Pacific Gas and Electric Company

Fariya Ali (415) 635-7113
State Agency Relations fariya.ali@pge.com

October 29, 2021

Tony Brasil
Branch Chief, Transportation and Clean Technology Branch
Mobile Source Control Division
California Air Resources Board
1001 "I" Street, Sacramento, CA 95814

RE: Pacific Gas and Electric Comments on the Advanced Clean Fleets Informal Draft Regulation

Pacific Gas and Electric Company (PG&E) appreciates this opportunity to comment in response to the California Air Resources Board's (CARB) release of informal draft regulatory text of the proposed Advanced Clean Fleets Regulation (ACF), as well as the public workshops held on September 30, 2021 and October 13, 2021. As an electric and natural gas investor-owned utility (IOU), PG&E is impacted by this draft rule as both the owner of a large fleet of vehicles that would be subject to the ACF requirements, and as a key enabler of the transition to cleaner technologies by our customers through deployment of infrastructure, rates and education programs. This perspective is reflected in the comments below which have been divided into the following sections:

- Overall Support for TE and the Regulation's Goals
- Infrastructure Support
- Customer Coordination
- Draft ACF Regulatory Requirements
    - Exemptions
    - ZEV Phase-In Schedule and Cost Assumptions
    - Fleet Composition
    - Recordkeeping/Retention
- Alignment with SB 1383 and SLCP Goals

Overall support for TE and the goals of the regulation

Increasing transportation electrification (TE) lies at the heart of the State's efforts to reduce Greenhouse Gas (GHG) emissions and mitigate the impacts of climate change as well as

improve local air quality. PG&E strongly supports State policies and CARB regulations that further this effort and is proud to aid customers in switching to electric transportation through its many electric vehicle (EV) programs and offerings. The ACF rule offers a significant opportunity to reduce both GHG and air pollutant emissions from the transportation sector and benefit the communities most adversely impacted. It may be CARB's most impactful transportation rule which is why it is essential that it is designed thoughtfully and collaboratively. PG&E supports the overall intent of the ACF rule and its specific goals to increase zero-emission vehicles in fleets and is ready to support customers with the necessary charging infrastructure to electrify in compliance with the rule. Given the scope of the rule and its impact to PG&E's own fleet and the grid, PG&E strongly encourages robust dialogue and between CARB staff and fleet owners, utilities, and other state agencies in order to design an effective and sustainable rule. PG&E offers additional specific comments and recommendations on the draft rule language in the sections below.

Infrastructure Support

The broad scope of the ACF is what enables it to have a significant impact on reducing emissions in the transportation sector, but it also presents a complex infrastructure challenge that will require close coordination between various state agencies and the utilities and between the utilities and fleet owners. In summary, PG&E recommends the following regarding infrastructure needs as part of the ACF:

- Additional working groups held with fleet owners and with the utilities
- Coordination with the California Energy Commission (CEC) and the California Public Utilities Commission (CPUC) on EV forecasts used for grid planning purposes
- Support for proactive capacity upgrades by the utilities

According to CARB staff, there are currently ~2 million vehicles in the Class 2b to Class 8 tractors categories that would be affected by this regulation.[1] Even if there is no additional growth in vehicle population, the necessary infrastructure and grid capacity to support those soon-to-be electrified fleets is significant. Additionally, the lower efficiency and higher vehicle miles traveled of this medium-and-heavy duty vehicle sector translate to significantly higher demand per vehicle than their Class 1-2a counterparts. PG&E is ready and eager to support the necessary infrastructure deployment, but it is only one piece in the infrastructure puzzle.

