California Department of Food and Agriculture, Division of Measurement Standards (DMS)

The DMS promotes accuracy in metering technology and other related fields in weights and measures for both electricity and hydrogen. They work within the national system, and often blaze the trail for other states and the nation to follow.

Equity: Ensure fair and accurate transactions.

DMS ZEV Market Development Objectives

Objectives	Vehicles	Infrastr.	End User	Workforce
Consumer/Vendor Protection: Establish/enforce fuel quality and weights and measures laws and regulations that meet market needs and ensure accurate pricing and marketplace transparency.	–	Direct	–	–
Workforce Training: Put systems in place to help ensure weights and measures testing does not become a bottleneck in the system.	–	Direct	–	Indirect

- Consumer / Vendor Protection:
    - California laws and regulations protect both zero-emission vehicle (ZEV) drivers and businesses who own and/or operate ZEV fuel devices (aka fuel dispensers). CDFA-DMS continues its ongoing efforts to educate stakeholders about commercial requirements for hydrogen fuel dispensers and electric vehicle supply equipment (aka EVSE or electric vehicle charging stations) by overseeing the regulations pertaining to ZEV fuel dispensers.
        - CDFA-DMS continues to participate with the National Conference on Weights and Measures (NCWM) to further develop the national model regulations for hydrogen fuel dispensers and EVSE in the United States. These efforts have numerous benefits: Uniform specifications for ZEV fuel dispensers benefit manufacturers of these devices who wish to sell their fueling systems nationwide; development of a consistent method of price sign advertising for ZEV fuels benefits competing local businesses and consumers seeking the lowest fuel prices; and ZEV drivers experience consistent, positive fueling experiences when businesses compete fairly for market share and ZEV dispensers operate correctly.

- Starting January 1, 2023, all newly installed direct current (DC) fast charging EVSE will be required to comply with the specifications, tolerances, and other technical device requirements adopted in California regulation. In preparation for these new requirements, CDFA-DMS will be working with device manufacturers and county sealers in 2022 to prepare for oversight of both AC and DC EVSE.

- California Type Evaluation Program (CTEP) – Before new device types may be legally used for commercial purposes in California, they must undergo rigorous evaluation, and if successful, the manufacturer is issued a CTEP Certificate of Approval (COA) for that device type. CDFA-DMS continues to administer this program and accepts applications for any weighing, measuring, or counting device used for commercial purposes, including ZEV fueling devices.

    - CDFA-DMS works closely with each manufacturer who has submitted their commercial device to be type evaluated. The EVSE regulation promulgated by CDFA-DMS became effective for newly installed alternating current (AC) EVSE on January 1, 2021. Eleven (11) AC EVSE devices were evaluated in 2021 and received a CTEP COA. CDFA-DMS anticipates even more type evaluation applications in 2022 from AC and DC EVSE manufacturers. CTEP COAs are posted on CDFA-DMS' website at: https://www.cdfa.ca.gov/dms/programs/ctep/ctep.html

    - CDFA-DMS is the first government entity in the U.S. to type evaluate ZEV fueling devices. In 2021, NCWM's National Type Evaluation Program (NTEP) has asked for CDFA-DMS' assistance to make the NTEP process consistent with CTEP's evaluation processes for AC and DC EVSE. The continued coordinated efforts between these programs further promote national uniformity of type approved devices throughout the country.

- County Offices of Weights and Measures – CDFA-DMS and county sealers are required by law to periodically inspect and test all devices used for commercial purposes. State and county sealers also have authority to inspect and test commercial devices on a more frequent basis, e.g., to investigate a consumer complaint, at the request of the device owner, or for another reason as determined by the sealer. When a sealer determines that the device is correct, the sealer will affix an approval seal

(adhesive sticker) to the device. This approval seal indicates to the device user (in this case, the ZEV driver) that the fuel dispenser was tested and determined to be correct. This gives confidence that the measuring system is working properly. The oversight is ongoing and continues to grow as the number of ZEV fuel dispensers increase in California.

