

2016

California Fuel Cell
Partnership



Executive Summary for Decision Item

CaFCP Executive Board meeting April 19, 2016

MEDIUM- & HEAVY-DUTY FUEL CELL ELECTRIC VEHICLE ACTION PLAN FOR CALIFORNIA

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Executive Summary

Vehicular transportation contributes significantly to the adverse effects caused by air pollution on human health and to greenhouse gas (GHG) emissions, which are altering the earth's climate to devastating effect. Within the transportation sector, medium- and heavy-duty vehicles account for one of the fastest growing sources of emissions and energy consumption¹. Deployment of medium- and heavy-duty zero emission vehicle (ZEV) technologies such as fuel cell electric trucks have the potential to significantly reduce the negative impacts associated with freight transport.

The members of the California Fuel Cell Partnership (CaFCP) have prepared this Action Plan to accelerate the development and commercialization of medium- and heavy-duty FCEVs in California. Federal air quality targets, the AB 32 GHG reduction targets, and the State's transport electrification targets combined with the goals of the California Sustainable Freight Transport Initiative, make California a favorable place to launch zero emission medium- and heavy-duty transportation technologies.

The Action Plan outlines the elements of a sustainable business case in order to capture the broad effort that is required to successfully introduce any fuel cell truck product to market. To ensure an effective strategy, two vocational categories were selected as being the most feasible near-term vehicle platforms: Class 4-6 urban "last mile delivery" trucks (14,001-26,000 pound gross vehicle weight) and Class 7-8 short haul/drayage trucks (26,001-33,000+ pound gross vehicle weight). Technology demonstration and validation of these initial categories can provide a sound basis for applying the technology to additional truck classes and vocations.

The regions prioritized for rollout are the San Joaquin Valley and South Coast air basins, where medium and heavy-duty truck traffic contributes significantly to the criteria pollutant emissions released into the regional atmosphere. Neither air basin will be able to attain National Ambient Air Quality Standards without a turnover of the current heavy-duty diesel fleet to lower-emission trucks. The San Francisco Bay Area, Sacramento Metropolitan area, and the Inland Empire (including the Coachella Valley) are also target areas that sustain high volumes of freight trucking amid sizeable populations. With growth in both population and truck traffic predicted, deployment of cleaner options becomes an urgent public health priority, as well as a component for meeting GHG emissions reductions.

A third major element of the Action Plan pertains to the development of a hydrogen fueling infrastructure to match demand. Planning for capacity, distribution, and siting of this fueling infrastructure needs to start in 2016 and include both commercial conventional fuel and hydrogen fuel providers.

The operational data and lessons learned from the envisioned rollout can be translated to a statewide and national level over time, thus working toward broad public acceptance of FCEV technology. California hosts the largest heavy-duty FCEV programs in North America, the bus programs at Alameda-

¹ <http://www.eia.gov/beta/aeo/#/?id=7-AEO2015>

Contra Costa Transit Agency and SunLine Transit Agency in the Coachella Valley. Although these two successful demonstrations can provide knowledge and data for fuel cell electric truck development, they remain in the minority: few ZEV demonstrations in California focus on medium- and/or heavy-duty FCEV technologies.

The Action Plan concludes with recommendations to address this gap. These include recommendations specific to State and Federal governments and to industry stakeholders, as well as recommendations where government and industry collaboration is needed. The latter encompass issues such as codes and standards development for fuel cell trucks, standardizing data collection to support reporting and decision making, and developing a fueling interface and protocols. The recommendations support technology validation of fuel cell electric trucks in demonstration programs, an essential step to commercialization.