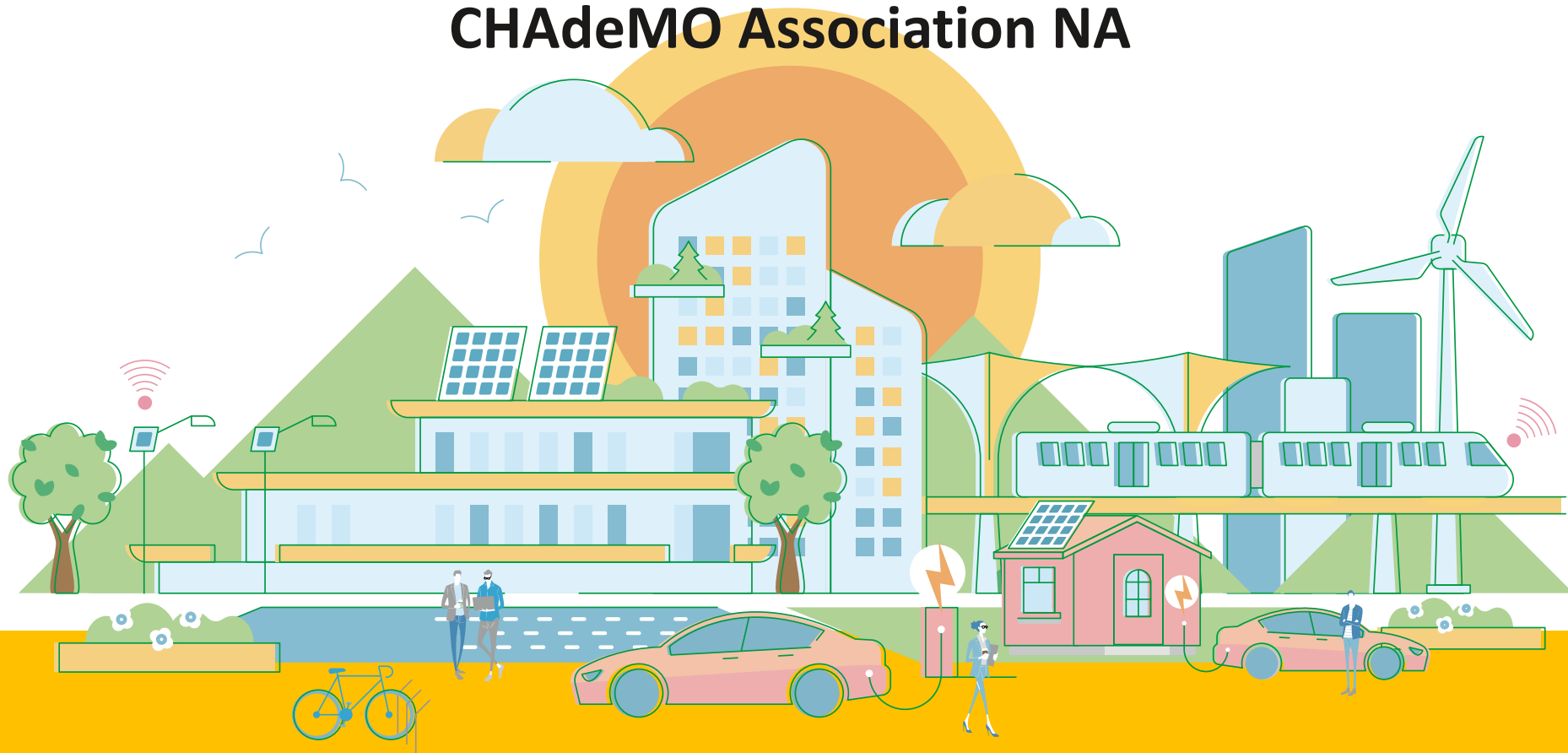


North American Status Update FY2022

May 2023

David N. Patterson, P.E.

CHAdEMO Association NA



Overview

1. North American Status Summary
2. United States National Electric Vehicle Infrastructure (NEVI) Program
3. Cybersecurity Update - Public Key Encryption (PKI) and PlugNCharge
4. California Air Resources Board (CARB) Advanced Clean Cars II (ACC II) Regulations
5. Breaking News

North America Status



Familiar sight - Electrify America Station out of order – Coso Junction , California. Note right EVSE has CHAdeMO.

Privately, many US charging experts wonder if the US chose the wrong standard – CCS1.

In the United States, the myth continues to be repeated that, “CHAdeMO is dead.” CCS-1 supporters continue their aggressive lobbying efforts to push CHAdeMO out of the NA market.

US Department of Transportation NEVI grant program (\$5 Billion USD) requires charging providers accepting federal grants to prove 97% reliability.

Tesla seen as model of charging system design. Automakers charge point operators (CPO) seek to implement PlugN Charge and cybersecurity.

CCS-1 EVSEs and some are proving to be unreliable. Estimated overall US public charging reliability is about 75% - including reliability of CHAdeMO and Tesla – true CCS-1 DCFC reliability probably 50% or less. CharIN, US and California governments seek to solve CCS-1 unreliability.

