



September 15, 2025
LEG 2025-0082

Mr. Paul Arneja
Manager, In-Use Control Measures Section
California Air Resource Board
1001 I Street
Sacramento, California 95814

RE: Sacramento Municipal Utility District Comments on the Proposed Advanced Clean Fleets Amendments

SMUD appreciates the opportunity to provide comments on the proposed amendments to the Advanced Clean Fleets (ACF) regulation.¹

SMUD is the sixth largest publicly owned electric utility (POU) in the country and serves over 670,000 customer meters, or a population of approximately 1.5 million, over 900 square miles in Sacramento County and small adjoining portions of Placer and Yolo County. SMUD relies on a fleet of approximately 400 medium- and heavy-duty (MHD) vehicles to support its operations within and outside of its service area, including approximately 10,000 acres in the western Sierra Nevada that includes hydroelectric generation and transmission, as well as to provide mutual aid across the state and country in response to disasters like Redding's Carr Fire in Puerto Rico's Hurricane Maria. SMUD has a long history of environmental leadership, and in 2021, SMUD's Board of Directors approved SMUD's 2030 Zero Carbon Plan, which establishes an ambitious goal for SMUD to remove all carbon emissions from its power supply by 2030, within the guardrails of reliability and affordability. The plan additionally recognizes the important greenhouse gas (GHG) reduction, air quality, and potential customer energy bill benefits of electrification, and sets ambitious building and vehicle electrification targets.

SMUD is aligned with the objectives of ACF and is a leader in electrifying its own fleets. However, SMUD, like others, is faced with the reality that the outlook for ZEV market development in 2022, when CARB initiated the ACF rulemaking, is dramatically different from the outlook today. The elimination of federal incentives, challenges to California's Clean Air Act waivers, and the narrowed scope of ACF all present barriers to ZEV market development that were not present in 2022. While the full scale of these impacts is unknown, this uncertainty may cause disruption for nascent ZEV markets for heavier and specialized utility vehicles. Moreover, with nearly two years of ACF implementation experience, there is greater clarity on barriers that public agency fleets currently face in transitioning MHD vehicles to

¹ https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2025/acf_lcfs/atta1.pdf

ZEVs. These challenges include both limited ZEV truck offerings and access barriers to existing ACF exemptions. While SMUD believes the ACF still has the potential to serve as a model for how policy can drive fleet electrification progress, amendments are needed to ensure that the rule is durable and provides reasonable and achievable paths to compliance for public agencies – especially for POUs that must provide safe, affordable, reliable, and resilient electricity service – while still increasing ZEV deployments in public agency fleets. The need for such amendments is underscored as the potential for success of the ZEV transition is facing heightened scrutiny.

SMUD therefore recommends that CARB incorporate the following recommendations into the proposed 45-day amendments:

- **ZEV Milestones Option** – Allow fleets to switch between the ZEV Milestones Option and ZEV Purchase Schedule, provided compliance is maintained, and ensure fleets have access to critical exemptions regardless of which compliance path they choose.
- **Mutual Aid** – Remove unnecessary access barriers and allow fleets to designate emergency response vehicles upfront, which will enable greater planning certainty for both fleets and CARB.
- **ZEV Purchase Schedule** – Extend the 50 percent purchase requirement through 2030, reducing the need for exemption applications and enabling better fleet planning while the ZEV market develops.
- **NZEV Definition** – Revise definition to conform with changes to the Advanced Clean Trucks regulations and to include internal combustion engine (ICE) vehicles with electric power takeoff, as such vehicles are readily available and can immediately deliver emissions reductions.
- **ZEV Purchase Exemption** – Address critical gaps in coverage, including affordability protections for public agencies that have limited options to absorb steep price premiums, and provide a more transparent and specific process for determining whether a commercially available ZEV can meet the fleet needs.
- **ZEV Unavailability List** – Establish minimum commercial availability criteria, including performance testing, in-state warranty support, and demonstration that vehicles have been placed into service, which must be satisfied before vehicle configurations are removed from the list. Such criteria will provide greater certainty for fleet owners and improve streamlining benefits.
- **Daily Usage Exemption** – Remove data access barriers that limit fleets' ability to use this exemption and clarify which ICE vehicles will be included in the ZEV comparison process.
- **Other Changes** – Allow fleet owners to access exemptions when adding vehicles, clarify the definition of “traditional utility specialized vehicles” to conform to operational needs, and provide a separate exemption process to address unforeseen circumstances not captured in the regulation.

These recommendations are further detailed below. SMUD also appreciates there may be alternative approaches to address the challenges facing public agencies.

SMUD is eager to explore any solutions that achieve the same outcomes as those sought through its recommendations – advancing the ZEV transition without adverse impacts to affordable, reliable, and resilient public services.

I. ZEV Milestones Option

SMUD continues to appreciate the inclusion of the ZEV Milestones Option as an alternate compliance approach for public fleets, as this option has the potential to align well with individual fleets' procurement practices. However, the structure of the ZEV Milestones Option presents unique challenges for public agencies, like SMUD, whose fleet makeup is not well aligned with CARB's three milestone categories. For example, about 75 percent of SMUD's fleet – including approximately 50 pickup trucks, 150 service, dump, and flatbed trucks, and 80 class 5-7 aeriels – falls within Group 2. There is significant variability on how easily these vehicles can be replaced with ZEVs. For example, while ZEV pickups are readily available and successfully demonstrated for many use cases, there is much greater uncertainty regarding future availability and suitability of the other vehicles. As a result, SMUD's ability to comply through the ZEV Milestones Option once the Group 2 milestone hits 25 percent will be highly dependent on market development factors beyond SMUD's control. SMUD therefore recommends two modest changes to ensure this compliance option remains viable for all public fleets, regardless of the types of vehicles they operate.