There needs to be intentional coordination between CARB who oversees the zero-emission vehicle supply and demand, the CEC who oversees the planning for energy demand from those vehicles, and the CPUC who oversees the utilities' investment in grid capacity and infrastructure installment to support those vehicles. While CARB has hosted one workshop and is planning a series of four meetings with the other state agencies regarding the infrastructure needed to support the ACF, prior workshops have been structured as a presentation of information and efforts by the state agencies and not a dialogue with stakeholders about the nuances and challenges of infrastructure and fleet planning. PG&E recommends that CARB hold additional working groups to hear from fleet owners about their TE planning process, what specific challenges they're facing regarding ZEVs and infrastructure, and what

[1] CARB Advanced Clean Fleets Regulation Workshop, September 9, 2021, Slide 10

information they have and can share along the TE process. Similarly, PG&E recommends CARB, in collaboration with the CEC and CPUC, hold working groups with the utilities to understand the customer interconnection process, the grid capacity planning process with the CEC and CPUC, and the ability of utilities to support customers through duty to serve and EV programs.

Regarding grid capacity planning specifically, PG&E recommends that CARB work with the CPUC and the CEC to align on the electric vehicle and associated load forecasts used in state planning processes such as the Integrated Energy Policy Report (IEPR) and Integrated Resources Plan (IRP). There is currently a misalignment between the number of electric vehicles CARB anticipates the grid will serve in support of the ACF and the amount of EV load that the utilities can plan for through the CEC and CPUC's regulatory processes.

For example, the CEC's IEPR, which is used to forecast energy needs for the State and recommend policies to ensure safety and reliability, does not currently include an EV forecast that accounts for any of the aggressive vehicle goals laid out in Executive Order N-79-20, CARB's Mobile Source Strategy (MSS), or the ACF. The table below displays the difference between the zero-emission vehicle forecast for the state for the year 2030 included in the 2020 IEPR and in the 2020 MSS.

2030 ZEV Populations in IEPR 2020 and MSS 2020

	IEPR 2020	MSS 2020
Light-duty Vehicles	3,321,138	7,918,620
Medium-and-heavy-duty Vehicles	79,742	212,675

Therefore, the CEC may be significantly under-forecasting future energy demand for the State and because the IEPR is used to inform other grid investment and planning processes for the utilities, this under-forecasting could impact the utilities' ability to plan appropriately for upcoming EV load. PG&E believes that the zero-emission vehicle forecast used for CARB's Mobile Source Strategy would be an appropriate forecast to use across CARB, the CEC, and the CPUC as a "policy scenario" at the very least and has made this suggestion in the respective CEC and CPUC proceedings.

Ambitious transportation electrification targets like those included in the ACF rule will require "Proactive Capacity Upgrades" to provide capacity for EV charging in a manner that aligns with the timeline of state goals. Proactive Capacity Upgrades are recoverable capacity investments informed by data-analytics that forecast where EV adoption is likely to occur rather than by existing applications for service. In other words, PG&E identifies equipment (e.g., substations, feeders) upstream of where EV adoption is expected and completes upgrades in advance of when load materializes. Most fleets will likely charge at their existing depots or business locations and will generally have high peak demands that may be more likely to trigger time intensive upgrades (e.g., substation transformer bank replacement). Considering the long lead time for projects on certain grid segments, proactive grid planning will be critical. Alignment between regulators regarding the IEPR forecast and a transparent planning process fostered by the ACF may be helpful as PG&E pursues more proactive planning and execution.

Customer Coordination

In addition to statewide coordination on infrastructure and grid planning, successful implementation of the ACF will require a new level of close coordination between the utility and fleet owners. As mentioned above, PG&E is ready and eager to support the infrastructure deployment for these fleet customers to meet their compliance requirements. Given the large number of customers subject to compliance in the ACF rule and the large upgrades likely needed to interconnect the substantial loads of fleets, there needs to be proactive communication by the fleet owner (customer) regarding their near-term, site-specific interconnection needs as well as their long-term fleet electrification plans.

To effectively plan for customers' near-term (<2 years) and long-term TE infrastructure and load, customers should contact their utility a minimum of six months in advance of a desired project start date, but more lead time may be necessary depending on the complexity of each project. The utility needs the following information, at a minimum, from fleet owners to meet their near-term deployment needs:

- Type(s) of vehicles
- Number of vehicles by fuel type (especially battery-electric vehicles (BEVs))
- Levels of charging anticipated
- Locations (where vehicles park)
- Location(s) of expected initial infrastructure deployment (<2 years)

Information about the customer's fleet composition and plans for near-term infrastructure deployment is critical to ensure the utility can help customers meet the zero-emission fleet requirements on the timeline laid out in the ACF. Clear communication between customers and the utilities will be essential throughout the process, including on the need for any utility-side upgrades. If the timeline for such infrastructure would lead to a customer becoming out of compliance with the ACF rule, this information could, for example, be accessed through avenues such as PG&E's customer portal and provided to CARB by the customer. The specifics of this process should be thoughtfully determined in the rule through multiple discussions on the utility processes and the fleet owner's potential need.

