, PHEV, HEV, FEV).
Vehicle Basic Handling and Emergency Safety instructions should be provided by OEM prior loading.
Vehicles with Low ground clearance, or minimal front and rear approach angles, should have placard or stickers on the vehicle to easily identified such units.

Any re-work undertaken on the high voltage battery, must be declared to UECC prior loading.
A **minimum** 24hr Dwell time is required between the completion of any re-worked Vehicle and the loading on any UECC vessel.
OEM must confirm in writing that the re-worked unit is in full working order.

Vehicles with High Voltage battery damage are not permitted for loading.
EVs which have sustained impact, crushing, penetration, leakage, or short circuit which may have damaged or affected the integrity of High Voltage battery will **NOT** be permitted for loading.

Non-Starters - Vehicles with flat 12v batteries will be accepted based on normal jumpstarting procedures.

Towing or 'Piggy-back' carriage may be available with prior and written approval from UECC.
Towing instructions detailing vehicle transmission and specific methods must be received in advance.

Shipper is responsible for all risk and cost associated for towing, piggyback, and/or any necessary technical assistance.
All technical work must be done by trained / certified personnel.

Receipt, Marking, Identification of EVs.
All Vehicles expected to be received fully functional, self-propelled, safe to drive, damage free, and in clean condition.

All Vehicles are requested to have clear and precise identification on the windscreen, either placard or other marker type, detailing battery type (BEV, PHEV, HEV, FEV), load port, discharge port.

All vehicles having low ground clearance, or minimal front and rear approach angles, should have placard or stickers on the vehicle to easily identified such units.

Loading of Vehicles
All Vehicles are expected to be loaded self-propelled.

Non-Starters - Vehicles with flat 12v batteries will be accepted based on normal jumpstarting procedures.

If jumpstart fails, Towing or 'Piggy-back' carriage may be available with prior and written approval from UECC.
Towing instructions detailing vehicle transmission and specific methods must be received in advance otherwise 'Piggy-back' carriage will be applied.

Shipper is responsible for all risk and cost associated for towing, piggyback, and/or any necessary technical assistance.
All technical work must be done by trained / certified personnel.

Vehicles found to be in damaged or deemed to be in unsafe condition at time of loading will not be loaded unless approved and method agreed by UECC.

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

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

Battery Protection:
EV batteries are commonly positioned under the vehicle between the 2 axles. In some cases, battery packs may sit lower than the visible door sill. This could lead to challenges with cresting and break over angles on vessel ramps and inner slopes.
Such vehicles should be clearly labelled drawing attention to the low ground clearance battery.
UECC request pre-notice of such units in the booking process with detail of the ground clearance, approach, breakover, and departure angles.
Spring blocks or other methods controlling suspension movements and use of battery protection covers may act as a prevention measure against damage to vehicles with low ground clearance.

UECC reserves the right to make any damage preventable measures at its own discretion.

UECC recommends following to safeguard batteries:
BMS should immediately send out a warning signal when irregularities are detected.
Immediate shut down if unexpected heat increase, voltage change or misbalance in cells/modules is detected.
Individual cell housings for protection against thermal runaway spreading.
Integrated cooling heat sink for each module and pressure relief and exhaust system for venting of gases.
Battery casing should be built with fire retardant materials to mitigate against external fire hazards.

Certification UN 38.3 Lithium Battery.
All Vehicles with a lithium-ion battery, must have successfully passed pressure, temperature, crush, and impact tests as described in the UN 38.3 code (certificate) for transport of lithium-ion batteries. Certification is to be provided to UECC if so requested.

Marine Carriage safety.
The following operations are not permitted onboard UECC vessels:

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

Emergency Response.
Guidance specific to each EV model is vital for Emergency responders.

OEMs are requested to provide Basic Emergency 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.
This Basic Emergency response guideline should be present on the passenger seat of each EV.

In a situation with an incident onboard a vessel, it may be a crew member who is the first responder.
Having quick access to such Emergency response guidelines collected from a same type of EV in proximity may allow for a quicker and safer assessment of the preventative and firefighting actions to be taken.

All EVs 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.

Vehicles are becoming more technologically enhanced with the possibility to transmit 'live' data to the OEM.
If any HV battery faults are detected, these must 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 should occur. The BMS could possibly activate a constant horn blowing alerting personnel of immediate need to assess the situation.
All OEMs are requested to advise if any such or similar 'early detection system' can be made available to the vehicles.

Fire detection and Fire Fighting systems:
UECC vessels apply Detection and Safeguards in accordance with SOLAS and Class Rules with Fire detection, suppression and ventilation systems routinely tested.
Fire detection systems consisting of Smoke Aspiration systems, Smoke detectors, Gas detectors along with visual inspections supported by handheld infrared Thermal thermometers.
Firefighting systems involving Hi Expansion Foam, Dry powder, water Hydrants and hoses, fire blankets and CO2 systems are available.

Clear identification of EVs, with onsite Basic Handling and Emergency response guidelines, combined with our fire detection and Firefighting systems, sets a precedence towards a best practice for detection and prevention.

Discharge of Vehicles

In case of a Vehicle not starting at time of discharge, normal jumpstart procedures will be applied to the 12V battery to provide sufficient energy to activate the HV battery system.

If jumpstart fails, the vehicle may be moved using go-jacks or other available towing facilities.
This is a safety requirement to minimize the risk of damage to the vehicle and those around it during the continuing cargo operation.
UECC accept no liability for resulting damage which may occur to vehicles requiring assistance in the discharge operation.

2nd Hand EVs.
All above mentioned details are also applicable for 2nd Hand / Private Owned Vehicles.

Breach or Non-Compliance

The shipper, and/or the OEM at all times 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 Guideline, 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 3rd 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. Condition disputes may be considered only if the damage is clearly proven to have occurred in UECC marine transit.

Definitions.

EV's - Electric Vehicles (including second hand & 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
BMS – Battery Management system.
SOC – State of Charge - the level of charge of an electric battery relative to its capacity.
UECC – United European Car Carriers
UECC vessel - both UECC owned and chartered/operated vessels.