Allow fleets to switch between the ZEV Milestones Option and the ZEV Purchase Schedule, provided the fleet remains in compliance. Section 2013 (e) specifies that fleets may, until January 1, 2030, elect to permanently comply with the ZEV Milestones Option. However, fleets may not switch back to the ZEV Purchase Schedule after making this election. SMUD understands that CARB staff is considering a proposal to allow fleets to switch between the two compliance options provided they remain in compliance during the year of the switch as well as the immediately preceding year. SMUD strongly supports the incorporation of such a change, which would allow fleet owners greater flexibility to adjust their ACF compliance strategy in response to evolving ZEV market conditions while still ensuring that fleets meet required purchase or milestone requirements.

Allow ZEV Milestones Option fleets to access the ZEV purchase and daily usage exemption if the fleet could not meet its milestone by converting any other vehicle purchase made in the two years preceding the milestone to ZEV. Section 2013.6 (g)(2) and (g)(5) specify that Daily Usage and ZEV Purchase exemptions, respectively, will be granted only if the fleet owner demonstrates their next applicable milestone cannot be reached without exemptions, by requesting and obtaining exemptions for all other ICE vehicles in their fleet. SMUD recognizes that this requirement is intended to ensure that fleets complying through the ZEV Milestones Option focus their procurement efforts on available ZEVs. However, it shifts significant risk onto the fleet owner if needed ZEV configurations – particularly

heavier and more specialized vehicles – do not materialize on the fleet owner's procurement timeline.

This can lead to a scenario where the fleet owner is forced to remove ICE vehicles well ahead of their end of useful lives, simply because the configuration the fleet owner needs is not available as a ZEV. This presents a particular challenge for public agencies, which are charged with stewardship of public funds. For example, between 2020 and 2024, SMUD purchased 27 new medium-duty vans upfitted for use by electrical technicians and meter technicians. The vans have expected useful lives of 10 to 13 years. SMUD's early ACF compliance strategy has focused on purchasing ZEV pickup trucks, which are currently best positioned to replace ICE vehicle counterparts; however, there are a finite number of pickups that SMUD needs. After these ZEV pickup purchases are complete, SMUD anticipates needing to submit exemption applications for specialized trucks that are not yet available in the needed ZEV configuration. Under the current ZEV Milestones Option requirements, SMUD's exemption applications would be denied, and SMUD would instead be forced to replace its vans years ahead of schedule, and at a potentially significant loss, through no fault of its own. Moreover, even where no ZEVs exist in any of the fleet owner's needed configurations, the requirement to apply for and receive exemptions for all remaining ICE vehicles establishes a challenging administrative bar for larger fleets, like SMUD, that have several hundred vehicles covered by the regulation.

To balance these considerations, SMUD recommends that CARB modify the requirement. Instead of requiring ZEV Milestones Option fleet owners to demonstrate that no remaining vehicle in the entire *fleet* could be converted to ZEV, fleet owners should make this demonstration for all vehicle purchases within the two calendar years preceding the applicable milestone target. This approach aligns with CARB's timeline for requesting exemptions under the ZEV Milestones Option and would require fleet owners to take all reasonable steps to purchase ZEVs ahead of the next applicable milestone but provides modest protection for public investments if the needed ZEV configurations are not available.

Suggested amendments. Consistent with the above recommendations, SMUD offers the following specific amendments to the ZEV Milestones Option:

ZEV Milestones Option Flexibility. Until January 1, 2030, in lieu of complying with the requirements of section 2013.1, fleet owners may instead elect to permanently comply with the ZEV Milestones Option of section 2013.6. The fleet owner must also report their intention to use this option as specified in section 2013.3(c)(1)(I). ~~After electing to use this option, fleet owners are no longer subject to and may not switch back to the requirements specified in section 2013.1.~~ Fleet owners may switch between the ZEV Milestones Option of section 2013.6 and the ZEV Purchase Schedule of section 2013.1, provided their California fleet was compliant with the current option in the prior calendar year, and their California fleet complies with the new option in the current year. Changing compliance options must be reported during the annual reporting period specified in section 2013.3(b).

ZEV Purchase Exemption. Fleet owners must use the exemption in section 2013.2(d)(1) or request the exemption in section 2013.2(d)(2) no later than one year and no earlier than two years before the next applicable upcoming ZEV Milestone compliance date specified in section 2013.6(c). The Executive Officer will grant the following exemptions only if the fleet owner demonstrates their next applicable upcoming ZEV Milestone cannot be reached without exemptions by requesting and obtaining exemptions for all other ICE vehicles the fleet owner purchased in the two years preceding the applicable ZEV Milestone in their California fleet.

