WYOMING PETROLEUM MARKETERS ASSOCIATION
* Convenience Store Association

Wyoming Department of Transportation
Request For Information No. 22-011CS
Zero Emissions Vehicle Infrastructure Strategic Plan

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Technical Response

1. Infrastructure Installation, Placement, and Operation

a) For over a century, Wyoming motorists have enjoyed the development of a competitive, needs based petroleum products distribution and retail network that responds to consumer demands by providing goods and services in strategic locations on interstates and state highways alike. Consumers have become accustomed to utilizing this network that was developed on a convenience principle while providing restrooms, fast foods, and a host of other services in well-lighted, well-maintained and safe locations. Wyoming should endeavor to maintain this model of traveling convenience and necessity by deploying DCFC and hydrogen refueling stations at these facilities.

b) Corridor development must first recognize where customers recharge. Recognizing that 70-80% of charging occurs at home, a focus then must address "range anxiety" issues of travelers who journey beyond the comforts of hub refueling . By utilizing the current petroleum-based infrastructure in developing a strategic corridor, funding stategies and incentives can focus on direct DCFC benefits without the need for ancilliary consumer-attracting development or altering consumer behavior. Care must be taken to assure DCFC station placement recognizes battery range and services availability.

c) Many variables go into determining distances between DCFC charging stations. There are available a host of very complex and algorithym-based studies that offer deployment rationale. Our research tells us that to address the wide range of vehicle capabilities that 60 miles between refueling locations should be the maximum with 45 miles being optimal. WPMA realizes that this RFI is seeking to address DCFC deployment. WYDOT should also consider the importance of Level 2 charging station infrastructure in apartment complexes, condominiums, and other residental applications in areas where single family housing is limited. Importantly, surveys of EV owners have tallied 16-20% responses favoring workplace charging stations. Clearly, a combination of charging station options will be necessary for any EV mandates to achieve success. The #1 concern of EV owners is nonavailability of charging stations, followed by running out of range, widespread availability, value (i.e. costs), convenience and forgetting to charge at home (source "EV Consumer Behavior", Fuels Institute, June 2021.)

d) Other issues regarding effective infrastructure deployment centers, from our perspective, on the availability of forecourt space to install DCFC stations. Given that charging time is roughly 5-6 times longer than petroleum fuels (possibly much longer during extreme cold), dedicated parking/charging space brings with it the need to assess potential utilization. Traditional "fuel island" delivery platforms are likely to evolve as EV customer demand evolves. Important to this discussion, corridor strategic plans must insist on only DCFC charging stations as Level 1 and Level 2 charging stations simply do not fit within a optimal strategic deployment plan. Equally as important are utilization of the most recent technological advancements such as battery assisted DCFC chargers that limit "behind the meter" retrofiting needs, utilize battery assistance to reconcile peak demand pricing fluctuations and finally, utilze internal heating capabilities to address extreme weather conditions. Clearly, technological innovations are being advanced almost daily that will alter retailers deployment decisions.

e) Almost every electric vehicle manufacturer and charging station manufacturer provide online location information and maps. REV West signage agreements may not be necessary.

f) It is our understanding that every DCFC charger manufacturer has developed payment systems interfaces in their chargers. This could include allowing the colletion of gas-gallon-equivalent fuel tax collections to benefit the state's highways. WPMA understands that there may be statutory changes required that address the sale of electricity at retail.

g) Strategic routes and corridors are fairly easy to identify in Wyoming. WYDOT traffic counts, primary destination considerations (national parks, tourism), and "range anxiety" considerations on non-interstate corridors, should influence stategic locations and traffic patterns that will maximize on the goal of EV mandates. Fortunately, there are ample existing petroleum fuels retail locations that WYDOT can utilize in developing the DCFC network.

h) Please see comments made in "g" above.

i) WPMA does not anticipate any difficulty supplying DCFC charging opportunities at this time. NIST and NCWM are on a fast track developing code and practices. Until code is adopted (including local fire code), retailers will need to know what are the regulatory requirements for setbacks from hazardous locations, including liquid fuel dispensers, vent stacks and storage tanks as well as what the addition of EV charging will affect the site's Americans with Disabilities Act? The above regulatory uncertainty obviates that electric vehicle mandate goals are not tied to supply chain, regulatory, statutory and manufacturing realities. Wyoming consumers will take time to educate regarding electric vehicle recharge charges, fees, taxation and payment systems interfaces.

j) WPMA has no information to offer with respect to aviation.

