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Docket Management Facility  
U.S. Department of Transportation  
1200 New Jersey Avenue, SE  
West Building Ground Floor, Room 12-140  
Washington D.C. 20590-0001

**RE: Federal Highway Administration; Request for Information**

**Docket No. FHWA-2021-0022**

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## **Introduction**

The Energy Marketers of America (EMA) appreciates the opportunity to provide information requested by the Federal Highway Administration to help in the development of guidance for implementation of the National Electric Vehicle Formula Program and the Charging and Fueling Infrastructure Grant Program recently passed by Congress.

The Energy Marketers of America (EMA), previously known as the Petroleum Marketers Association of America (PMAA), is a federation of 47 state and regional trade associations representing energy marketers throughout the United States. Energy marketers represent a vital link in both the wholesale and retail motor fuels distribution chain. EMA members supply 80 percent of all finished motor fuel products sold nationwide including renewable hydrocarbon biofuels, gasoline, diesel fuel, biofuels, heating fuel, jet fuel, kerosene, racing fuel and lubricating oils. Moreover, energy marketers represented by EMA own and operate approximately 60,000 retail motor fuel locations across the country serving local communities and long-distance travelers along the nation's highways.

EMA members have extensive experience in consumer habits and needs, as well as operation and maintenance issues associated with vehicle refueling. We would urge the FHWA to take advantage of this expertise and experience during your deliberations on the implementation of EV charging infrastructure. We are willing and available to discuss these issues in more detail and provide input on guidance for the deployment of electric vehicle charging infrastructure.

### ***National Electric Vehicle Formula Program:***

- **The distance between publicly available EV charging infrastructure**

There is a need to have a better understanding of EV charging habits. Will consumers run the charge too close to empty until recharging or recharge at every destination? The location of EV charging like liquid fueling is a matter of convenience and need from a consumer perspective and the length of a trip. In addition, for those that can have a charger at their homes, they may be less likely to stop on their way to or from home or work and more likely to want to recharge at their home destination. For longer trips that may use more than a single charge, charging will be enroute. There is already infrastructure in place at interstate and highway exits and major highway intersections. In this case, there is not any significant difference between the location of current fueling locations and EV charging locations.

In a general sense EV charging will be at home and at a destination. There will be a significant issue for homeowners and renters without driveways or garages. In this case overnight charging will likely be made available in parking lots or

charging will need to be at a local gas station equipped with DCFC infrastructure. In addition, location will also be a function of charging time. High speed and ultra-high-speed chargers will be important when traveling distances, in areas where overnight or extended period charging is not appropriate, or desirable whereas slower charging may be appropriate for top-off and overnight/extend period charging.

EV Chargers need to be located in four general areas: 1) home or a location convenient to overnight and long period charging; 2) at interstate and highway exits and major highway intersections (the existing interstate and highway fueling model); 3) at or near destinations where an EV operator would be spending time to allow for a top-off or full charge; and 4) along evacuation routes that are not part of the interstate highway system. At minimum there will be a need for a charging facility within a reasonable distance (e.g., 75 miles) of the shortest distance on a charge. (See Fuels Institute June 2021 report on [EV Consumer Behavior](#)).

EMA also applauds FHWA's guidance from December 2021, that fee paid EV charging stations cannot be located within the interstate right of way (ROW), including rest areas. EMA remains adamantly opposed to allowing EV charging options within the interstate right of way (ROW), including rest areas because it undermines the significant investments small business energy marketers have made in communities and real estate directly off the U.S. Interstate System. When Congress created the Interstate Highway System in 1956, Congress and community leaders feared that local businesses, jobs, and tax bases would shrink as motorists and truck drivers bypassed their cities and towns. For this reason, Congress prohibited new Interstate rest areas from offering commercial services, such as food and convenience items offered at businesses along the highway exits. For over six decades, this prohibition on rest area commercialization has led to a thriving and competitive business environment. These businesses provide jobs, serve as an economic driver in the community, and make continued investments to provide consumers the best available products.

- **Connections to the electric grid, including electric distribution upgrades; vehicle-to-grid integration, including smart charge management or other protocols that can minimize impacts to the grid; alignment with electric distribution interconnection processes, and plans for the use of renewable energy sources to power charging and energy storage**

Minimizing the impact of EV charging connections to the electric grid is going to vary based on the utility infrastructure in the area; the number and type of chargers; and the cost of upgrades needed to support the potential load on the distribution lines and at the pole. Adequate power could be a significant issue in rural areas and along portions of interstates and highways in rural areas. In addition, it will be important to understand the electric utility process and requirements for obtaining the service and getting it installed. Another issue to consider is the concept of varying electric rates base on time of use and whether costs may affect EV charging habits (e.g., charging during off-peak hours) or whether EV charging habits will affect off-peak periods. Consumers will look for the lowest cost option.