II. Mutual Aid Exemption

The Mutual Aid exemption is intended to provide critical flexibility for public agency utilities that have mutual aid agreements and must be prepared to respond to emergencies, inside or outside their service areas, at any time. However, several of the current requirements are impractical or unnecessarily limit fleets' ability to access the exemption. SMUD offers several recommendations, detailed below, to reduce barriers and improve planning certainty for fleets and CARB.

Allow fleets the option to designate mutual aid and emergency response vehicles upfront to enable better planning. Currently, fleet owners may apply for the Mutual Aid exemption only when purchasing new vehicles. However, SMUD recommends that CARB allow fleet owners to make an upfront designation of vehicles needed for emergency response using a similar process to the current exemption requirements. Once vehicles are designated, fleet owners complying with the ZEV Milestones Option could exclude them from milestone calculations, and fleet owners complying with the ZEV Purchase Schedule could replace them without applying for a new exemption. While, in some case, the entire vehicle fleet may be deployed to respond to major emergency events, there are certain types of vehicles – such as line trucks – that are always called on for storm response and power restoration work. An upfront designation would provide greater certainty and allow

fleet owners to focus their near- and mid-term ZEV procurement strategy on vehicle replacements that are well-suited for their needs and less likely to be called on for emergency response, rather than waiting each year for confirmation that an exemption application will be approved. An upfront designation would also provide greater forecast certainty for CARB.

SMUD further recommends that, after the initial designation, fleet owners should be authorized to change designations when replacing vehicles or when the fleet size has increased. This framework would provide modest flexibility for fleet owners to adjust their emergency response strategy as more ZEV trucks, and information about ZEV truck performance, become available, while also protecting the integrity of the exemption.

Finally, SMUD notes that the current exemption's cap of 25 percent may pose challenges for certain fleets, particularly those that are small or that maintain and operate infrastructure across large or non-urban areas. Even for SMUD, there have been instances when the entire vehicle fleet was deployed to support power restoration and storm response activities, such as during the historic January 2023 storms that downed hundreds of trees, poles, and wires in the Sacramento region and affected approximately 600,000 SMUD customers. Fleet owners' exposure to emergencies, and by extension their anticipated vehicle needs, may vary, so SMUD continues to support a separate process through which fleet owners may petition CARB for a larger cap.

Defer ZEV mobile refueling criteria until 2035, after emerging technologies have been adequately field demonstrated, and provide an offramp when mobile refueling solutions are not practical. Currently, fleets may qualify for the Mutual Aid exemption only if no compatible mobile fueling option can refuel a ZEV from 10 to 80 percent in one hour. ZEV mobile fueling options are conceptually analogous to diesel fueling trucks, and SMUD appreciates that multiple companies are developing or launching mobile charging solutions. However, these offerings are still relatively nascent, with limited data available on real-world performance – for example, whether chargers reliably deliver the rated power output for all vehicles, and how performance is affected by extreme weather conditions.

Moreover, current mobile fueling solutions are not positioned to replace a fuel truck, which can rapidly refuel dozens of trucks on a single tank. For example, SMUD operates a fuel truck with a capacity of nearly 3,000 gallons. Most of the vehicles in SMUD's MHD fleet have a fuel tank of approximately 50 gallons, each of which can be fueled in 5-10 minutes. In an emergency response scenario, SMUD could refuel up to 60 vehicles with its fuel truck before the fuel truck would need to be refilled. By contrast, a mobile charger with a 400kWh battery onboard could charge only three or four class 2b-3 trucks or one to two class 8 trucks. Each class 2b-3 truck would take approximately 30-40 minutes to charge to 80 percent, and each heavy-duty truck would take approximately 1.5 hours. Once that singular 400kWh mobile fueling solution was depleted, it would take an additional five hours to recharge it.

To replace one 3,000-gallon fuel truck, SMUD estimates that roughly 15 mobile fueling solutions (and trucks to tow or haul them) would be needed. Additional dispatch logistics and lengthy recharging times risk delaying critical grid maintenance and power restoration work – and when lives and livelihoods are at stake, every minute counts.

SMUD anticipates that, over time, mobile ZEV fueling solutions will continue to improve. In the interim, however, it would be prudent to focus in the near-term on expanding and proving out mobile fueling options in non-emergency situations (e.g., providing temporary charging solutions for fleets while needed electrical infrastructure is built out) and temporarily deferring this regulatory requirement until 2035, when the technology and use cases have been demonstrated in the field. SMUD additionally recommends including a provision to address scenarios when mobile fueling solutions are technically compatible but not practical due to logistics.

Clarify applicability to the ZEV Milestones Option. Section 2013.2 (e) of the proposed regulation allows fleet owners complying with either the ZEV Purchase Schedule or ZEV Milestones Option to request the Mutual Aid exemption to purchase new ICE vehicles. However, compliance with the ZEV Milestones Option is based on ZEV fleet composition requirements, rather than the purchase of new vehicles. SMUD recommends clarifying that, for fleets on the ZEV Milestones Option, the Mutual Aid exemption may be used to exclude new or existing vehicles from the milestone calculation. This clarification is needed so that fleets complying with the ZEV Milestones Option are not required to purchase new ICE trucks simply to designate them for emergency response.

