SOUTHERN CALIFORNIA EDISON®

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October 12, 2021

Honorable Chair Liane M. Randolph
Honorable Board Members California Air Resources Board
1001 I Street
P.O. Box 2815
Sacramento, CA 95812

Submitted online to the "acf-comments-ws" comment submittal form

Re: Support for the Advanced Clean Fleets Rule

Dear Chair Randolph and Honorable Board Members:

Southern California Edison (SCE) appreciates the opportunity to comment on the proposed Advanced Clean Fleets (ACF) Rule.

The ACF Rule supports California's goals of addressing climate change and improving air quality.

SCE supports a successful ACF rule and is committed to accelerating the adoption of electric trucks and buses onto California's roads and highways. SCE is helping customers today to meet their infrastructure fleet transition needs while planning for the needs of tomorrow at the system-level broadly. Through our Charge Ready Transport medium- and heavy-duty (MDHD) EV infrastructure program, we are currently working with over 100 sites in our service territory to potentially support approximately 3,100 MDHD EVs, over 600 of which are HD vehicles.[1]

SCE is committed to supporting customers through the transition to zero-emission (ZE) modes of transportation that align with our shared goals and vision of a sustainable transportation network, with increasing numbers of electric vehicles on the road. This transformation plays an essential part in helping to meet California's goals, cutting greenhouse gases, and improving air quality, particularly in communities disproportionately burdened with air pollution impacts.

Increasing the adoption of MDHD zero-emission vehicles helps put the State on course to achieve greenhouse gas and air pollutant reduction targets.

[1] Charge Ready Transport program details as of September 15, 2021

SCE's Pathway 2045 whitepaper provides a blueprint for reaching California's greenhouse gas reduction and carbon neutrality goals.[2] An expeditious transition to ZE transportation is critical to the success of realizing California's goals. The Pathway 2045 whitepaper concludes that approximately 76% of light-duty vehicles[3], 67% of medium-duty vehicles, and 38% of heavy-duty vehicles will need to be electrified by 2045.[4] The CARB 2020 Mobile Source Strategy[5] charts a similar large-scale transition of the transportation sector across all segments to address emission reductions, modelling 85% ZEVs and plug-in hybrid electric vehicles[6] on-road for light-duty, 65% ZEVs for medium-duty vehicles, and 77% ZEVs for heavy-duty vehicles in 2045 to achieve multiple emission reduction goals.[7]

In addition to being the largest source of greenhouse gas emissions, the transportation sector is responsible for a majority of smog-forming nitrogen oxide (NOx) pollutants and is a significant source of air toxics having a detrimental impact on public health.[8] The ACF Rule and increasing ZE MDHD vehicles will provide important air quality and public health benefits, especially in reducing local and regional air pollution impacts from the goods movement sector and affected communities. Increasing ZE truck adoption at the state level can help support and complement important local and regional policies working to alleviate pollution impacts from MDHD segments.

SCE is electrifying its own fleet while ensuring that utility operations continue to provide a safe, reliable, affordable, clean, and resilient grid.

SCE is electrifying its fleet of nearly 4,450 on-road vehicles and powered trailers in line with Pathway 2045. SCE's fleet electrification plan phases in increasing levels of ZEVs in the utility fleet as vehicle models are available and suitable along a trajectory that meets or exceeds the

[2] "Pathway 2045, Update to the Clean Power and Electrification Pathway," Southern California Edison, November 2019. https://www.edison.com/home/our-perspective/pathway-2045.html

[3] SCE Pathway 2045 categories are defined by 6,000 lbs. or less gross vehicle weight rating (GVWR) for light-duty, between 6,000 and 14,500 lbs. for medium-duty, and greater than 14,500 lbs. for heavy-duty. In the proposed 2020 Mobile Source Strategy, CARB defines light-duty by a GVWR of less than or equal to 8,500 lbs., between 8,501 – 14,000 for medium-duty, and heavy-duty as vehicles above 14,000 lbs.

