DOCKETED	
Docket Number:	25-ALT-01
Project Title:	2025–2026 Investment Plan Update for the Clean Transportation Program
TN #:	263130
Document Title:	Teresa Cooke Comments - CTP Advisory Committee
Description:	N/A
Filer:	System
Organization:	Teresa Cooke
Submitter Role:	Public
Submission Date:	5/15/2025 5:04:18 PM
Docketed Date:	5/16/2025

Comment Received From: Teresa Cooke
Submitted On: 5/15/2025
Docket Number: 25-ALT-01

CTP Advisory Committee

Additional submitted attachment is included below.

May 15, 2025

Commissioner Nancy Skinner
Clean Transportation Program Advisory Committee
California Energy Commission
715 P Street
Sacramento, CA 95814

Re: Clean Transportation Program Advisory Committee – Guiding Principles and Workshop

Dear Commissioner Skinner and Members of the Clean Transportation Program Advisory Committee:

The California Hydrogen Coalition (CHC) appreciates the opportunity to provide comments in support of a multi-pathway zero-emission transportation strategy for California. We strongly advocate for technology-neutral policies that advance both battery-electric and hydrogen fuel cell electric vehicles (FCEVs). We urge renewed attention to hydrogen refueling infrastructure, which has been chronically underfunded relative to charging infrastructure in the Clean Transportation Program (CTP). Achieving the state's climate and air quality goals requires robust investment across all zero-emission pathways, and we write to ensure hydrogen's deployment is fully supported and accelerated. Below, we outline our concerns and recommendations, supported by statutory mandates and data from state agencies and research.

Support for a Multi-Pathway ZEV Strategy & Funding of Hydrogen Refueling

CHC reiterates its support for California's multi-pronged approach to zero-emission transportation. Both electric charging and hydrogen fueling are critical to meeting California's clean transportation goals. However, public investment to date has heavily favored battery-electric infrastructure. The California Energy Commission (CEC) has invested over $600 million in zero-emission vehicle infrastructure (all fuels) and the state approved nearly $4 billion more in recent years.[1] The California Public Utilities Commission has authorized $2.85 billion for utility-run EV charging programs.[2] By contrast, funding for hydrogen stations has been a small fraction of this total. Approximately $279 million in CEC funds have been directed to light-duty hydrogen stations to date (with a modest $27 million pending and a one-time $60 million budget augmentation).[3] This disparity exists despite hydrogen's value proposition for long-range, fast refueling, and heavy-duty applications, and it underscores that hydrogen fueling has been under-resourced in the CTP. CHC is concerned that without corrective action, the hydrogen network will continue to lag, imperiling California's technology-neutral ZEV goals. We urge the CEC to recognize this imbalance and bolster hydrogen infrastructure funding.

[1] California Energy Commission (2022). *Zero-Emission Vehicle Infrastructure Plan (ZIP),* Appendix A, Tables 1-3
[2] Ibid
[3] Ibid

Preservation of Hydrogen Funding in AB 126 and Unmet Mandates (AB 8 and Executive Order B-48-18)

CHC fought vigorously to preserve dedicated hydrogen funding in Assembly Bill 126 (Reyes, 2023), which modernized and reauthorized the CTP. Thanks to stakeholder engagement, AB 126 now guarantees at least 15% of annual CTP base funds for hydrogen infrastructure through 2030. This 15% set-aside (about $15 million of the ~$100 million annual program) is a floor, not a ceiling. We stress that this was a hard-won protection for hydrogen in an environment where some sought to reduce or eliminate hydrogen funding altogether. CHC appreciates that AB 126 also requires the CEC to issue at least one hydrogen infrastructure solicitation annually (within 90 days of each fiscal year start). These provisions were intended to ensure steady progress on the hydrogen network. Unfortunately, the CEC's execution of prior mandates has fallen short. Under AB 8 (Perea, 2013), the CEC was directed to allocate up to $20 million per year for hydrogen stations until at least 100 publicly available stations are in operation. To date, that target of 100 stations has not been achieved, fewer than 65 are open presently. Moreover, some funds earmarked for hydrogen under AB8 were not fully expended, as several early station projects stalled or were canceled. CHC requests that the CEC fulfill the spirit and letter of AB 8 by completing the build-out of 100 stations as expeditiously as possible. Any previously unencumbered or returned funds from earlier hydrogen solicitations should be reallocated directly into new hydrogen station development opportunities, rather than being absorbed into other program categories.

