

<b>DOCKETED</b>	
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<b>Project Title:</b>	Vehicle-Grid Integration
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Empowering  
the **next level**  
of green mobility  
and energy.

CharIN – Charging Interface Initiative e. V.

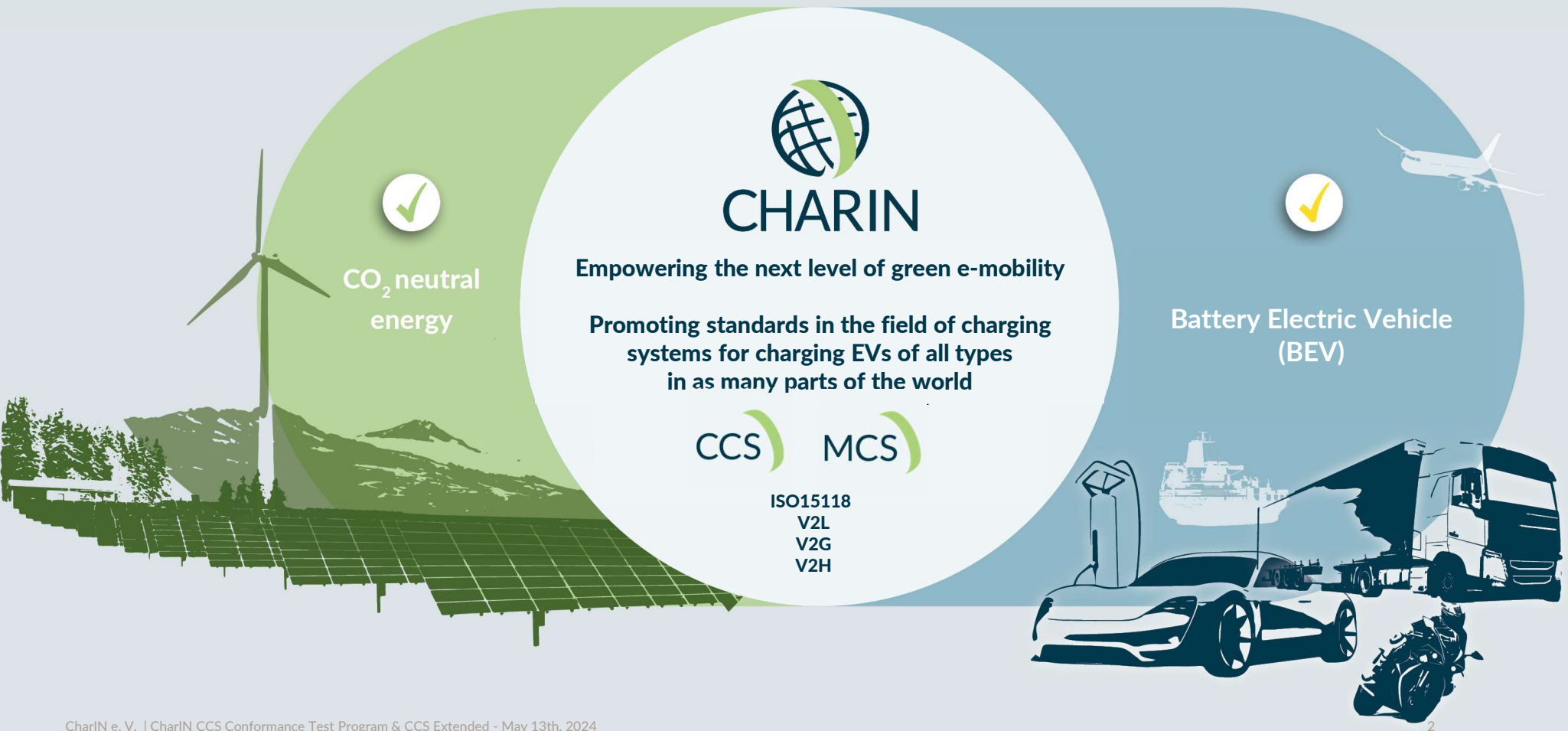
**CEC Virtual Conference**

**CharIN Conformance Test Program & CCS Extended**

**Michael Keller, May 13<sup>th</sup> 2024**

# General Goal

CO<sub>2</sub> Neutral Mobility



# CharIN's Mission

Contribution to the Conformance Program



Promoting standards in the field of charging systems for charging EVs of all types in as many parts of the world