US National Electric Vehicle Infrastructure (NEVI) Program



Background

- The US Department of Transportation (DOT) \$5 billion grant program to provide States funding to deploy EV charging infrastructure.
- Required an interconnected network to facilitate data collection, access, and reliability.
- Focus on Alternative Fuel Corridors particularly along the Interstate Highway System.
- Requires CPOs accepting federal grants to prove 97% reliability.

US National Electric Vehicle Infrastructure (NEVI) Program

Status

- In February 2023, the DOT issued the final rule mandating at least four CCS-1 DCFC at each location along Alternate Fuel Corridors.
- States are now creating proposals to DOT for specific charging system designs.
- Based upon CHAdeMO NA extensive formal comments, DOT made specific changes to allow CHAdeMO DCFC into the program and to clarify the requirements for ISO15118.
- Importantly, CHAdeMO DCFCs are allowed in addition to the 4 CCS-1 DCFC for the first year of the program.
- **CHAdeMO NA continues to work with Federal and State governments to ensure CHAdeMO EVSEs are available and incorporated in individual state programs.**

SAE PKI Cybersecurity update

Background

- SAE PKI Cooperative Research Program (CRP) to develop a Public Key Infrastructure (PKI) for to secure communication used in EV charging providing reliable PlugNCharge (PnC) capability.
- CRP members - GM, Ford, Stellantis, Shell, Chargepoint, Electrify America, TEPCO/eMP, Rivan, Daimler

Status

- The PKI is fully developed and the test program was completed.
- The PKI works as designed but found problems in vehicles and chargers due to incomplete implementation of ISO15118-2 in vehicles and chargers.
- PnC functional

Next Steps

- The CRP completed April 2023.
- Member companies of the CRP are currently working to establish a business entity to manage and operate the PKI. This is planned to complete by end of 2023.

CARB ACC II Regulations

- The landmark CARB ACCII Regulations established the 2035 light duty ZEV sales mandate – only EVs can be sold in California starting with 2035 model year.
- As a part of this regulation, CARB also requires all 2026MY and later BEVs to be equipped with a CCS DCFC inlet.
- Since this was first proposed, CHAdeMO has expressed opposition to this mandate.
- CHAdeMO NA met with CARB management. They are concerned about CCS's lack of interoperability and may mandate interoperability standards in the future.
- CHAdeMO NA will continue to provide CARB information about CHAdeMO's third party certification program.

Efforts to fix CCS-1

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Interoperability of Public Electric Vehicle Charging Infrastructure



Conclusion

Without broadly addressing interoperability issues, U.S. public charging infrastructure will continue to scale along fragmented and inefficient paths, potentially resulting in higher costs, less than optimum customer experience, and stranded investments. Sustainable, effective infrastructure development requires a shared focus on interoperability, transparency, and open-standards to streamline system integration and improve the customer experience. From the customer's perspective, the goal should be more than a system that "just works" – and one that offers convenience, confidence, and security.

TRANSPORTATION

Feds announce EV charger interoperability initiative



Image: Adobe Stock.

Feb. 15, 2023

The Biden administration announced measures Wednesday to make EV charging stations interoperable, according to a Yahoo Finance [report](#).

This announcement included commitments from General Motors, Tesla and others to build interoperable charging stations that will complement the government's system.

Tesla has since committed to building at least 7,500 chargers that will be open for use by all EV drivers by the end of 2024. The EV manufacturers will be able to retrofit existing chargers to comply with the interoperability standards.



**Save the Date! VOLTS
Conference and
Testing Event in May
2023 – Accelerating
EV Adoption**

Mark your calendar for VOLTS—the Vehicle Interoperability Testing Symposium, a unique gathering of industry experts to share knowledge and showcase electric vehicle interoperability.

Daily media stories about poor public charging and need for interoperability.

Breaking News

FORD EV CUSTOMERS TO GAIN ACCESS TO 12,000 TESLA SUPERCHARGERS; COMPANY TO ADD NORTH AMERICAN CHARGING STANDARD PORT IN FUTURE EVS

MAY 25, 2023 | DEARBORN



- Starting early next year, Ford EV customers will have access to more than 12,000 Tesla Superchargers across the U.S. and Canada, in addition to the over 10,000 DC fast-chargers that are already part of the BlueOval Charge Network. This will give Ford EV customers unprecedented access to fast-charging
- Mustang Mach-E, F-150 Lightning and E-Transit customers will be able to access the Superchargers via an adapter and software integration along with activation and payment via FordPass or Ford Pro Intelligence
- In 2025, Ford will offer next-generation electric vehicles with the North American Charging Standard (NACS) connector built-in, eliminating the need for an adapter to access Tesla Superchargers
- The reliable Tesla Supercharger network has already established charging corridors across the U.S. and Canada

Questions

Ford abandons CCS (PLC) for CANbus?

Tesla is not bi-directional – what about Ford’s promises of bi-directional charging? Both US and California governments are seeking bi-directional charging – opportunity for CHAdeMO?

CCS is mandated by CARB in 2026MY, how will Ford (and Tesla) comply?

NEVI requires four CCS chargers per station – no Tesla support, is this going to change?

2023 will be an interesting year

Thank you

David N. Patterson, P.E.
CHAdEMO NA
patterson@chademo.org
www.chademo.com