In addition to providing information about their 2-year near-term plans, PG&E requests that the fleet owners share information about their long-term electrification plans so that the utility can properly prepare for the upcoming grid capacity needs. As mentioned earlier, grid capacity upgrades may be time intensive and so the earlier PG&E is aware of the capacity need, the better it can streamline its grid upgrade planning to meet the need where and when the TE load shows up. In addition to the minimum information needed that is listed above, it would be valuable to have as much detailed information about the fleet owner's TE plans, updated at a regular cadence, as they are willing and it is appropriate to share. Some stakeholders have also raised the idea of a data portal where fleets can share their future electrification plans confidentially with utilities so that the utility can effectively plan in advance for capacity and interconnection. PG&E welcomes additional discussion on how such a portal could be developed and utilized as

it would enable the utility to properly plan for upcoming interconnections and any grid capacity need.

Draft ACF Regulatory Requirements

As currently drafted, PG&E's utility fleet would be subject to the High Priority and Federal Fleets requirements. PG&E's comments on some of the specific requirements are provided below:

Exemptions

PG&E supports the ACF's ambitious transition plan for ZEVs but appreciates CARB staff's inclusion of avenues to account for situations when meeting the ZEV requirements by the required dates may not be possible. When considering fleets that are used for emergency response, including utilities, the availability and quick refueling of fleets is critical. For PG&E, emergencies can occur anywhere in its service territory, including remote locations and in multiple regions at the same time. As such, the requirement that 75% of the vehicle body type being requested for an emergency exemption must already be a ZEV is not practical and recommends it be removed, especially in the early years of the regulation when only limited ZEV options will be available. For example, Ford is only planning to be able to produce 80,000 F150 Lightning Trucks per year by 2024.[2] The 75% requirement is especially limiting if the "vehicle body type" is narrowly defined.

The limitation that only 25% of a fleet can utilize the emergency exemption also seems arbitrary and does not reflect that some emergencies will require greater mobilization than others and recommends removing this requirement or basing it on each fleet's actual emergency needs. There should also not be a 30-day limit on the duration for out-of-state vehicles providing support for a declared emergency to remain within the state – their use may need to go beyond 30 days and there is no reason to suppose they would stay in state longer than necessary as they are also routinely deployed to support other areas or are needed back in their home locations. While not directly precluded by the rule, PG&E notes that the ability to use compressed natural gas (CNG) Near-Zero Emission Vehicles (NZEVs) may be a better solution in these situations than a ZEV. For example, PG&E can fill its CNG vehicles in remote locations by bringing the fuel using the LNG/CNG fleet to quickly refuel emergency response vehicles on-location. Waiting for a BEV to charge may not be an option.

PG&E also requests additional clarification from CARB staff on how the regulation will acknowledge manufacturer delays and/or supply chain issues that are beyond the fleet owners' control. COVID-19 supply chain shortages are currently impacting even the deliverability of internal combustion engines (ICE) and battery shortages are leading to even longer delays for EVs. If a fleet owner has ordered a ZEV but due to supply side delays will not receive the vehicle for a longer period of time than originally anticipated, there should be options outlined to provide flexibility for the fleet owner if their operational needs require a new vehicle sooner than the ZEV can be delivered.

[2] See https://electrek.co/2021/08/23/ford-doubles-electric-f-150-lightning-production-plan-and-its-still-not-enough/

PG&E supports the recommendation from several stakeholders for a more streamlined approach to exemptions by establishing an advisory group to regularly evaluate broad commercial availability of different vehicle types, which fleet owners can cite for exemption requests. Such an approach would significantly reduce the administrative burden on CARB staff, fleet owners and OEMS by avoiding the need to provide bid information on an individual vehicle basis. The ability to seek exemptions by category/vehicle type or duty cycle (while still supplying information for individual units) would also reduce the number of discrete exemption requests that need to be generated and reviewed.