1

**Spread the word**  
Promote awareness of consumer benefits of a common CCS standard and create more visibility

Conferences, Exhibitions & Round Tables



Social Media



CharIN e. V. | CharIN CCS Conformance Test Program & CCS Extended - May 13th, 2024

2

**Broadening the tent**  
Collaboration between involved parties in EV charging incl. regulators, industry, + EV related associations

Focus Groups



Projects



Partners

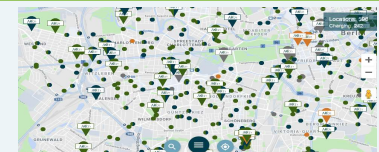


3

**See it means believe it**  
Proof of concept by live Testivals, Plug & Charge demonstration, customer journeys, and others to experts and a wider public



CharIN CCS Certified



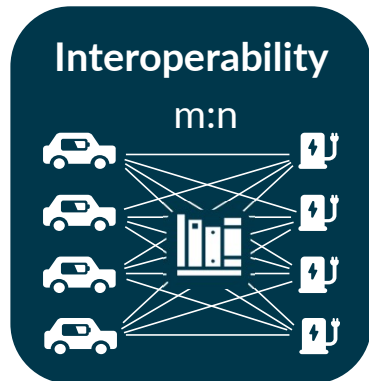
Dashboard ([here](#))

# Interoperability Festival

Features to Test and added Value of CharIN



## Festivals



- ✓ Communication protocols
- ✓ Plug & Charge (end-to-end)
- ✓ Smart charging
- ✓ Bi-directional power transfer
- ✓ Security testing (Pentesting)
- ✓ CCS, MCS, NACS, ...