Specify that vehicles purchased through other exemptions do not count toward the 25 percent limit. Currently, section 2013.2 (e) limits vehicles under the Mutual Aid exemption to 25 percent of the fleet owner's total vehicles, less any ICE vehicles pursuant to a granted exemption. SMUD recommends that vehicles purchased pursuant to the ZEV Purchase or Daily Usage exemption should not count against the 25 percent limit. There is not necessarily an overlap between unavailable vehicles and vehicles the fleet owner will rely on for mutual aid and emergency response. The modest protections afforded by the Mutual Aid exemption should not be reduced solely because other ZEVs are unavailable or cannot meet the fleet owner's needs.

Lower threshold to allow fleets to access exemption. Section 2013.2 (e) also establishes escalating ZEV thresholds that must be met to access the exemption, starting with 25 percent. SMUD recognizes that CARB's intent is to ensure that public agencies still purchase ZEVs, and SMUD believed that this approach was reasonable based on conditions in 2022. However, it may have the unintended effect of pushing the exemption out of reach for fleet owners that, due to market availability and other circumstances outside their control, may take longer to meet these thresholds – but still need to purchase or maintain demonstrated, reliable vehicles for emergency response. Moreover, the suite of existing ACF requirements ensures

that ZEVs must be purchased if they are available and meet the fleet owner's needs. SMUD therefore recommends that CARB reduce the ZEV thresholds to 10 percent.

Suggested amendments. Consistent with the above recommendations, SMUD offers the following specific amendments to the Mutual Aid exemption:

(e) Mutual Aid Assistance. Fleet owners may request this exemption as specified in section 2013.1(f)(5) or 2013.6(g)(6) to designate up to 25 percent of their fleet or 50 vehicles as emergency response vehicles ~~to purchase new ICE vehicles~~. ~~The total number of new ICE vehicles allowed to be purchased under this exemption must not exceed 25 percent of the total number of vehicles in the fleet owner's California fleet in the calendar year the exemption is approved, less the number of ICE vehicles already in the fleet purchased pursuant to a granted exemption.~~ Designated emergency response vehicles may be excluded from the ZEV Purchase Schedule in section 2013.1 (a) and the calculation of ZEV Milestones in section 2013.6 (c)(1). Fleet owners must have a mutual aid agreement to send vehicles to assist other entities during a declared emergency event to apply. Designated emergency response vehicles do not include ~~This exemption does not apply to~~ pickup trucks, buses, box trucks, vans, tractors, or any vehicle configurations available to purchase as NZEVs.

(1) Designation of emergency response vehicles. The fleet owner may designate emergency response vehicles prior to January 1, 2035, by submitting the following information to TRUCRS@arb.ca.gov:

(A) The TRUCRS ID of the fleet

(B) The make, model, weight class, configuration, VIN, and a photograph for each of the needed ICE vehicle to be designated as an emergency response vehicle; and

(C) A copy of the mutual aid agreement in effect with other entities to assist with affected vehicles during declared emergency events

(2) Changes to designated emergency response vehicles.

(A) Fleet owners may add or change designated emergency response vehicles, subject to the limits in section 2013.2 (e) and 2013.2 (e)(2)(C), under the following circumstances:

1. The fleet size has increased, and an additional vehicle is needed to support emergency response and mutual aid.

2. The fleet owner is replacing a designated emergency response vehicle with an ICE vehicle of the same body configuration.

3. The fleet owner has determined that a different body configuration is needed to support mutual aid or emergency response. The fleet owner must also replace the original designated vehicle with a ZEV and remove it from the fleet within 30 days of receiving the ZEV.

(B) To change the designation of emergency response vehicles, the fleet owner must submit the following information to TRUCRS@arb.ca.gov:

1. The TRUCRS ID of the fleet

2. The make, model, weight class, and configuration of the new ICE vehicle to be designated as an emergency response vehicle;

3. The configuration, VIN, and a photograph of the existing ICEV that was replaced with a ZEV;

4. For vehicle purchases made after January 1, 2035, information demonstrating that the fleet owner has considered available ZEVs and compatible mobile fueling.

a. Documentation ... describing the charging or fueling connector and charging or fueling time capability;

b. Documentation from three mobile ZEV fueling providers mobile ZEV fueling providers that do have compatible mobile fueling options... If compatible mobile fueling options are available, the fleet owner must explain why these options would not be practical for the emergency events to which the vehicle must be prepared to respond.

5. A letter to the Executive Officer that has an explanation of the reason for the exemption request.

(3) Approval of designated emergency response vehicles. The Executive Officer will review the information submitted in sections 2013.2 (e)(1) and (2) and notify the fleet owner within 30 days if the designation is approved or if additional information is needed

III. ZEV Purchase Schedule

The ZEV Purchase Schedule establishes that 50 percent of annual MHD purchases must be ZEV starting in 2024, and 100 percent must be ZEV starting in 2027. SMUD recommends extending the 50 percent annual ZEV purchase requirement through 2030 and deferring the 100 percent purchase requirement until January 1, 2031. Given the ZEV market has developed more slowly than anticipated for heavier and more specialized ZEVs, SMUD anticipates that compliance with the ZEV Purchase Schedule will result in a large quantity of exemption applications by 2027, when the 100 percent purchase requirement takes effect. Deferring this requirement until the end of 2030 would allow more time for ZEV technology to evolve, particularly for

configurations that require power takeoff equipment or significant towing or payload. It would also allow greater opportunities for manufacturers to complete additional performance testing and scale up production, for the costs to come down, and for fleet owners to focus near-term procurement efforts on ZEVs that are available and better suited to their needs.

