

California Bus Association

California Air Resources Board

March 2, 2021

Advanced Clean Fleets Workshop

“The Road to Electrification of the Motor Coach - Charter Bus Industry”

As we hit this new era of electrified transportation, our California motor coach – charter bus industry looks forward to playing its part in the change from petroleum-based fuels to one of an all electric powered heavy duty fleets. Below are some of the key points and requirements for our industry that will undoubtedly involve the electric utility and the motorcoach manufacturing industry as well as government support, to make this electric future one of sustainability for the motorcoach industry.

The Charter Bus/Motor coach Industry is a very diverse and critical industry that provides environmentally friendly, cost efficient, and above all safe group passenger travel, both within California but to many of the other states in the United States and Canada. In the motorcoach industry, there are a few specific categories of transportation. Our customer base consists of individuals, families, and large groups that want to travel safely, economically and efficiently on a timeline of their choosing. Passengers that travel with our industry include are part of:

Government entities, military, schools, churches, non-profit organizations, business, seniors, international visitors, colleges, social clubs, natural disaster emergency evacuations (fire, floods, earthquakes), employee shuttles, convention shuttles, airport shuttles, and individuals touring or travelling to our cities and states. They travel on the 3 main modes of commercial travel by bus:

For additional information please contact Josh Pane,  
Pane & Pane Associates Inc.  
On Behalf of the  
California Bus Association  
<https://www.cbabus.com/>  
pane@cwo.com

**Charter** – local trips with passengers that are part of a common purpose group with or without their luggage or carry-ons that can be stowed on or under the coach. Examples of these groups are high school sports teams playing cross town or 450 miles away on field trips, employee shuttles, military units travelling for emergency deployments or routine maneuvers, group transfers between airports and hotels, seniors travelling to an afternoon symphony and lunch.

**Sightseeing/Touring** –these can be local and long distance individual or group sightseeing trips. Long distance, multiple day / multiple state trips can span 1 day to 30 days, the motor coach industry provides thousands of these trips annually to places all over California and the United States, to large cities such as San Francisco, Las Vegas, Seattle, others to such remote locations as Death Valley or Bryce Canyon. These over the road (OTR) trips are traveling generally longer distance that can exceed 500 miles daily, and always carrying luggage both inside the coach and in the large under the floor compartments.

**Scheduled Intercity, Interstate and Intrastate services** - Carriers that operate scheduled services provide local and long distance travel on an individual fare basis; passage includes transport of their personal luggage. Due to the nature of this industry segment, distances can likely exceed 500 miles or more with a single bus and utilizing multiple drivers in order to provide a seamless, time efficient service to the customer over long distances.

As we move into the 21<sup>st</sup> century and into electrification and battery operated buses, we have challenges that we know advancing technology will likely tackle and get electric buses there sooner than later. Once these challenges are resolved, our industry, though already the cleanest environmentally way to travel, would be even cleaner and would continue to be the epitome of clean, energy efficient and safe travel.

What our industry needs to know from the state, the electrification Industry and the bus manufacturers, to move headfast into the mandated electric motorcoach, includes these concerns and questions:

- **Electric Grid:** What is the plan for assuring that the state's electric grid is capable of supplying this new electric demand? What is the timeline to provide this new demand for electric fleet charging down to the local and on road infrastructure? What is the infrastructure required from the local utility operator to supply the private industry's terminals?
- **Tourist Destinations:** Infrastructure for charging at destinations such as Disneyland, Yosemite, Hollywood, Muir Woods to the San Diego Zoo, along with any overnight stops while our drivers are off duty resting in hotels. This has to include locations outside of California because many of the motorcoach industry's travel occur in other states in the United States, including Alaska. If charging capabilities are located any distance from the drivers' overnight lodging, there will be added cost and logistics in getting the driver to and from their bus, assuming that these charging facilities allow and have capacity for multiple heavy duty vehicles needing overnight parking and security.
- Infrastructure to charge multiple, possibly hundreds of motor coaches when we are at venues such as Disneyland, baseball, football stadiums and other popular venues where groups may have travelled up to 500 miles to get to these destinations; Perhaps conducting a survey of these major in and out of state tour destinations would assist in the advanced planning efforts.
- **Vehicle Recharge Time:** While the industry can charge when we are onsite at our bus terminals, "rapid re-charging" is absolutely critical to enable our businesses to continue. Charging times of over 2 hours will likely cause total disruption of the industry business operations..
- **Range-** Manufacturers of buses will need to have a minimum of 500 mile range on one charge.

- **Weight-** Manufacturers will need to work on retaining the existing cubic feet volume available for luggage capacity. In addition, a major concern is that the current weight of batteries will reduce our passenger and luggage carrying capacity. One of the major bus manufacturers' new all electric motorcoach models has, due to the additional weight of batteries and motors compared to diesel engine and transmission, incurred an additional 6,000-lbs. net added weight, causing an overall reduction of carrying capacity both of passengers and luggage. This is a major concern to the industry and the total environmental assessment.
- **Utilization-** one of the important things to remember is that in a motorcoach fleet, all of our coaches are expected to perform all of the above listed travel modes... motorcoaches are not purchased for specific types of travel needs (i.e. only shuttle, only interstate, only school field trips).