- **The proximity of existing off-highway travel centers, fuel retailers, and small businesses to EV charging infrastructure acquired or funded under the Program**

It makes more sense to locate new EV charging equipment at existing off-highway fuel retailer sites. These sites are ubiquitous, familiar to consumers and conveniently located at highway entrances and exits nationwide. New EV charging sites are likely to be located further from highway exits and entrance ramps than consumers are ordinarily willing to travel. The convenience of an EV charging station, already situated at highway entrance and exit ramps, along with the availability of restrooms, food, and drink, will prove far more desirable to travelers than EV charging stations located further down the road from the exit, without facilities or refreshments.

- **The need for publicly available EV charging infrastructure in rural corridors and underserved or disadvantaged communities**

By definition, an underserved disadvantaged community would have a need for EV chargers. The question is when and what density of chargers may be needed. The current cost of electric vehicles may well be out of reach for many living in underserved, disadvantaged areas, at least initially. Over time, demand will grow as electric vehicles become more affordable and replace a greater volume of liquid fueled vehicles. Home charging in urban underserved, disadvantaged areas where apartments buildings are common will not be practical for the most part. Instead, EV charging at existing

retail sites will be needed to meet demand. The most common retail site in underserved, disadvantaged areas by far, are retail service stations. People living in these areas rely on local service stations to fuel their conventional fuel vehicles. These gas stations are associated with convenience stores that satisfy consumer buying habits, provide comfort and safety, and may be the only such locations in underserved and rural communities. Consequently, gasoline stations with convenience stores are the most logical site for EV charging installations. Service station owners also keep close track of local demand for their products and are better positioned to determine the density of EV charging stations required as the market for electric vehicles in these areas grows.

It is likely in disadvantaged communities, there will be fewer homes with driveways and garages and more street and lot parking. As noted in question one, EV owners in these areas would either need to charge at a local gas station equipped with DCFC infrastructure or on the street or in a parking lot. Another consideration is timing of the purchase and use of EV in a disadvantaged community. This will affect the timing, location, and number of EV charges needed.

In rural communities, it is more likely that residences will have driveways and garages for home charging units; however, rural residence may be more likely to drive a distance for groceries, shopping and other activities. In this case destination charging may be important. Home charging will likely predominate in rural areas due to the existence of fewer retail sites and the added vehicle miles needed to get there to recharge. In these areas retail service stations offer the most suitable location for EV charging equipment to meet local market needs.

- **The long-term operation and maintenance of publicly available EV charging infrastructure to avoid stranded assets and protect the investment of public funds in that infrastructure**

Currently, there is not enough experience with respect to the operation and maintenance of charging infrastructure to understand the long-term operation and maintenance requirements for EV charging infrastructure. However, the experience of retail marketers with the operation and maintenance of fueling dispensers is relevant and instructive. EV charging equipment will be subject to deterioration with usage and time and deterioration will be reflected in higher operation costs and lower service quality. Maintenance on the equipment will be a function of the use and abuse by users of the equipment. Customers tend to be hard on dispenser equipment. Hoses and nozzles need to be replaced often. The same rate of repair will likely be required for EV charging plugs and cables.

Additionally, networked systems, credit card/payment acceptors and controls, as well as the electronics and software on the charging unit will be subject to failure. Another consideration is life expectancy and replacement costs of a charging unit due to obsolescence or deterioration. The complexity of the EV infrastructure will likely require specialized service from an outside vendor or licensed electrician for equipment repair and maintenance rather than site operators or in-house service technicians. The availability and cost of trained technicians will be a significant concern for the operation of EV charging stations. It is likely that these questions will be addressed through the amendment of existing building, fire and electric codes as well as industry standards by organizations such as Underwriters Laboratories and ASTM.

- **Fostering enhanced, coordinated, public-private or private investment in EV charging infrastructure**

The past year presented momentous challenges for small business. In addition, although EMA members are resilient, they often face insurmountable barriers in accessing federal grant funds. Congress recognized this reality when establishing the Paycheck Protection Program to benefit business with fewer than 500 employees. Given FHWA's request for information on alternative energy infrastructure, EMA requests that safeguards be established to ensure small businesses can access vital federal funds to advance alternative energy goals.