Utilities

Regarding utilities overall, investor-owned, ratepayer subsidized power utilities should not increase the electricity rates of all their customers – regardless of income – to underwrite investments in EV charging equipment. This unfair funding method, combined with federal funds that allow double-dipping of funding for the same infrastructure and the punitive demand charges that utilities impose on private sector operators of EV charging statements, make it impossible for the private sector to successfully invest in charging technology.

a) In many areas of Wyoming, the overarching question that must initially be asked is can the local utility accommodate the additional draw required by the EV charging station infrastructure? The load increase represented by some DCFC charging manufacturers has already been questioned in some rural communities where retailers have sought to install 1000 amp at 480v, 3-phase DCFC chargers. "Behind-the-meter" capabilities will play a critical role in DCFC deployment with some manufacturers. Battery-buffered DCFC chargers, while less of a demand, require 400 amp at 208v service. Possible upgrades may be required by utilities to achieve the required input power for charging equipment. Also, there is a question if separate utility agreements and metering be required to insulate the facility from demand rate charges, if applicable?

b) With respect to demand rates, states are preparing for new, dispersed load growth and expanded peak demand that may strain the electric grid as the EV market continues to grow. States also are looking for how to design utility rates to support charging behaviors that enhance, not threaten, grid reliability and costs, namely inducing chargers (particularly homeowners) not to charge during peak demand periods. Utilities are also considering special rate structures for DCFC that reduce or eliminate demand charges, which can often be a barrier to the development of these chargers. Wyoming has many examples from which to develop beneficial peak demand charging scenarios.

c) In almost every state, utilities also offer incentives, rebates, and grants for transportation electrification. One of the most common incentives is price reductions for charging EVs during off-peak hours. For example, several electric utilities offer lower off-peak price per kilowatt-hour. WPMA believes that this type of incentive should be the extent of utility incentives and that utilities should be focused on infrastructure upgrades to meet the coming demand. Other utility incentives for purchasing EV's and equipment through rebates should be left to the vehicle manufacturers and equipment manufacturers, not utilities … especially ratepayer subsidized utilities.

Statutory and Policy Considerations

a) and b) – No input.

c) Wyoming has very few EV registrations (0.03%), second only to North Dakota (0.02%). Nationally, EV's account for approximately 2.5% of all registered vehicles. Until consumer demand represents a substantially larger portion of all vehicles on the road, private industry will not be able to justify a sufficient return on investment necessary to invest in DCFC charging stations. Accordingly, incentives … just like the alternative fuels example, may be necessary since the desire to jump start EV's and eliminate internal combustion engines (ICE's) is the goal. With the cost of equipment and installation ranging from $120,000 to $180,000 for one two-plug charging station and with virtually no customers to sell electricity to, incentives (tax credits, grants, bundled credits, manufacturer rebates, low interest loans, etc.) are already offered in most states. It is too early in the debate to assess what incentives work best. However, grants (funding that does not need to be repaid), rebates or tax credits (utilized to reduce tax payments) provide the best incentive over low interest loans (that must be repaid and meet all sorts of qualifying requirements and monitoring) or other forms.

d) State lands should never be considered for infrastructure emplacement. Taxpaying, job's providing, community supporting, private industry that made investments in their businesses should never have to compete against taxpayer subsidized, government competition.