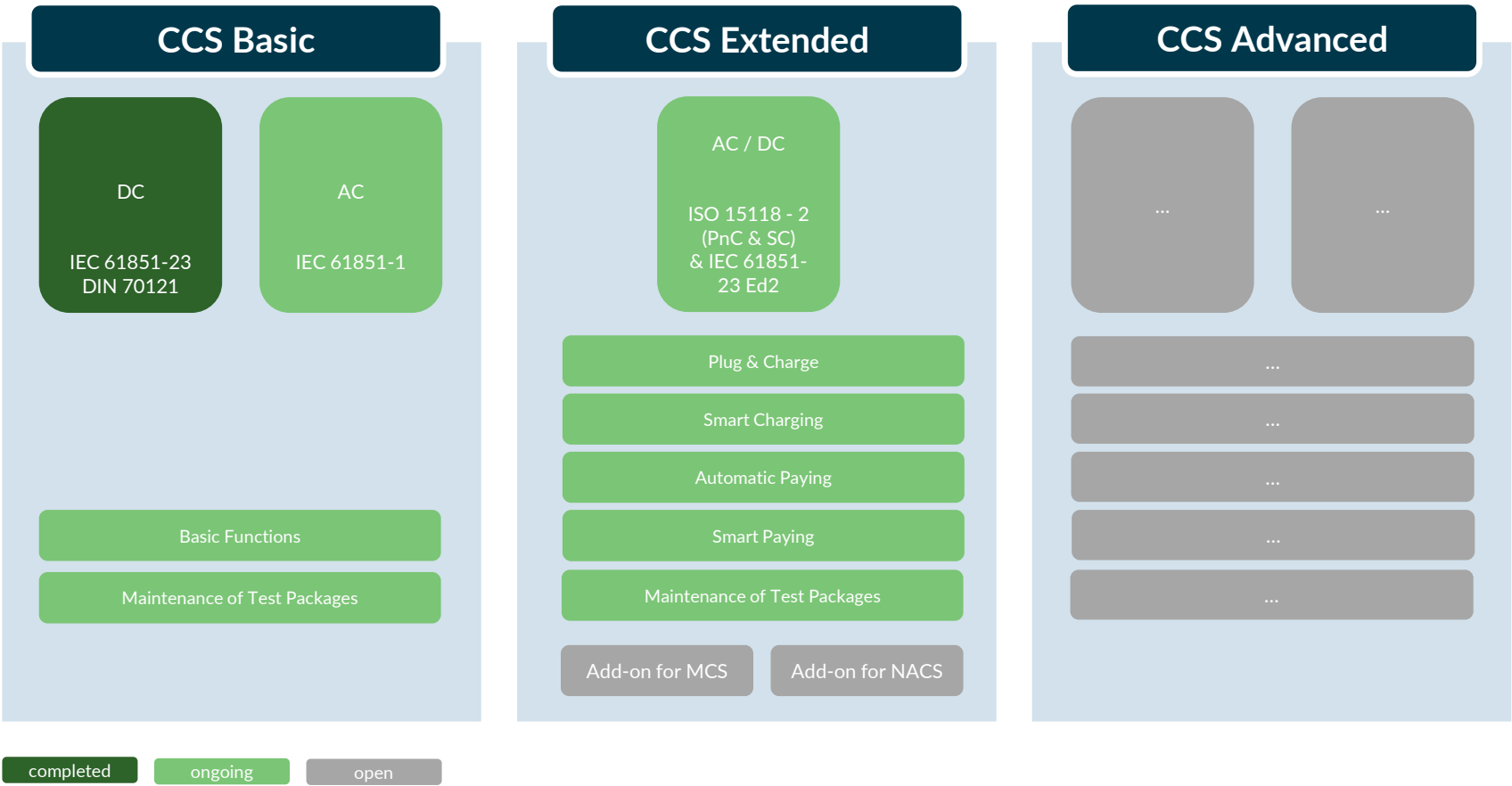
CharIN Implementation Guides, Feedback to standardization, filling the white spots of specification; Supporting Trust into standards

User orientation, Functionality, Ease of Charging (e.g. PnC), Quality, Safety, Security

## CCS Step Model

CCS Basic	Basic Functions
	AC Charging
CCS Extended	DC Charging (incl. HPC = High Power Charging → CharIN Powerclass)
	Smart Charging
	Local Load Balancing
	Local Load Balancing w Data connection
	Online Load Balancing
	Automatic Paying
	Plug and Charge (ISO 15118)
	Smart Paying
	Payment app (MSP = Mobility Service Provider)
	Payment app (ad hoc)
tbd	Credit Card (EIM = External Identification Means)
	RFID (EIM = External Identification Means)
CCS Advanced	Vehicle-to-Vehicle Charging
	Grid Integration Level V2X
	Bidirectional Charging
	Aggregated Bidirectional Charging
	Automated Connection Device (ACD)
	ACD-S (Automated Conductive Device - Side coupler)
	ACD-U (Automated Conductive Device - Underbody coupler)
	Pantograph
	WPT (Wireless Power Transfer)