[4] The figures here represent the percentages of battery electric vehicles and plug-in hybrids only. When including hydrogen fuel cell vehicles, the Pathway 2045 figures are 88% ZEV of total stock for light-duty, 72% for medium-duty, and 58% for heavy-duty in 2045.

[5] "Proposed 2020 Mobile Source Strategy," CARB, September 2021. https://ww2.arb.ca.gov/sites/default/files/2021-09/Proposed_2020_Mobile_Source_Strategy.pdf

[6] The 85% figure includes ZEVs (battery-electric and hydrogen fuel cell electric vehicles) and plug-in hybrid electric vehicles (PHEVs).

[7] Percentage figures for the light-duty 2020 MSS scenario are from CARB's Vision model (accessed September 30, 2021) and percentage figures for medium- and heavy-duty are from CARB's META tool (accessed September 30, 2021) https://arb.ca.gov/emfac/meta/

[8] "Proposed 2020 Mobile Source Strategy," CARB, September 2021. https://ww2.arb.ca.gov/sites/default/files/2021-09/Proposed_2020_Mobile_Source_Strategy.pdf

electric vehicle adoption levels proposed in Pathway 2045.[9] Assuming aggressive and appropriate OEM product offerings are available and suitable, SCE estimates a potential transition of approximately 80% of the fleet by 2040 to zero-emission vehicles.[10] The availability of suitable substitutes is especially important in the early years of the ACF Rule requirements to ensure that an adequate supply for required vehicle body type categories are available on the market. There is a concern with the availability of electric power take-off (ePTO) work trucks to meet a 10% by 2027 requirement, given no current product availability for a ZE ePTO-equipped bucket work truck and limited all-wheel drive ZEV unit availability for off-road applications. SCE therefore recommends the work truck requirement for 10% by 2027 in the ACF Rule be applicable to work trucks that do not have an equipped ePTO, with a later required timeline for ePTO-equipped work trucks. The daily mileage exemption criteria only accounts for an electrified drivetrain, but not the energy and operational needs of auxiliary equipment potentially powered by an onboard battery for the truck to perform work at a job site.

There may also be cases where the vehicle can technically provide the necessary performance and is available in adequate market supply, but the particular use case proves a challenge in meeting operational needs. This is especially salient in cases of operations in remote areas, during emergency operations, or when the grid needs maintenance and restoration. SCE uses its fleet and equipment in remote locations, for storm support work and mutual aid scenarios, and emergency restoration, such as after fires or windstorms. These conditions may require continuous use and long duty cycles, require onboard equipment energy usage for auxiliary equipment beyond the capability of technologies currently available (operating drills, pumps, etc.), or need to operate under conditions where charging infrastructure does not exist or is unavailable.

SCE recommends consideration of the following to aid in ACF Rule requirements that ensure the increasing phased-in adoption of ZEVs in the market within the parameters of feasibility for specific utility fleet vehicle and equipment use cases:

- **Including overall vehicle energy usage in suitability:** Include exemption criteria for utility vehicles that go beyond daily mileage, to account for energy demands of auxiliary equipment central to utility vehicle applications (buckets, drillers, pumps, etc.).
- **Increasing backup vehicle mileage threshold:** Increasing the threshold for the backup vehicle exemption to 2,000 miles. A 1,000-mile annual limit threshold can drive early retirements, at a higher overall cost relative to emissions reductions compared with allowing continued low-use operation. From a GHG life-cycle emission standpoint, continued low-use operation may be a better path compared to the emissions impact of building a new unit.

[9] "2020 Sustainability Report," Edison International, June 2021. https://www.edison.com/content/dam/eix/documents/sustainability/eix-2020-sustainability-report.pdf

[10] It is important to note that this percentage varies with vehicle type and use cases. For example, medium-duty vans and pick-ups are expected to be 95% electrified, while other heavy-duty vehicle types such as construction tractors and loaders or insulator washers or pumpers are not assumed to provide a zero-emission option in that timeframe.

