











## Charging Interface Initiative e.V.

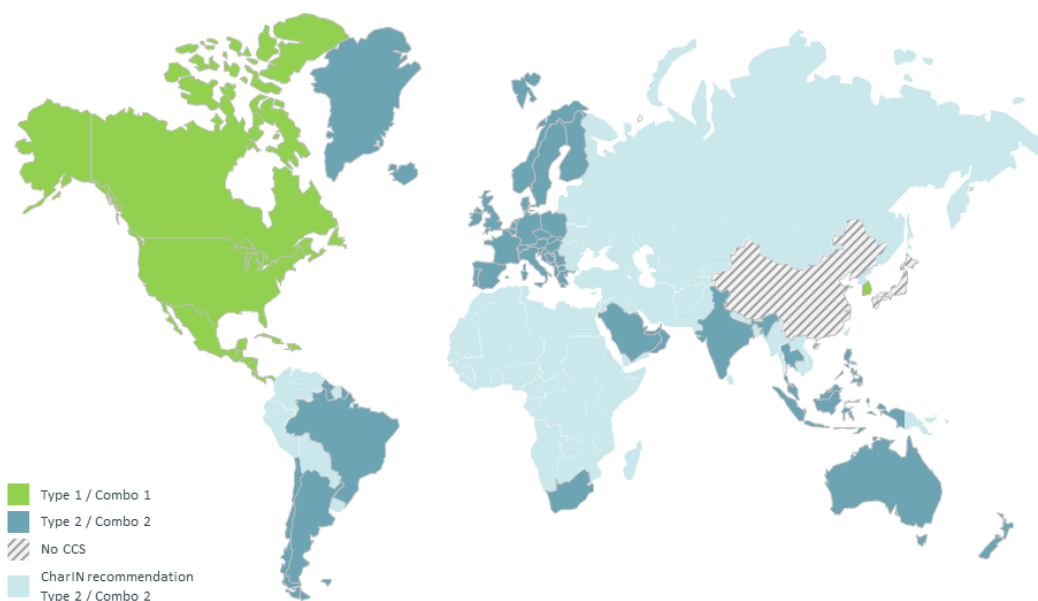
### A harmonized connector approach per geographical region facilitates EV market uptake

CharIN is dedicated to support and establish the Combined Charging System (CCS) as the global standard for charging Battery Electric Vehicles (EVs) of all kinds.

Whereas in Europe the CCS Type 2 /Combo 2 connector is the preferred solution for AC and DC charging, in North America the CCS Type 1 / Combo 1 connector prevails. While many countries already integrated CCS Type 1 or Type 2 into their regulatory framework, other countries and regions, did not pass regulations supporting a specific CCS connector type yet. Therefore, different CCS connector types are used in the different world regions.

In order to speed up the market uptake, cross-border travel and charging for commuters, deliveries and tourists as well as interregional trade of (used) EVs must be possible. Adapters would cause high safety risks with potential quality issues and do not support a customer friendly charging interface. CharIN therefore recommends a **harmonized CCS connector approach per geographical region** as outlined in the below map:

Region	Function	Connector	Inlet
EU	1-phase AC charging		
	3-phase AC charging		
NA	1-phase AC charging		
	High power DC charging via dedicated pins with Combo-2		



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**Benefits of the Combined Charging System (CCS):**

- Maximal charging power up to 350 kW (today 200 kW)
- Charging voltage up to 1.000 V and current greater 350 A (today 200 A)
- DC 50kW / AC 43kW implemented in infrastructure
- Integrated electrical architecture for all relevant AC and DC charging scenarios
- One inlet and one charging architecture for AC and DC to allow low overall system costs
- Only one communication module for AC and DC charging, Powerline Communication (PLC) for DC Charging and advanced services
- State of the art communication via HomePlug GreenPHY enables integration V2H and V2G