



**Comments of the  
National Electrical Manufacturers Association (NEMA)  
to  
Federal Highway Administration, US Department of Transportation**

**RE: Request for Comments on Notice of Proposed Rulemaking (NPRM) on regulations setting minimum standards and requirements for projects funded under the National Electric Vehicle Infrastructure (NEVI) Formula Program**

**Docket No. FHWA-2022-0008**

**August 22, 2022**

---

The National Electrical Manufacturers Association (NEMA) is the leading U.S. trade group representing electrical equipment and medical imaging manufacturers, which are at the forefront of electrical safety, reliability, and efficiency. Our nearly 325 Member companies provide a range of products including both the transportation and utilities sectors. Collectively our membership provides some 370,000 American manufacturing jobs in more than 6,100 facilities, with worldwide industry sales exceeding \$140 billion.<sup>1</sup>

### **Summary of Comments**

The Federal Highway Administration and the U.S. Department of Transportation have requested comments on a Notice of Proposed Rulemaking (NPRM) to establish regulations setting minimum standards and requirements for projects funded under the National Electric Vehicle Infrastructure (NEVI) Formula Program and projects for the construction of publicly accessible electric vehicle (EV) chargers under certain statutory authorities. Please find our comments herein:

### **General Comments**

NEMA feels that it is important to clarify that Electric Vehicle Charging Infrastructure is not just a piece of equipment. Rather, it represents a combination of hardware, software, cables and cable management, and analytics integrated into a network that delivers energy safely, reliably and efficiently to a vehicle. Infrastructure includes additional critical site elements encompassing

---

<sup>1</sup> For more information, please visit: <https://www.nema.org/>.

lighting, controls, and other communication devices that enable the safe use of the charging equipment and enhance the security while optimizing overall energy efficiency and minimizing carbon impact.

NEMA is strongly in favor of the efforts to develop and sustain a nationwide electric vehicle charging infrastructure as part of global efforts to reduce emissions through electrification of the North American regional transportation system. This deployment should strive towards standardization and interoperability and allow for communication and coordination between the vehicle, the charging station, and grid to maximize the benefit and convenience for vehicle owners, while not putting overdue stress on the grid.

NEMA's EV Charging Equipment Manufacturers represent companies that are currently selling, manufacturing, and operating in North America. The full list is available at the following URL: <https://www.nema.org/directory/products/view/electric-vehicle-supply-equipment-system>

The BIL specifically required that minimum standards and requirements be developed related to six areas.

## **Comments**

### **1. Installation, operation, and maintenance by qualified technicians of EV infrastructure.**

NEMA believes that it is important to offer states flexibility in determining and implementing labor and training standards. The minimum standards suggest all electricians who install and handle all O&M for EVSE must have EVITP certification or completion in a DOT registered apprenticeship program. Limiting certification to these pathways for electricians severely limits the workforce and provides states with no flexibility in the creation of training programs with labor groups and pre-existing training programs already provided by entities in the state who are not listed in the NPRM language. We agree that EVITP or similar trained electricians are required for installation of EV infrastructure in those instances where electrical safety concerns are paramount such as trenching of underground electrical conduits. State licensed or certified electricians and technicians could perform routine make ready EV infrastructure installations, operation and maintenance on existing EV infrastructure, and electrical work on other site areas such as lighting. Factory authorized technicians could also perform O&M on existing EV infrastructure.

EV charging infrastructure also typically includes network connectivity allowing for the ability to remotely monitor and manage the operations of the chargers themselves. Procedures could be written for servicing EV charging infrastructure that takes this into account and prioritizes those items that would need varying levels of service.

NEMA also recognizes concerns with short term scalability EVITP programs and a general labor shortage of qualified EV technicians. Although they are not specified in this NPRM the service complexity of Level 2 Chargers is less than DC Fast Chargers. As an example, they would not require an electrician that has gone through EVITP training and certification for their installation. In some cases certified electricians are needed for Level 2 Charger installs with communications. Also the station network setup and authentication to get them up and running, is not a normal practice for every electrician.