- Hydrogen Fuel Dispensers and Fuel Quality Testing
    - CDFA-DMS requires hydrogen fuel dispensers to be inspected and tested annually by state or county sealers.
    - The California Fuel Cell Partnership (CaFCP) compiles hydrogen station information. The CaFCP Station Map is publicly available at: https://cafcp.org/stationmap
    - As of January 3, 2022, the CaFCP database reported 48 hydrogen stations are open for retail business with 5 more expected to open in the coming months. Soon, 53 stations will be available to ZEV drivers. An additional 54 hydrogen fueling stations are in various stages of planning, permitting, or construction and are expected to open in 2022 or 2023. The fuel dispensers installed at those new retail locations will be inspected and sealed by state or county sealers.
    - There are 61 hydrogen fuel dispensers installed at the 53 hydrogen fuel stations in the state. Each of these dispensers are expected to be tested at least once in 2022.
    - Currently, hydrogen vehicle fuel sold in California is 100% compliant with adopted fuel quality specifications. For the past five years, CDFA-DMS has conducted routine sampling and testing in its Sacramento laboratory. California's ZEV drivers can feel confident that they are fueling their hydrogen fuel cell vehicles with a high-quality product.
- EVSE and Device Testing
    - California regulations require commercial EVSE to be inspected and tested at least once every two years. The first test of a newly installed AC EVSE occurs when it is first placed into service and then tests occur at least every two years thereafter.

- The United States Department of Energy compiles EV charging station information in its Alternative Fuels Data Center (AFDC). This information is publicly available at: https://afdc.energy.gov/fuels/electricity_locations.html#/analyze?fuel=ELEC

- An individual EVSE may be designed with one or more ports, analogous to a gasoline dispenser with several hoses and nozzles. Each port provides energy to only one vehicle at a time. In addition to two or more ports per EVSE, some also come equipped with different port connectors (plugs) that adapt to almost every electric vehicle driven in the state. Beginning January 1, 2022, the AFDC reported a total of 35,249 individual EVSE ports in California. This includes both AC and DC EVSE. CDFA-DMS estimates that the majority of EVSE in California are used for commercial purposes. AC EVSE installed after January 1, 2021 are required to be inspected at least once every two years by either state or county sealers. To meet this demanding goal in 2022, both state and county sealers will:

  1) Need to identify the number AC EVSE installed in their jurisdiction on or after January 1, 2021 and inspect only those devices, and

  2) Begin to register and assess appropriate device fees to offset the costs of testing the growing number of newly installed AC EVSE.

- Workforce Training:

  - County Offices of Weights and Measures – CDFA-DMS provides recommendations and suggestions to county sealers on how they may register, test, and track the locations of ZEV fuel dispensers used for commercial purposes. CDFA-DMS also conducts training for county weights and measures officials on the proper use of certified standards to test all ZEV fuel dispensers. The State is mandated to ensure that county weights and measures officials receive training on the safe and proper testing of new technology and ensure that uniform test methods are applied.

- EVSE Device Testing

    - CDFA-DMS continues its EVSE training sessions and field demonstrations for county weights and measures officials.

    - In 2021, CDFA-DMS secured funding via an interagency agreement with the California Energy Commission to add five new EVSE field test standards to its current inventory of two. These field test standards will be loaned to county offices of weights and measures for testing and sealing of commercial EVSE in their jurisdiction.

- Registered Service Agencies (RSAs)– CDFA-DMS continues to engage in outreach efforts to current and potential installers and repairers of ZEV fuel dispensers used for commercial purposes. Educational materials are provided to the industry who may not be aware of applicable laws and regulations which require companies and individuals to be registered with CDFA-DMS before performing installation and repairs to commercial devices. RSAs must also have suitable standards for their work to ensure that devices will be accurate.

    - CDFA-DMS reinstated its RSA Advisory Committee in 2021. The Committee's primary purpose is to advise CDFA of all matters pertaining to the RSA Program administered by CDFA-DMS. The Committee is also a venue to discuss ideas to improve the RSA Program, e.g., changes to legislation or regulations, and modifications to registration, licensing, and testing requirements. The Committee is made up of seven members who represent the device repair industry, device users, state and county sealers, and the public. Information regarding the RSA Program and RSA Advisory Committee meetings are available at: https://www.cdfa.ca.gov/dms/programs/rsa/rsa.html