Executive Order B-48-18 (2018) further underscores the state's commitment to hydrogen infrastructure. This order established a goal of 200 hydrogen fueling stations by 2025 (alongside 250,000 electric vehicle chargers. With 2025 upon us, California is far from this hydrogen target. The latest assessments project barely ~129 stations by 2030 on our current trajectory, a stark shortfall given the 200-station goal for 2025. In contrast, the EV charger roll-out is accelerating toward its target. The CEC's obligations under B-48-18 and AB 8 remain only partially met, and time is running out. CHC emphasizes that full execution of the 100 stations under AB 8 is a minimum first step, and planning must immediately extend toward the 200-station benchmark from B-48-18. We respectfully demand that CEC use all available tools, including the new AB 126 funding allocations and any reappropriated funds, to expedite hydrogen station deployment and catch up to the state's mandates. Failing to do so not only violate past legislative and executive directives, but it also risks leaving fuel cell vehicle drivers without a viable refueling network, undermining consumer confidence in this pillar of the ZEV strategy.

Disparity in Public Investment vs. Charging Infrastructure

A review of public data reveals a striking imbalance in infrastructure investment. As noted, billions in state and ratepayer funding have been poured into EV charging, while hydrogen has received only a few hundred million. The CEC's own *Zero-Emission Vehicle Infrastructure Plan (ZIP)* highlights that California has allocated a historic $10 billion over five years for ZEV infrastructure and vehicles, an encouraging figure, but one that masks the lopsided distribution. Much of that sum comes from general funds and utility programs earmarked for charging. Indeed, CEC investments for light-duty hydrogen stations (~$279M encumbered and installed) amount to less than 10% of what electric charging has garnered when considering CTP funds plus utility programs. The disparity is even more pronounced in the heavy-duty sector: over $2 billion of state budget funds are dedicated to medium/heavy-duty ZEV infrastructure (mostly for battery-electric trucks and buses), and the CPUC authorized $738 million specifically for medium/heavy-duty charging projects. In contrast, hydrogen infrastructure for trucks and

buses has seen only niche pilot funding to date (on the order of ~$50–100 million across a few demonstration projects).

The consequence of this funding gap is evident; California's hydrogen station network is developing far more slowly than needed. The *ZIP report* and recent CTP Advisory Committee meeting materials (April 30, 2025) underscore that light-duty FCEV growth has been constrained by station availability, and nascent markets like medium-duty fuel cell trucks lack a fueling network. Public comments at the April 30 meeting noted that while battery-electric investments are outlined in detail, hydrogen fueling is treated almost as an afterthought, with minimal committed funding and no clear long-term. CHC finds this approach inconsistent with California's stated "technology neutral" ZEV strategy. With 95% of vehicles on the road still powered by internal combustion engines, it is premature to narrow our focus to a single zero-emission technology. Hydrogen fuel cell vehicles offer unique advantages (long range, fast refuel, heavier payload capability) that complement battery electrics, and they are critical for segments like long-haul trucking, high-utilization fleets, and drivers without reliable access to charging. We therefore call on the CEC to correct the investment disparity. Consistent with AB 126's intent, at least 15% (and ideally 20%) of CTP funds each year should be devoted to hydrogen infrastructure and if other sources (General Fund, federal dollars, etc.) amplify charging investments, hydrogen should receive parallel augmentation to maintain balance. Additionally, any undersubscribed funds in other categories or unspent monies from past hydrogen solicitations must be promptly redirected into new hydrogen station grants. This will ensure that California's hydrogen network expansion is commensurate with its ambitious vehicle deployment goals.