DC Fast Chargers include more complex infrastructure electrical work for their installation and their O&M includes updating software, replacing broken connectors, and diagnostic work on more complex problems that may require a certified electricians expertise. States should be given flexibility as they develop plans to install, operate, and maintain EV infrastructure.

## 2. Interoperability of EV charging infrastructure.

NEMA is generally supportive of the Open Charge Point Protocol (OCPP) as a solution for the method of communication between charging infrastructure and any central system. OCPP is the industry standard protocol that connects any central system with any EV charger, regardless of the vendor.

Many EV charging networks are now starting to offer EV roaming, allowing drivers to access charging stations from different EV charging networks.. Roaming is primarily offered through the OCPI protocol. Roaming is an important aspect and states should consider this as they highlight a flexible relationship between the end-user and the corresponding network.

Also its worth noting that the ISO 15118 standard referenced in the NPRM is still emerging and developing in the U.S. States should be cautioned against identifying it as the de facto standard since a majority of EV's still don't support power management through ISO 15118. There are also security-related shortcomings within the standard that are being addressed.

## 3. Traffic control devices and on-premise signs, acquired, installed, and operated

NEMA supports referencing the Manual on Uniform Traffic Control Devices (MUTCD) for requirements related to the acquisition, installation, and operation of traffic control devices and on-premise signs for publicly accessible EV charging infrastructure. However, states should not use the availability of signage as the gating factor for site deployment and installation as some states do not allow signage on their rights of ways, which makes meeting signage requirements impossible and may present unnecessary siting challenges. Site signage could be subject to supply chain issues.

4. Data requested related to a project funded under the NEVI Formula Program including the format and schedule for the submission of such data

NEMA questions the need of states to collect certain types of data that are specified in the NPRM. There are three underlining reasons behind this:

1. The government shouldn't be able to share competitive data that would include site utilization information. This data could be used to back in to utilization. In some states you have choices in your electric provider which could be competitively sensitive information. Also, if you do renewable and/or storage that could be competitively sensitive. A third party could use all this to their advantage in their own site development.
2. It would also be increasingly burdensome for station operators to obtain items such as the cost of electricity to operate a charging station as that figure may vary daily across the country.
3. Station operators may not have the ability to gather data or aggregate it properly.

5. Network connectivity of EV charging infrastructure

All EV charging infrastructure funded under this program should be networked and connected to the cloud. The California Energy Commission defines "networked" chargers as "a charger connected to a backend network operations center, which at a minimum enables remote diagnostics, remote start, and usage data collection." As stated in our response in #2 NEMA is generally supportive of the Open Charge Point Protocol (OCPP) and notes that the ISO 15118 standard is still emerging and developing in the U.S.

NEMA seeks clarification on what the phrase "charger to charger minimum standard" is referring to in this section of the NPRM

6. Information on publicly available EV charging infrastructure locations, pricing, real-time availability, and accessibility through mapping locations

NEMA supports the need for information on basic charging station information such as location, connector type, and power level in addition to information describing the process how sites host justify uptime (including appropriate Force Majeure and Vandalism clauses)

However, information that describes pricing practices, and the need to display real time pricing information could be burdensome for station operators to provide. Also, the time of use rates vary they could even vary during a charging session making it difficult to report accurate information.

9. Any other factors.

Rate of Return

We are concerned that state DOT's are the incorrect entity to make decisions on infrastructure rate of return. The price ceiling and rate of return on EV Charging Infrastructure should be market driven based on pricing of hardware, maintenance, software, and electricity. The current language provides an opportunity for price regulation for charging stations.

Additionally, clarity is required around the timeframe and we recommend applying the same 5 year timeline prescribed in 680.106 (i) for maintenance to reasonable rate of return.