- **Removing the >75% of body type ZEV requirement from the emergency response exemption criteria:** Modify exemption criteria to address lack of zero-emission vehicle availability in the earlier years of the requirements or when a vehicle type is not available at all. A technical and commercialization determination of available and suitable technologies discussed below can inform the exemption criteria and process. As currently drafted the emergency response exemption only applies if >75% of that vehicle's body type is already ZEV. SCE has a sizeable fleet of work trucks and specialty vehicles and the current drafted requirements have these body types reaching >75% in 2036 and after for work trucks, and in 2039 and after for specialty vehicles. SCE recommends modifying the emergency response exemption to remove this >75% requirement.
- **Granting exemptions with appropriate lead time:** Complex work trucks can typically require a 24- to 36-month lead time from order to production. In addition, sourcing, testing, and evaluation of body and chassis can often take up to 12 months. For complex work trucks to be timely delivered, the CARB exemption decision for product availability will need to be made 3 to 4 years prior to the compliance deadline date so that complex work trucks with ZEV chassis can be evaluated, ordered, designed, produced, upfitted, and delivered. New ZEV chassis will require the most complex work trucks to be redesigned for new upfitting and power take-off requirements.

SCE believes that for most vehicle types and use cases, there will eventually be zero-emission substitutes for utility applications. There will also be instances where, for the continued operation and maintenance of a safe, reliable, affordable, clean, and resilient grid, it is necessary to have the flexibility needed to perform expected services. SCE is committed to an aggressive and feasible transition of its fleet in service of maintaining a grid that fuels increasing numbers of ZEVs in the state of CA. SCE also supports the concept of a technology review and commercialization determination review for the expected availability and suitability of vehicle types. These reviews could help fleets identify vehicles for transition with the best available data industrywide and importantly it could lessen the administrative burden of the exemption process for both the agency and regulated fleets, especially in the early years when availability of technologies for some use cases may be more uncertain.

Successful implementation of the ACF rule will require complementary policies providing adequate and reliable vehicle incentives.

To ensure a successful and orderly transition to zero-emission modes of transportation, it is important for the ACF to be complemented by the incentives required to spur early adoption and stable financial mechanisms to sustain market growth. California's incentives for MDHD EV adoption have had a meaningful impact through programs such as the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP). Still, more durable and new innovative funding mechanisms will be required to transform the transportation market and achieve the adoption figures to meet state goals. While the economics for MDHD EVs are growing increasingly favorable and funding included in the 2021 California state budget

represents significant progress in helping spur EV adoption, there remains a funding need. On a total cost of ownership basis assuming favorable cost trends and continuing and anticipated incentives, SCE still estimates a statewide funding need for MDHD electric vehicles of $0.5B, calculated by addressing the difference in total cost of ownership between battery electric and internal combustion engine vehicles.[11] Addressing the reduction of upfront costs, especially important for small and mid-sized fleets, would significantly increase the funding gap. The Long-Term Heavy-Duty Investment Strategy estimates an annual funding need over the next three years of $475M to $1B for the MDHD sector.[12]

A robust landscape of incentives and other financial mechanisms can spur significant early adoption and shape a glide path for adoption to the early years of the regulation. While we are continuing to make progress as a state, periodic starts and stops, short time windows and lack of sufficient incentive opportunities can create uncertainty for manufacturers and fleets who may wait until the eve of regulatory compliance, potentially missing the window of opportunity to take advantage of incentives and missing the opportunity to plan ahead with the necessary lead time for planning fleet transitions and implementation of necessary supportive infrastructure. In the meantime, we encourage CARB to consider modifications that increase the quantity of applications and increase broader access and reach for all fleet segments. Large fleets are especially important to a scaled transformation of the transportation sector.

Planning ahead for infrastructure needs at both sites and broader at the system-level depends on the best available data from fleets shared with utilities.

Increased utilization of MDHD ZE vehicles will create significant growth in transportation-related electricity demand and associated needs for utility infrastructure upgrades and customer-side charging infrastructure. Utilities and fleets will need to work together to assess impacts and plan ahead to ensure the necessary infrastructure is successfully in place to meet expected compliance timelines. SCE is currently assessing the estimated grid impacts and needs to support significant increasing levels of MDHD EV load.