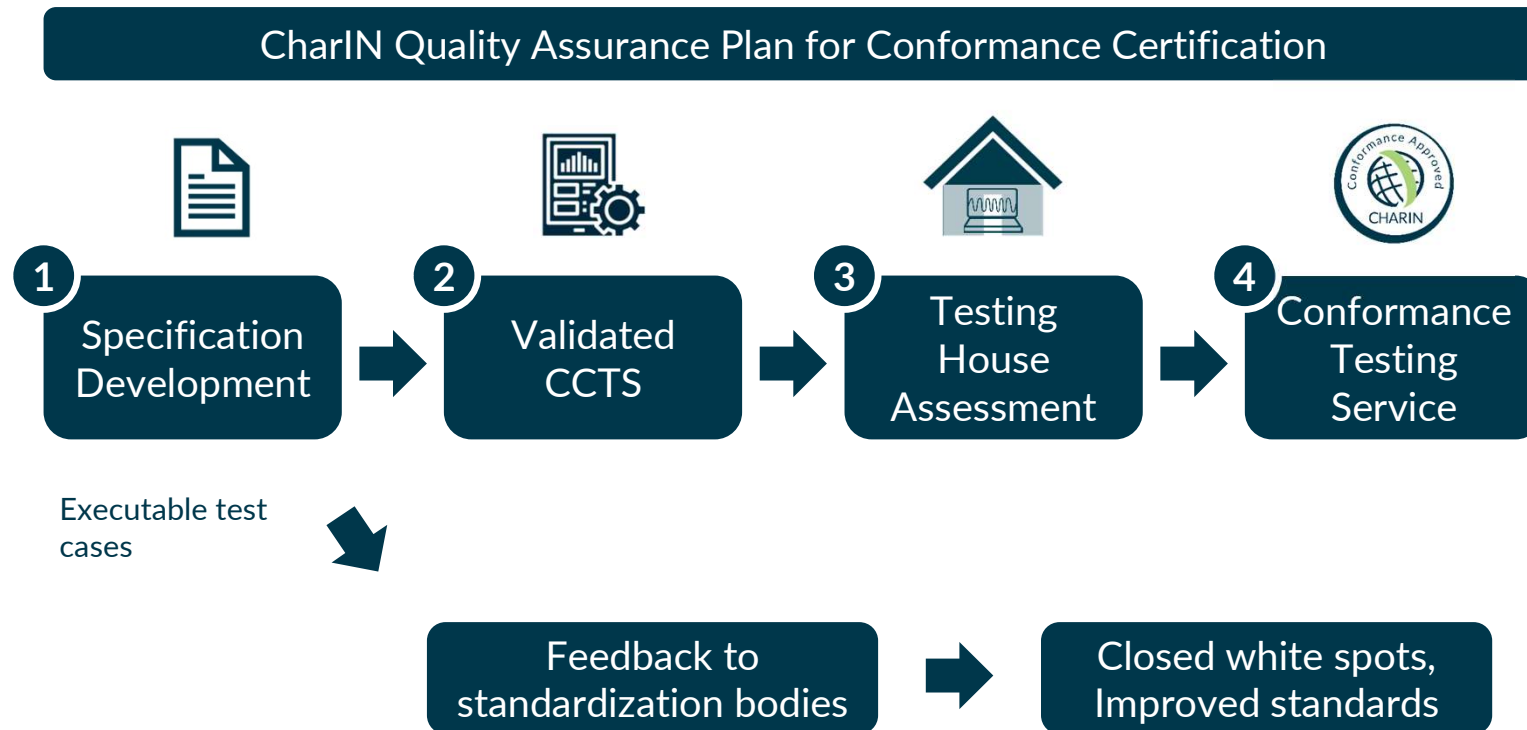
# CCS Step Model and Scope of Packages





# Conformance Test Process Overview

How CCS Extended would be made available and used



# Dissemination of CCS Certification

Requirements and Additional Efforts - How to make CharIN Conformance Certification successful



## Requirements

Conformance certification is able to indicate interoperability, but currently not required.

The main goal for CharIN is to create the awareness of the importance and the benefits of conformance certification.

**CharIN Conformance Certification needs to become a requirement of CPO tenders and for public funding.**

## Benefits of becoming certified:

- Quality Label as USP and competitive advantage for the EVSE product OEM
- Reduced service costs for the operator
- Increased customer satisfaction
- Safer and more profitable investments for investors
- Contributes to the overall adoption of eMobility