### Cyber Security

Ensuring cybersecurity and integrity of EV charging infrastructure is of paramount importance, with two main areas of concern: 1) securing user physical safety and personal information and 2) protecting operational integrity and connected infrastructure. While charging technology and cybersecurity systems to protect them are evolving quickly, there are some foundational cybersecurity principles and techniques that public charging infrastructure should adopt, including the following:

- (1) **“Boot Security.”** Boot security uses embedded manufacturer approved and authenticated hardware devices to authenticate operating system software when an EV charger is “booted” up. If the operating system at the boot stage is not authenticated, the charger will stop the malicious operating system from loading or making changes to the charger.
- (2) **Secure “over the air updates.”** Secure methods to update software on deployed chargers should be available such as “over the air updates” or updates that can be issued remotely. When the software components on an EV charger are updated, there should be protections in place to authenticate the software update before the update is accepted and implemented. This mitigates the risk of malicious software being loaded onto a device.
- (3) **Secure Customer Information.** EV chargers may store sensitive data like, for example, personally identifiable information or payment information. This sensitive data should be protected and there are a variety of means to do that including, but not limited to, encryption, role based access, and limiting the amount of such information locally stored on an EV charger.

There are various hardware and software techniques for implementing these three principles and mitigating risks of malicious actors gaining access to public charging infrastructure and information. We encourage coordination closely with the Department of Energy, the National Laboratories, and industry in setting minimum cybersecurity standards that implement these three principles.

### Safety Standards

EV Chargers funded under the NEVI Formula Programs should be compliant with the the UL 2202 standard for Safety EV Charging System Equipment.

### Lighting and Controls

It is essential for electric vehicle charging stations to incorporate lighting and controls to facilitate a site that provides the necessary safety and security for the vehicle charging activity, especially during nighttime. This may require new or upgraded lighting to provide adequate illumination with accurate color rendition and reduced glare for appropriate visibility while minimizing energy use. Controls can be incorporated to provide bi-level lighting to dim during times at night when the charging units are not in use. Consideration should be given to following established design standards for fueling locations to ensure the lighting at these facilities provides good visibility and safety as well as meeting aggressive energy performance.

### Additional Considerations

- NEMA's EV Charging Manufacturers share the goal of fostering and strengthening our domestic manufacturing and supply chain capabilities for EV Charging Equipment. NEMA has identified responsible rightshoring as a viable technique to support Buy America requirements NEMA believes that federal domestic content requirements for EVSE should:
  - Phase in new requirements. An extended phase in period is necessary in order to avoid supply shortages and provide EVSE manufacturers and their suppliers with sufficient time to develop domestic manufacturing capabilities, build up supply chains, and train their workforce.
  - Clarify that for the purposes of the Buy America Act, EVSE are not iron or steel products.
  - Avoid any rules that require determining the country of origin of subcomponents integrated into larger domestically manufactured components.
  - Allow 100% of manufacture value added (MVA) to be classified as domestic content in component tests.
  - Accelerate domestic manufacturing with a 30% investment tax credit for capital cost related to the domestic manufacture of EVSE, EVSE components, and EVSE subcomponents.
  - Create a federal grant program targeting the manufacture of EVSE components and subcomponents not domestically available in commercially significant quantities.
  - Provide clear rules governing EVSE domestic content requirements, including guidelines on how they apply across all funding and procurement programs
  
- NEMA also requests that FTA and FHWA coordinate across their departments and align their standards to the greatest extent possible.

- NEMA also recognizes that the supply chain has impacts on not only physical but labor as well. States need to take that into consideration.

### **Request for Meeting**

We would like to facilitate a meeting with you to discuss NEMA's responses to this RFI at your earliest possible convenience. Please contact Steve Griffith, NEMA Senior Industry Director of Transportation and Cybersecurity, at [steve.griffith@nema.org](mailto:steve.griffith@nema.org).

Sincerely,



Spencer Pederson ,  
Vice President of Public Affairs