As part of this process, SCE is evaluating when and where MDHD EVs are likely to appear as charging loads, the potential magnitude of that load, and what grid changes would be necessary to accommodate that load. This evaluation process incorporates information from industry, available information from customers, and the CEC's AB 2127 EV Charging Infrastructure Assessment study. In order to augment and enhance these planning activities – and importantly – in order to make the planning actionable in terms of assessing needs and preparing to make the necessary investments for deployment, it is critical for fleets to provide data around vehicle and infrastructure plans.

[11] "Mind the Gap: Policies for California's Countdown to 2030," Southern California Edison, September 2021. https://www.edison.com/home/our-perspective/mind-the-gap.html

[12] "Long-Term Heavy-Duty Investment Strategy," CARB, November 2020, https://ww2.arb.ca.gov/sites/default/files/2020-11/appd_hd_invest_strat.pdf

CARB's Innovative Clean Transit Zero-Emission Bus Rollout Plans[13] provide an effective structure and model for sharing this information with utilities. Information from fleets regarding planned or considered deployments is critical information to utilities as infrastructure providers. Developing and sharing transition plans serves two vital functions:

- **Catalyzing early in-depth engagement between fleets and utilities**: Developing a transition plan or sharing fleet and infrastructure requirements with utilities can kickstart the utility-fleet interaction, encouraging fleets to engage in the process early with important communication and dialogue around process-steps, necessary requirements, and expectations so that there are not delays down the road, especially important for near-term deployments.
- **Increasing visibility and providing better information to increase confidence in planning**: There may be specific sites with capacity constraints in the near-term, and it is important for utilities to get ahead to advise on options, solutions, and alternative approaches. This information is also critical for longer term system-wide planning needs. Data from fleets or co-developed with fleets that provides more specificity and granularity regarding the location, timing, and magnitude of future charging needs is imperative to proactively assess impacts and efficiently plan for grid impacts system-wide over the next ten years when we expect a dramatic transformation of MDHD segments.

SCE recommends that CARB develop a requirement for ACF Plans from fleets similar to the Innovative Clean Transit Zero-Emission Bus Rollout Plans, or at minimum, CARB collect and share with utilities information from fleets related to:

- Vehicle Type
- Vehicle Unit Numbers/Fleet size at location (how many vehicles) of what fuel type (Battery Electric, Hybrid, Fuel Cell)
- If charging, what type/rate of charging is anticipated
- Locations (physical address where vehicles park)
- Timeline:
    - Where is initial immediate deployment expected (<2 years)
    - Mid-term plans over 5-years, and
    - Longer term 10-year horizon

Understandably, there may be confidentiality concerns among the private fleets. SCE suggests CARB explore the option of housing the information at one of the agencies or at a public-private partnership where relevant information can be shared with appropriate utilities and infrastructure providers. This is an important foundation in assessing needs – especially where lead times for grid-related infrastructure can be 5-10 years, when considering needs for new substations or distribution lines.

[13] CARB Innovative Clean Transit Zero-Emission Bus Rollout Plans, https://ww2.arb.ca.gov/our-work/programs/innovative-clean-transit/ict-rollout-plans

Infrastructure is a challenge that requires heightened attention, but it is not an insurmountable challenge. SCE is currently working with over 100 sites to support 3,100 MDHD EVs in our Charge Ready Transport MDHD EV infrastructure program. As we think about even larger-scale electrification of the MDHD sector required by the ACF, the planning ahead is even more paramount with a greater need for structured and ongoing data gathering and sharing between fleets, utilities, agencies, and public-private partnerships.

There are challenges ahead as we increase ZE vehicles in fleets across California – from incentives to infrastructure. SCE views the challenges and work ahead as a call to action for all key stakeholders and we are committed to doing our part – transitioning our own fleet vehicles and partnering with customers and the State to ensure a successful transition to the necessary ZE technology solutions that set us on a path to achieving our air quality and climate goals.

Thank you for considering our comments regarding this important regulation.

Sincerely,

/s/ Vazken Kassakhian

Vazken Kassakhian
Senior Advisor, Strategy and Policy Development
Regulatory Affairs
Southern California Edison