Evidence from the California Air Resources Board's AB 8 Annual Evaluations and NREL data further justifies this urgency. CARB's latest (2024) evaluation notes that station deployment has "not kept pace with prior projections", and delays in the hydrogen network are now stalling FCEV rollout by automakers. Meanwhile, the *SB 671 Clean Freight Corridor Assessment* (2023) found that building a zero-emission freight system will require robust investment in both charging and hydrogen along major corridors. In fact, the assessment's initial modeling indicates an "initial viable" network for heavy-duty trucks should include about 15 hydrogen fueling stations strategically placed along the top 6 freight corridors, alongside dozens of charging sites, to enable reliable goods movement statewide.[4] This underscores that even in trucking, a dual-pathway approach is essential, a finding CEC should heed by providing parity between heavy-duty hydrogen and heavy-duty charging projects. To date, hydrogen projects have often been forced to compete in joint solicitations with battery projects that are more mature or lower in upfront costs, resulting in hydrogen under-selection. We recommend structuring separate, dedicated funding competitions (or equitable carve-outs) so that hydrogen infrastructure for freight and transit can advance on a level playing field with charging infrastructure.

Renewable Hydrogen Content and Environmental Co-Benefits

CHC also wishes to dispel any misconception that hydrogen fuel lacks renewable content or climate benefits. By law, all hydrogen fuel dispensed at public stations in California must include at least 33% renewable hydrogen (per SB 1505, 2006). In practice, the network has exceeded this requirement. The notion that hydrogen is "mostly fossil" is outdated.

[4] California Transportation Commission (Dec. 2023). *SB 671 Clean Freight Corridor Assessment*

Renewable hydrogen from biomass and biogas offers unique environmental co-benefits that battery electrification cannot. The Lawrence Livermore National Lab's *"Getting to Neutral"* report (2020) identified biomass-derived hydrogen with carbon capture as a top "negative emissions" strategy for California. By gasifying organic waste to produce hydrogen and capturing the resulting CO_2, California can permanently sequester carbon while yielding clean fuel, effectively achieving net-negative greenhouse gas emissions. LLNL concluded that bio-hydrogen with carbon capture could provide the majority of the carbon removals needed for California to reach carbon neutrality by 2045. This approach also tackles waste management challenges: converting agricultural residues, forest thinning, and other biomass feedstocks into hydrogen prevents open burning or decay of these wastes. Open pile burning of biomass is a major source of criteria pollutants and carcinogens in many regions. Replacing open burns with controlled conversion to hydrogen can virtually eliminate those emissions. For instance, a Placer County analysis found that using biomass in a controlled facility (with pollution controls) versus open burning can reduce particulate matter ($PM_{2.5}$) by ~99%, methane and other VOC emissions by 95–99%, and NO_x by 40–70%. These are enormous air quality benefits, especially for communities in the Central Valley and other areas that suffer from agricultural burn smoke or dairy methane emissions. Similarly, renewable hydrogen from biogas (e.g. reformed from dairy digester gas or landfill gas) captures methane that would otherwise escape into the atmosphere or flared. Methane is a super-pollutant (84× the warming potential of CO_2 over 20 years), so every kilogram destroyed via productive use (like hydrogen fuel) helps climate efforts. In short, all forms of renewable hydrogen, whether produced by electrolysis using solar/wind, or from organic waste streams via digestion or gasification, provide substantial environmental advantages. CHC supports diverse hydrogen pathways and urges the state to craft policies and funding programs that help scale all these sources.

Recommendations

CHC submits the following specific recommendations to the CEC and the Advisory Committee to ensure hydrogen's equitable inclusion in the Clean Transportation Program and broader state ZEV initiatives:

- **Fulfill Statutory Hydrogen Funding Commitments:** Meet or exceed the 20% hydrogen funding allocation originally envisioned by AB 8 each year. At minimum, fully implement and exceed the 15% annual hydrogen allocation required by AB 126 and do so *consistently every budget year* without diversion or delay. The CEC should treat this as a floor and allocate additional funds if needed to achieve network targets (200 stations and beyond).