Suggested amendments. SMUD offers the following amendments to illustrate the above recommendations:

- (1) Except as specified in section 2013.1(a)(2), fleet owners must purchase ZEVs, or NZEVs as specified in section 2013(f), for their California fleet in accordance with the following schedule:
- (A) Starting January 1, 2024, 50 percent of the total number of vehicle purchases for the California fleet in each calendar year must be ZEVs; and
 - (B) Starting January 1, ~~2031~~2027, 100 percent of the total number of vehicle purchases for the California fleet in each calendar year must be ZEVs.

IV. NZEV Definition

SMUD continues to appreciate the concept of near-zero-emission vehicle (NZEV) flexibility, as NZEVs have the potential to serve as a key bridge technology and deliver significant emissions reductions while ZEV market offerings continue to improve. However, there are currently no NZEVs offered for sale that meet the ACF definition. SMUD recommends that CARB modify the definition of NZEV to include vehicles equipped with electric Power Take-Off (ePTO) systems that perform stationary work without engaging the diesel engine. These systems are readily available today for a wide range of applications, have years of performance demonstration, and can deliver immediate and significant emissions reductions.

Suggested amendments. SMUD offers the following amendments consistent with the above recommendations:

- “Near-zero-emissions vehicle” or “NZEV” means either:
- (A) A vehicle as defined in title 13, CCR, section 1963(c) and achieves a minimum number of miles, or “all-electric range”, as specified in title 13, CCR, section 1963.2(b)(2); or
 - (B) For traditional utility-specialized vehicles that are configured to perform work that can be done only when the vehicle is stationary, a vehicle that that uses ePTO.

V. ZEV Purchase Exemption

SMUD appreciates that the ZEV Purchase exemption is intended to cover scenarios where “available” ZEVs do not meet the fleet owner’s needs. However, the current exemption structure has several critical gaps with respect to vehicle reliability, performance, and affordability considerations. Furthermore, there is significant ambiguity in CARB’s process for determining whether a ZEV can meet the fleet owner’s needs and, by extension, whether an exemption application will be granted. This ambiguity makes investing in ZEVs more challenging and introduces unnecessary risk and inefficiency into the fleet planning and procurement process. SMUD recommends several modifications to address the gaps and enable better fleet planning.

Define the “core specifications” that serve as the basis for determining whether an “available” ZEV meets the fleet owner’s needs. Currently, fleets may request an exemption if ZEV of needed body configuration is not available from at least one manufacturer. Section 2013.2 (d)(2)(C) defers to the CARB Executive Officer’s “good engineering and business judgment” to determine whether a ZEV configuration is available, and whether another body configuration that can “perform the same primary intended function” can be installed. However, there are no criteria specifying the basis on which the Executive Officer will determine if a ZEV can perform the same “primary intended function.” Moreover, it is unclear whether “primary intended function” captures features like towing or payload on a 60’ aerial – such features are unrelated to the operation of the aerial device but are nonetheless needed to ensure that crews have the tools, equipment, and support functions to perform their work.

For clarity, and to ensure that the ZEV Purchase exemption functions as intended, SMUD recommends defining the set of core specifications that must be satisfied as part of the Executive Officer’s determination. These specifications should cover:

- Payload and towing capability, which are needed to transport tools, equipment, and crews to job sites.
- Four-wheel drive or six-wheel drive, off-road capability, and range, which are needed to ensure that vehicles can reach job sites in remote or rugged terrain and in varying conditions, including extreme weather.
- Auxiliary equipment functions, such as aerial reach height and telescoping movement, which are needed to ensure that crews can access work areas.
- Electrical upfit accessories, such as strobe lights, white lights, and 120V AC export power (for running corded tools and equipment), that tap into the 12V battery for safety purposes or to power equipment like jackhammers.
- Body upfit accessories, such as hot stick boxes, reel pullers, and winches, which are needed to safely transport or maneuver equipment.

While not every purchase will require all features, it is standard practice for fleets to address each of these elements in the specifications released for bid, because each can materially affect whether a vehicle can support the job functions needed.

To substantiate the request, fleet owners could submit previous specifications used for ICE vehicles or a signed attestation explaining why the core feature(s) are necessary.

Provide explicit affordability protections. Currently, neither vehicle cost nor affordability are addressed within any ACF exemption—an omission that SMUD strongly recommends CARB address before this regulation is finalized. On the one hand, SMUD anticipates that, as the ZEV market matures, upfront ZEV costs will come down, and fleet owners may be able to realize the total cost of ownership (TCO) benefits that CARB projects. In fact, Class 2b pickups are now close to price parity with their ICE counterparts and SMUD has successfully deployed numerous ZEV pickups within its fleet.²

However, for heavier and specialized ZEV trucks, SMUD and other utilities continue to face steep price premiums. The table below illustrates the relative prices that SMUD has encountered for ICE vehicles and their ZEV counterparts. With the exception of the cargo van and pickup truck, the price premiums far exceed any potential TCO savings and have not yet substantially decreased.³ Based on current prices and planned vehicle purchases, SMUD estimates that compliance with ACF alone would necessitate a fleet budget increase of approximately 75 percent, from \$9M to \$16M, in a single year. The full cost to transition SMUD’s entire MHD fleet to ZEVs could add a premium exceeding \$100M – approximately equivalent to a 5 percent increase to today’s electric rates.