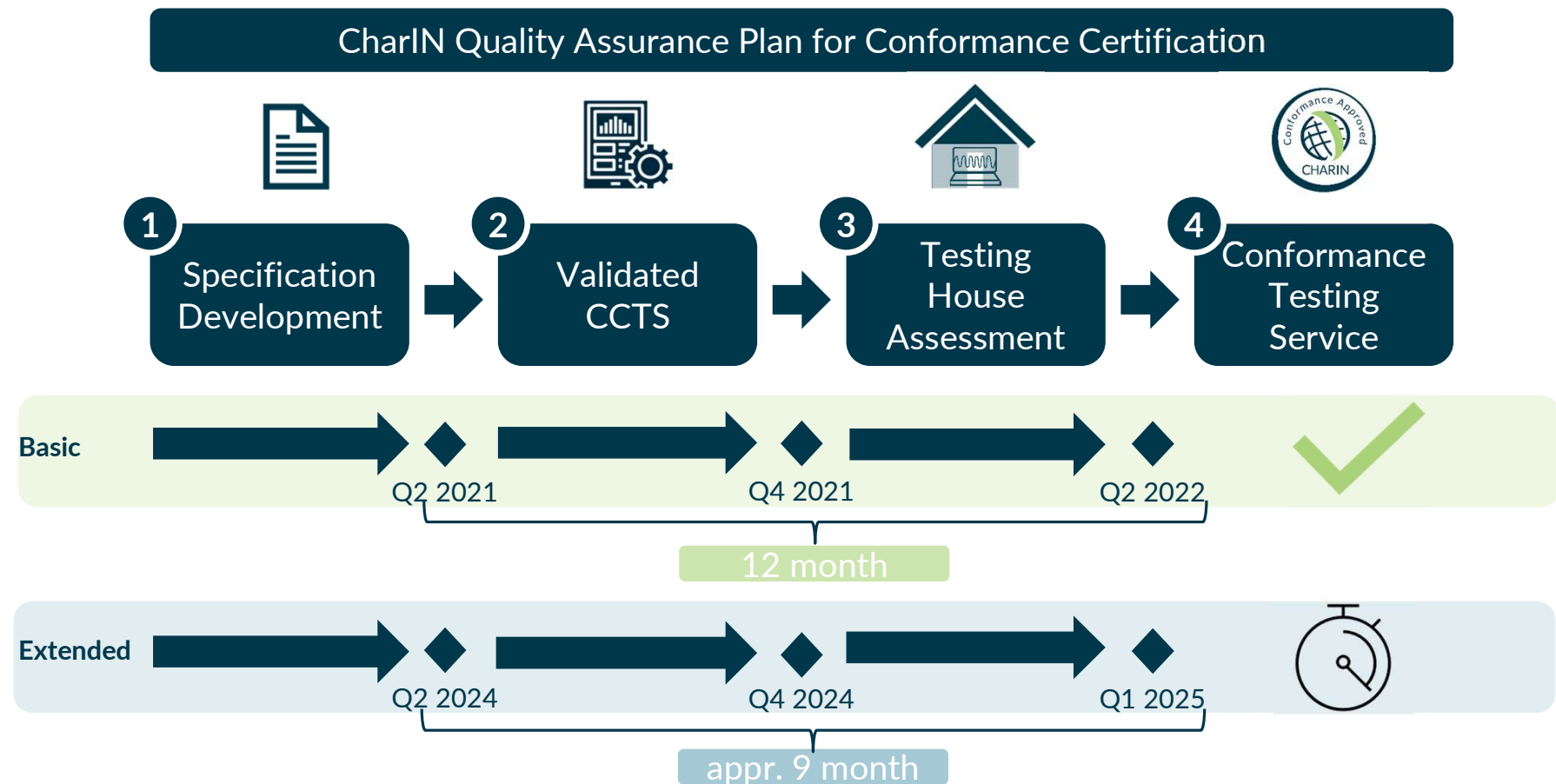
## Additional Efforts:

- Marketing campaigns for CharIN Conformance Certification
- Regular communication of the benefits in the markets
- Creating a demand for conformance certification (e.g. NACS)
- Regulatory recommendation at the national and international levels
- EV OEMs are requested to have the Test certificate



# Conformance Test Process Overview

Expected availability of CCS Extended at labs



# Thank you for your kind attention!

## Any questions?

### Contact

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