- **Reallocate Unused Hydrogen Funds to Stations:** Immediately reallocate any unused, unencumbered, or returned funds from prior hydrogen infrastructure solicitations back into new hydrogen station development grants. Funds that were set aside for hydrogen infrastructure (e.g. in earlier grant Funding Opportunities) but never spent should not be repurposed for other technologies. Rather, issue supplemental solicitations or "top off" existing projects to ensure every dollar goes toward building the station network. Full transparency on past hydrogen allocations and expenditures is needed to track this commitment.

- **Launch a Dedicated MD/LD Hydrogen Infrastructure Solicitation:** Create a near-term, dedicated funding solicitation for medium- and light-duty hydrogen refueling infrastructure. This solicitation should target deployment of stations that can serve both passenger FCEVs and the coming wave of medium-duty fuel cell vehicles (delivery vans, utility trucks, municipal fleets, etc.). Priority should be given to projects that enable "residential and corridor co-use" in other

words, stations that are accessible to the public (supporting local FCEV drivers) while also located strategically along key travel corridors to support commercial fleets and long-distance travel. By siting stations in community hubs and highway corridors, CEC can address critical gaps in coverage that currently hinder both everyday FCEV use and fleet. We note that the U.S. CAR Medium-Duty Hydrogen Infrastructure White Paper also emphasizes the need for this dual-use approach, as the current station network was not planned with medium-duty needs in mind.

- **Ensure Funding Parity in Heavy-Duty Grant Opportunities:** When allocating funds for heavy-duty ZEV infrastructure (for trucking, transit, port equipment, etc.), establish parity between hydrogen fuel and electric charging investments. The principle should avoid technology bias at this early stage in the market formation. Both battery-electric and fuel cell solutions are needed for heavy-duty applications (as confirmed by the SB 671 Freight Corridor Assessment), so funding programs should reflect a balanced approach. For example, upcoming freight corridor infrastructure grants should designate that both hydrogen stations and high-power chargers will be funded in each priority corridor, creating a complementary network. If necessary, carve out a percentage of funds or a number of awards specifically for hydrogen to ensure it is not overlooked.

- **Provide a Roadmap to 200+ Stations Statewide:** Develop and publicly release a comprehensive roadmap for achieving 200 or more hydrogen fueling stations statewide, consistent with Executive Order B-48-18's target and looking beyond 2030. This roadmap should include an annual build-out schedule, identification of high-need areas (both urban and rural), integration with private investment plans, and contingencies for potential shortfalls. It should also address medium/heavy-duty needs in parallel (e.g. set a goal for a certain number of truck-capable stations by 2030). Crucially, the roadmap must articulate how California will transition from the current fragmented network to a truly statewide hydrogen fueling system. Drivers should be confident that they can fuel a FCEV anywhere they might drive in California by the end of this decade. We urge the CEC, in collaboration with CARB (which provides annual station deployment recommendations under AB 8), to use the latest data and modeling to chart this course. Transparent station targets and timelines will help industry and local governments prepare and will signal to automakers that California remains committed to fuel cell vehicle success.

Conclusion

CHC underscores that California's clean transportation future hinges on diverse zero-emission solutions working in tandem. Battery-electric and hydrogen fuel cell technologies are complementary, and both are essential to eliminate emissions across all vehicle sectors. We commend the CEC for its past support of hydrogen (funding 60+ stations so far) but note that much more remains to be done to realize the vision of a robust hydrogen network. By following the recommendations above, fully funding hydrogen infrastructure each year, recouping unused funds, issuing targeted solicitations, equalizing heavy-duty funding, and planning for 200+ stations, the Commission can correct course and accelerate hydrogen deployment in line with legislative mandates and executive orders. This will ensure California maintains its global leadership in all forms of zero-emission transportation, not just one pathway.

Thank you for your consideration of these comments. CHC and its members are ready to support the Commission in executing a truly multi-pathway investment strategy. We are available for any questions and eager to continue collaborating to achieve California's clean air, climate, and equity goals.

Sincerely,

/s/

Teresa Cooke
Executive Director
California Hydrogen Coalition