Equip. Type	ICE	EV	% Increase	Cost Increase
10 Yard Dump Truck	\$ 162,000	\$ 510,000	215%	\$ 348,000
40 Foot Aerial	\$ 163,495	\$ 500,000	206%	\$ 336,505
Box Truck	\$ 80,000	\$ 208,702	161%	\$ 128,702

² As of September, SMUD’s fleet includes 52 ZEV pickup trucks. Other deployed ZEVs include 10 sports utility vehicles, 41 sedans, and one box truck. In 2020, SMUD entered into a partnership to procure multiple class 5 ZEV work trucks, but has not yet received any of those vehicles.

³ CARB’s 2022 [TCO Analysis](#) estimated that, by 2025, a Class 6 bucket truck would be available for \$156,349 as a BEV and \$130,491 as a diesel truck. Based on CARB’s assumptions of upfront, fuel, maintenance, and other costs, the payback period for a ZEV bucket truck that has an upfront price premium of approximately 20 percent would be 11.2 years. For comparison, a 40’ aerial (class 5 bucket truck) today has an upfront price premium of approximately 200 percent - a factor of 10 higher than the assumptions in the TCO analysis, which SMUD anticipates could extend the payback period well beyond the useful life of the vehicle.

Equip. Type	ICE	EV	% Increase	Cost Increase
60 Foot Aerial	\$ 275,000	\$ 620,000	125%	\$ 345,000
Service Truck	\$ 23,000	\$ 260,000	111%	\$ 137,000
3 Yard Dump Truck	\$ 150,000	\$ 290,000	93%	\$ 140,000
Cargo Van	\$ 53,295	\$ 59,840	12%	\$ 6,545
Pickup Truck	\$ 54,220	\$ 60,000	11%	\$ 5,780

As public agencies, POUs like SMUD have limited options to address budget gaps – raising electricity rates, cutting investments and other program spending in our community, or both. Maintaining affordable rates is a priority for SMUD – not only because electricity is also an essential public service, but also to encourage customers to electrify their vehicles, businesses, and homes – and as part of its 2030 Zero Carbon Plan, SMUD has committed to keeping rates at or below the rate inflation. While SMUD remains optimistic that ZEV prices will drop, it is critical that CARB address vehicle cost and affordability considerations to protect ratepayers until they do.

SMUD therefore recommends allowing fleets to request the ZEV Purchase exemption if the price of a ZEV exceeded that of its ICE vehicle counterpart by 30 percent, net any incentives the fleet owner receives. Consistent with the process laid out in the existing ZEV Purchase exemption, fleets would need to provide documentation from at least two manufacturers, final vehicle upfitters, or dealers for both ZEV and ICE vehicles to substantiate the request. CARB would retain the option to survey other manufacturers and vendors that may offer the needed ZEV configuration and specifications; if the Executive Officer identified a ZEV option within the price premium range, then the exemption would be denied.

Address operational constraints related to weight and dimensions. Currently, the ZEV Purchase exemption does not address scenarios in which fleet owners are constrained by weight or dimension limitations. For example, if a vehicle needs to traverse access roads that have strict weight limits, replacing an ICE vehicle with a ZEV in the next weight class may not be a viable option. Additionally, SMUD has numerous distribution substations in the built urban environment where space is limited. Purchasing a ZEV that is physically longer than its ICE counterpart (e.g., if the ZEV body is mounted on a flatbed chassis) could mean that the vehicle no longer can fit inside or maneuver within the substation. SMUD therefore recommends allowing fleets to request the ZEV Purchase exemption when an

available ZEV cannot meet the specific weight or dimension limitations under which the vehicle must operate.

Address manufacturer reliability and warranty support. Currently, fleets cannot qualify for the ZEV purchase exemption if *any* manufacturer sells a ZEV in the needed configuration, without regard to the manufacturer's history or whether the manufacturer has arranged for warranty support and parts distribution within reasonable proximity to the fleet. In SMUD's experience, these elements are critical when making large capital investments, including MHD vehicle purchases, with public funds. Several years ago, SMUD purchased an all-electric tractor that subsequently experienced operational problems. SMUD was unable to obtain warranty support because the manufacturer had gone out of business; as a result, SMUD was forced to auction off the tractor at a loss. This example illustrates the importance both of warranty support and purchasing from manufacturers that are financially stable; without these, capital assets can quickly become liabilities. SMUD therefore recommends that the ZEV Purchase exemption also address scenarios when warranty support is not available within 50 miles of the point of vehicle delivery. This is consistent with existing requirements that SMUD and other utilities establish for vendors.

Allow alternative documentation to substantiate exemption requests. To substantiate exemption requests, fleet owners are required to submit documentation from at least two manufacturers or upfitters stating that the needed ZEV configuration is not available. However, fleet owners cannot compel manufacturers to provide such statements. SMUD recommends that, if manufacturers do not respond within 30 days, fleet owners should be authorized to document and submit their attempts to contact manufacturers and the lack of response.

Suggested amendments. SMUD offers the following suggested amendments to the ZEV Purchase exemption. For simplicity, only new or deleted text is shown.