Government providing goods and services would discourage the private sector from investing in EV charging infrastructure and ultimately hinder growth in these alternative fuels. A joint letter (attached) submitted by the Society of Independent Gasoline Marketers of America (SIGMA), the Energy Marketers of America (EMA), National Association of Convenience Stores (NACS), and the National Association of Truckstop Operators (NATSO) goes into great deal explaining why allowing utilities and commercialization of public properties, specifically rest areas, will threaten development of any competitive alternative fuel. While the letter references the INVEST in America Act, the underlining objection to utilities and rest area commercialization addresses the RFI question regarding government competition with private industry. WPMA vehemently opposes government delivering goods and services at retail in competition to private industry.

e) Electric vehicles should be treated no differently than internal combustion engine vehicles. Cradle-to-grave analysis of electric vehicles impact on the environment demonstrates that, while EV's are preferable to ICE's in terms of air pollution, the environmental disruption of the earth for rare earth minerals to manufacture batteries places these vehicle modes in environmental impact parity. Hydrogen vehicles utilizing gray or blue hydrogen impact the environment worse than EV's and ICE's, and so-called green hydrogen is cost prohibitive and comparable in environmental impact of ICE's. Accordingly, gas-gallon-equivalent taxation per kilowatt hour should be computed and assessed.

f) WPMA has no information to provide with respect to electric commercial vehicles.

g) The following is from the "Conclusion" section of the National Bureau of Economic Research paper titled, "Carbon Policy and the Emissions Implications of Electric Vehicles."

> "Using both an empirical analysis of historical data from recent years and a detailed dynamic model, we demonstrate an important interaction between electric vehicle policy and carbon pricing policy that plays out over a range of moderate carbon prices that very likely fall within the range of politically feasible prices. The key intuition for our results is that carbon pricing will push coal generation up the aggregate supply curve to the margin and eventually to retirement. Thus, within a range of carbon prices, additional electric vehicles are more likely to be powered by coal, and the additional demand for electricity can slow coal retirements."

WPMA offers no additional information but acknowledges that there is a distinct connection between carbon and emissions policy relative to elective vehicle deployment. The above referenced paper is attached for your information.

Incentives

a) Corridor and local travel infrastructure should not be treated differently. As acknowledged earlier in this document, return on investment for electric vehicles is significantly different than petroleum fuels. Refueling for consumers poses a very different environment as well. For electric vehicles to be accepted and utilized, refueling resources must be readily available. While the majority of potential EV owners will be single family residence owners, a large part will not. EV charging stations then must also be promoted for apartment complexes, townhomes, mobile home parks and the myriad of work recharging options. While corridor deployment is critical on the national front, local travel must be part of the strategy.

b) Grants that help retire the high cost of equipment during the time that relatively few customers will be available will entice retail DCFC applications. Care should be taken when analyzing types of equipment and construction costs. Technological advancements have all but eliminated "behind the meter" retrofitting by utilities while utilizing battery assisted DCFC's. Technology will continue to improve exponentially but with those improvements being pricey until widespread deployment and competition brings prices down. There are myriad examples of incentives nationally. Many incentives are bundled with manufacturer and state/federal grants and/or tax breaks.

c) WPMA has no information relative to effective government financial assistance that is not already well documented nationally and internationally.

d) Electric vehicle mandates suggest that a preference as to route or corridor-based infrastructure incentives should be comparable. Catering to corridors to appease the fervor for a national network ignores the realities of off-corridor needs, particularly in potentially underrepresented rural routes of Wyoming. Care should be given when focusing on corridors to the detriment of off-corridor communities. Allowing electric vehicle Fast Charging "deserts" to develop will isolate communities and disproportionately impede economic development into those rural communities. Economies of scale dynamics also must be considered when high-volume corridors compete with lower-volume off-corridor locations for incentives…i.e. larger financial assistance needs will likely be necessary when lower-volume locations consider DCFC deployment. The success of an effective and comprehensive DCFC offering in Wyoming will be determined by all "range anxiety" considerations being reconciled statewide, not just select, high-volume corridors that will already have incentives to deploy DCFC opportunities.

e) Please refer to the comments offered in the "Statutory and Policy Considerations" section under g).

Closing Statement

The retail fuels market is the most transparent and competitive commodities market in the United States. Consumers can easily see fuel prices and decide where to refuel based on the posted price without having to leave their vehicles. This leads to lower prices for customers. EV drivers should have access to the same competitive, stable and convenient prices that drivers of gas-powered vehicles have enjoyed for decades. The rate charged must be consistent and predictable throughout the country in order for EV charging stations to deliver rates that are competitive with conventional fuels. With 150,000 established fueling locations spanning the nation, existing fuel retailers can replicate today's fueling experience for drivers of electric vehicles while ensuring that those drivers will not suffer from range anxiety.

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