EMA is also concerned that the National Electric Vehicle Formula Program and the Charging and Fueling Infrastructure Grant Program could permit electric utilities to double dip – meaning they could charge their rate paying consumers to pay to expand EV infrastructure, while also taking grant money to subsidize the same projects. In fact, utility companies have been requesting permission from state public utility commissions (PUCs) and bills are being introduced, to raise rates on all customers in some states. The purpose of these rate increases is, in part, to offset costs for installing EV infrastructure and charging networks.

Even small utility rate hikes to pay for EV charging can have an outsized impact on households. Nearly 1 in 3 American households reported difficulty paying their energy bill, according to a 2018 Energy Information Administration report. If a PUC permits a rate hike, those unfairly paying for EV charging will include (1) low-income families, (2) the elderly and fixed-income families, (3) those who do not own EVs and will not use EV chargers and (4) small businesses.

Furthermore, an electric utility monopoly installing EV infrastructure hurts consumers by effectively blocking out competition. Competition will ensure consumers pay a competitive price for EV charging and are ultimately serviced by the companies that provide the best customer experience. In other words, utilities and non-utilities, including private businesses, should be on a level playing field when it comes to building out EV charging infrastructure.

EMA is also concerned that the National Electric Vehicle Formula Program and the Charging and Fueling Infrastructure Grant Program could result in a preference for grants to companies that have multiple sites distributed along major transportation routes. As with other grants for alternative fuels, small to medium convenience stores will be placed at a competitive disadvantage. EMA urges FHWA to ensure that 50 percent of the grant program funding be dedicated to small, independent fuel marketing businesses with less than 500 employees who can diversify and ensure consumers pay a competitive price for EV charging.

- **Meeting current and anticipated market demands for EV charging infrastructure, including with regard to power levels and charging speed, and minimizing the time to charge current and anticipated vehicles**

The major challenge will be the number of chargers at a charging location and the speed of the charger. See comments on Question 1 above with respect to location. Charging speed, as well as availability of chargers during high travel periods will be important components of a charging location. As an example, a retail fueling facility can have six to twelve fueling positions for a fueling activity that can take less than 3 minutes. The number of EV chargers and charging locations will need to support peak recharging periods and will be dependent on driver fueling habits (e.g., charging on the way to or from work, charging at a destination, etc.). Drivers will not wait extended periods of time to charge unless there are entertainment, recreational or other desirable resources or activities made available to them while recharging.

- **Any other factors the FHWA should consider in developing the EV charging program guidance.**

Currently there is limited information on the proper installation and operation of EV charging beyond the electrical code. There needs to be consideration for the potential fire and safety hazards associated with these units. There is a need for uniform requirements that apply to all EV charger owners and operators on the location and installation of EV chargers for both fire and safety. Uniform requirements also provide a level playing field for fair competition.

Any evaluation of EV charger locations should include the electric vehicle while connected to the charging equipment. The EV is an integral part of the charging activity. The on-site location and positioning of EV chargers must take into consideration maneuverability to and from the EV charger, the proximity to other non-charging structures and property boundaries and equipment and accessibility by disabled persons.

### ***Charging and Fueling Infrastructure Program***

1. **Provide information on factors that should be included in guidance for project development of EV charging, propane, natural gas and hydrogen infrastructure at state local and tribal areas.**

The plan for installation of EV chargers must take into consideration anticipated EV population trends. The technology for chargers and EVs is changing quickly. What may be state of the art today will be obsolete in the near future. It is important to make the best use of resources by understanding the potential quantity and trends of EVs in a particular area and focus resources there on EV chargers along interstates and major highways to support cross state and cross-country travel. Also, local commercial delivery and service vehicles will likely have on-site charges for their equipment but will need chargers for longer trips. (See Fuels Institute June 2021 report on [EV Consumer Behavior](#))

The fire risk and hazard associated with failure of an EV battery while charging is a major safety concern for EVs. This could be a greater issue as EV age and are subject to normal wear or accidents. As mentioned above, there is a need for

uniform codes (fire codes, building codes) addressing public and commercial EV chargers and the EV while charging including:

- the physical location of chargers and the EV while charging
- potential fire and safety hazards and related separation
- physical protection of the equipment from damage by vehicles
- EV parking space size including maneuverability to and from the EV charger
- Setbacks from property boundaries, buildings and other important features

**2. Any other factors FHWA should consider in developing the Charging and Fueling Infrastructure program guidance.**

Included above.