(2)(A) Fleet owners may submit an exemption application if any of the following criteria are met:

1. An available ZEV configuration does not meet the fleet owner's core specifications, or the manufacturer, authorized dealer, or final upfitter has not provided information to confirm that the ZEV can meet the fleet owner's core specifications. Core specifications include: range, payload, towing capability, four-wheel or six-wheel drive, off-road capability, auxiliary equipment functions, or electrical or body upfit accessories. The fleet owner must also submit a signed attestation or other documentation explaining which of the core specifications are necessary to support the vehicle's duties.
2. An available ZEV exceeds by more than 30 percent the price of an available ICE vehicle of the same configuration that meets the fleet owner's core specifications.
3. An available ZEV configuration would exceed weight or dimension limits that substantially impair the vehicle from completing necessary functions. The fleet owner must also submit a signed attestation or other documentation explaining the weight or dimension limits that cannot be met by the vehicle.
4. An available ZEV configuration conflicts with safety standards that the fleet owner is subject to, if applicable, as prescribed under title 8, CCR, by the California Department of Industrial Relations, Division of Occupational Safety and Health, comparable federal or state health and safety laws where the vehicle operates, or federal highway safety laws.
5. An available ZEV configuration is not offered with a model year 18 months or less from the date the fleet owner submitted the complete exemption request.
6. An "available" ZEV configuration does not have warranty support and parts available at a service center within 50 miles of the point of delivery during the warranty period.

Fleet owners requesting an exemption pursuant to section 2013.2(d)(2)(A)1 must submit documentation from two or more manufacturers, authorized dealers, or final vehicle upfitters that offer for sale a ZEV or NZEV chassis, or a complete ZEV or NZEV, in the same or next higher weight class as the needed ICE vehicle (except for Class 8 vehicles, which must only be in the same weight class). If the fleet owner does not receive a response within 30 days, the fleet owner may document its correspondence attempts with the manufacturer, authorized dealer, or final vehicle upfitter, and submit this in lieu of a manufacturer statement.

VI. ZEV Unavailability List

The ZEV Unavailability List – the “streamlined” version of the ZEV Purchase exemption – has the potential to significantly reduce the administrative burden on

both CARB and fleet owners. However, the current ZEV Unavailability List has extremely limited standards that must be met for a configuration to be deemed “available.” As a result, there are few configurations on the list, and fleet owners have few assurances that any “available” vehicles will have undergone robust testing or performance validation.

To provide greater certainty for fleet owners and to improve the streamlining benefits of the ZEV Unavailability List, SMUD recommends establishing modest additional requirements that must be satisfied before a ZEV configuration is considered available and removed from the list. Specifically, these should include:

- The complete vehicle configuration must be offered for sale from at least two manufacturers or final vehicle upfitters that have placed at least 25 units into service.
- The manufacturers or final vehicle upfitters must publish information on the vehicle’s range at full payload, the vehicle’s range at full towing capacity, and whether the vehicle is compatible with auxiliary equipment.
- For complete vehicles, the manufacturers or final vehicle upfitters must complete weight distribution studies and gradeability tests.
- The manufacturer or, if applicable, the final vehicle upfitter offers warranty support and parts distribution.

Suggested amendments. SMUD offers the following amendments to illustrate the above recommendations. For simplicity, only new or deleted text, not reorganization, is shown.

(1)(B) Vehicle configurations shall be considered “unavailable” until all of the following are met:

1. The complete vehicle configuration is offered for sale from at least two manufacturers or final vehicle upfitters and at least 25 units have been placed into service. Offered for sale does not include vehicles that are solely for demonstration, test, or experimental purposes, or vehicles that are offered as a temporary placeholder that may or may not be offered for sale in the future;
2. If applicable, the manufacturer has certified the ZEV’s powertrain with CARB in accordance with Zero-Emission Powertrain Certification Regulation in tit. 13, CCR, section 1956.8(a)(8) and tit. 17, CCR, section 95663(d);
3. The manufacturer or final vehicle upfitter must complete a weight distribution study and gradeability test;
4. The manufacturer must publish the following information for each complete vehicle configuration available: range at full payload, range at full towing capacity, and compatibility with auxiliary equipment; and
5. The manufacturer and, if applicable, final upfitter has warranty support and parts distribution within California.

VII. Daily Usage Exemption

SMUD understands that the Daily Usage exemption is intended to address scenarios when available ZEVs cannot meet a fleet owner's mileage or energy usage needs. This is particularly important for vehicles that must travel long distances or operate power takeoff equipment to perform work while stationary. However, in the near term, data access barriers will limit the use of this exemption for vehicles with power takeoff equipment. SMUD recommends two revisions to simplify and improve access to this needed exemption.

Until more performance data is available, allow fleets to use fuel equivalency calculations to estimate needed battery size. Section 2013.2 (b)(3) and (b)(4) specify the process that fleet owners must follow to demonstrate that a battery electric vehicle (BEV) cannot meet the energy usage needs of existing fleet vehicles. First, fleet owners must obtain at least 5 days' worth of data from a BEV and an ICE vehicle operating on "similar" assignments. This data is used to determine real-world conversion factors between fuel consumption and kWh used – one while the vehicle is performing work while stationary, one while the vehicle is in transit. These conversion factors are then used to estimate, based on fuel consumption over a 30-day period, the equivalent kWh needs of each ICE vehicle of the same configuration within the fleet.

SMUD appreciates CARB's objective of developing real-world conversion factors based on actual conditions; such factors can enable more accurate comparisons of ICE vehicles and BEVs. However, there is currently very limited public data on BEV specialty vehicle performance that fleet owners could use to compare to their own ICE vehicles and the conditions in which they operate. In some instances, fleet owners may be able to access test vehicles from manufacturers, but availability is neither guaranteed nor on-demand and may not align with the fleet owner's vehicle procurement timelines. The only other option fleet owners have to obtain the necessary data to substantiate the exemption is to purchase the BEV themselves – a result that is counterintuitive to the premise of the exemption.

To ensure fleet owners can access this important exemption and are not punished for lack of data availability, SMUD recommends adding an alternative, through 2035, that allows fleet owners to use fuel equivalency calculations based on heat content to compare available BEVs to ICE vehicles within the fleet. SMUD additionally recommends that CARB maintain a repository to facilitate access to BEV performance data for fleet owners. Once more data is available, SMUD recommends that CARB consider developing standard conversion factors for different regions and climates that could be leveraged within this exemption.

Limit BEV comparison to vehicles of the same configuration and that are performing the same duty cycle. Currently, the Daily Usage exemption requires fleet owners to compare available BEVs to all vehicles of the same configuration within the fleet. SMUD understands the intent is that, if any one ICE vehicle had energy usage or mileage needs that could be replaced by a BEV, the fleet owner

should purchase the BEV and rearrange vehicle assignments as needed. SMUD believes this framework may work for fleets that are largely comprised of transport vehicles like vans, buses, or tractor-trailers. However, even among utility vehicles of the same general configuration, there can be differences in body and electrical accessory upfits based on the specific tools or equipment used by the crew. As a result, vehicles may not be readily reassigned between workgroups. SMUD therefore recommends that only vehicles of the same configuration that are assigned to the same workgroup should be included in the comparison.

Suggested amendments. SMUD offers the following amendments to illustrate the above recommendations.

- (4) [The fleet owner must submit] a daily usage report for a period of at least 30 consecutive workdays from within the last 12 months using telemetry data or other data collection system that tracks daily mileage for all ICE vehicles of the same weight class and body configuration of that are within the same workgroup as the vehicle being replaced ...
- (5) Notwithstanding section 2013.2 (b)(3)-(4), until January 1, 2035, a fleet owner may calculate the equivalent rated energy capacity based on the fuel consumption of ICE vehicles of the needed configuration within the fleet.

VIII. Other changes

Vehicle Additions. Currently, the ZEV Purchase and Daily Usage exemptions are accessible to fleets only when replacing existing vehicles. However, some POUs are expanding the size of their fleets and may need to purchase vehicles that are not available as ZEVs. For example, SMUD is planning to add two additional line crews to support its ability to provide reliable, resilient electricity service. Each line crew requires multiple vehicles – a 40' aerial, line foreman truck, pole cargo, and flatbed service truck – to support its work. However, most of these vehicles are not yet available as ZEVs with the configurations and core specifications used by SMUD. SMUD understands that CARB staff is considering a proposal that allows fleet owners to access exemptions for both vehicle additions and replacements, and SMUD strongly supports its incorporation into the proposed regulations.

Traditional Utility Specialized Vehicles. The proposed definition of specialized utility vehicles includes several elements, including: having a body configuration that is not designed to primarily carry cargo or passengers; is operated greater than 50 percent of the time to maintain reliable public utility services; and is either equipped with power takeoff equipment or 4- or 6-wheel drive. However, these criteria appear to exclude vehicles like service trucks, foreman trucks, and flatbed trucks that are critical to maintaining reliable public utility service by transporting needed tools and equipment, such as backyard derricks, to jobs. For purposes of this definition, and to align with AB 1594's intent of supporting utilities' ability to maintain reliable service and respond to major events, SMUD recommends clarifying that "cargo" does not

refer to tools and equipment needed to support crew operations, and that vehicles must be equipped either with power takeoff equipment, 4-or 6-wheel drive, or specific payload or towing needs. These revisions would simply allow POUs to access the ZEV Purchase and Daily Usage exemption processes if any vehicle needed to support utility operations must be replaced ahead of CARB's useful life threshold and would not automatically confer any exemptions onto these vehicles.

Separate exemption process to address unique scenarios captured by proposed exemptions. SMUD requests that CARB reconsider the 2022 rulemaking request for a separate exemption process to address unforeseen circumstances that are outside the fleet's control but are not contemplated by the regulation. While CARB's suite of proposed exemptions is intended to capture many likely scenarios, the restrictive eligibility requirements are based on simplified assumptions that do not fully address fleet-specific considerations and needs. Moreover, given the continued uncertainties in ZEV market trajectories and potential operational impacts during the ZEV transition, SMUD believes it is prudent to provide a path for public fleets to address unforeseen scenarios with CARB.

IX. Conclusion

In conclusion, SMUD appreciates CARB staff's efforts to understand the barriers and challenges facing public agencies, but further amendments are needed to meaningfully address these issues. SMUD looks forward to continued collaboration with CARB toward solutions that provide reasonable paths to compliance while continuing to advance the ZEV transition and support the state's broader electrification and clean energy goals.

/s/

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