Phase-In Schedule and Cost Assumptions

As ZEV penetration increases over time, the ability to charge vehicles in remote areas will remain a challenge and it seems plausible that support vehicles such as "battery trailers" will be needed to extend vehicle range, operational hours and provide power for auxiliary equipment. Completely new vehicle types that deliver power out in the field may become part of the new work mix. Such needed vehicles/equipment should count in the phase-in percentage milestones and costs for these items should also be factored into the cost analysis. Unless anticipated by manufacturers, costs for modifying vehicles and installing controls for using "trailer" vs "vehicle" battery power may also be needed. New dedicated vehicles for delivering/ exchanging/ picking up battery trailers or power pods are an additional possibility. Work practices may change so that heavy duty vehicles stay at the work location and other light duty vehicles are used for transportation to/from job site and home base (these light duty vehicles would be a new addition and cost to the fleet). All of these new additions would need charging station access at the home base (or elsewhere) and result in more charging stations being required (plus the associated cost and additional space requirements) and are not included in the current Total Cost of Ownership (TCO) Discussion Document.

In terms of the vehicle cost assumptions, PG&E recommends modifications to the TCO Discussion Document to reflect the fact that many of the costs currently quoted seem to be based on the most basic version of a vehicle which would not meet the needs of many fleets. For example, PG&E was quoted a price of $179,000 for just a bare electric chassis for a Class 5 Walk-in Van to be delivered in 2022. Even adjusting for future inflation to compare to a bare chassis for a diesel equivalent (at $70,000), this still represents a price premium of $109,000, which is much greater than the premium shown in the CARB's analysis and does not account for the additional modifications needed for a fully functional vehicle. The CARB TCO analysis also appears to assume 16,000 miles per year for a Class 5 Walk-in Van which may be reflective of package delivery service fleets but those are not the only fleets that use such vehicles. PG&E currently owns 98 such vans with a fleet wide average of only 4,450 miles per year. This significantly changes the TCO calculation and CARB cost assumptions should include different scenarios for vehicle mile usage (such as high, medium, low) to reflect the wide variety across different fleets.

Other areas for improvement to the TCO Discussion Document include inclusion of new/higher fuel taxes and registration fees for ZEVs over time to make up the revenue necessary for ongoing road construction and maintenance as fossil-fueled vehicles are phased-out. PG&E

also recommends CARB staff reconsider the 1:1 replacement assumption used for their analysis (i.e. that one fossil vehicle can be replaced by just one ZEV). Especially for cargo hauling vehicles, the increased space needed for batteries will reduce their load carrying capacity and more vehicles will be needed to accomplish the same task.

Fleet Composition

PG&E requests the CARB provide additional, written clarification on what vehicles should or should not be counted in a company's fleet calculations. Staff has provided some helpful verbal explanations, but the regulatory text is still ambiguous and subject to different interpretations. For example, additional clarification on whether contractor fleets that are doing work on behalf of a company must be counted as part of the hiring company's fleet or if the contractor company is still responsible for their own fleet's compliance and the hiring company just needs to ensure their contractor provides proof of compliance with ACF in order to hire them.

Recordkeeping/Retention

In the current draft rule language, there are various definitions being referred to for emergency vehicles. For example, the emergency response exemption (95692.6(c)) refers to "vehicles to provide emergency response in supporting electricity, natural gas, water, or wastewater services". However, the recordkeeping section for emergency operation documentation refers to that section but only requires records for "vehicles dispatched by a government agency." There is also reference to CVC section 165 for defining emergency vehicles in the general exemption section of the regulation. PG&E recommends consistency on how the regulation is going to define emergency vehicles for all sections. PG&E also recommends that the retention period for relevant records be reduced from 8 years to 5 years given the pace of the required transition.

ACF Alignment with SB 1383 and other State Goals

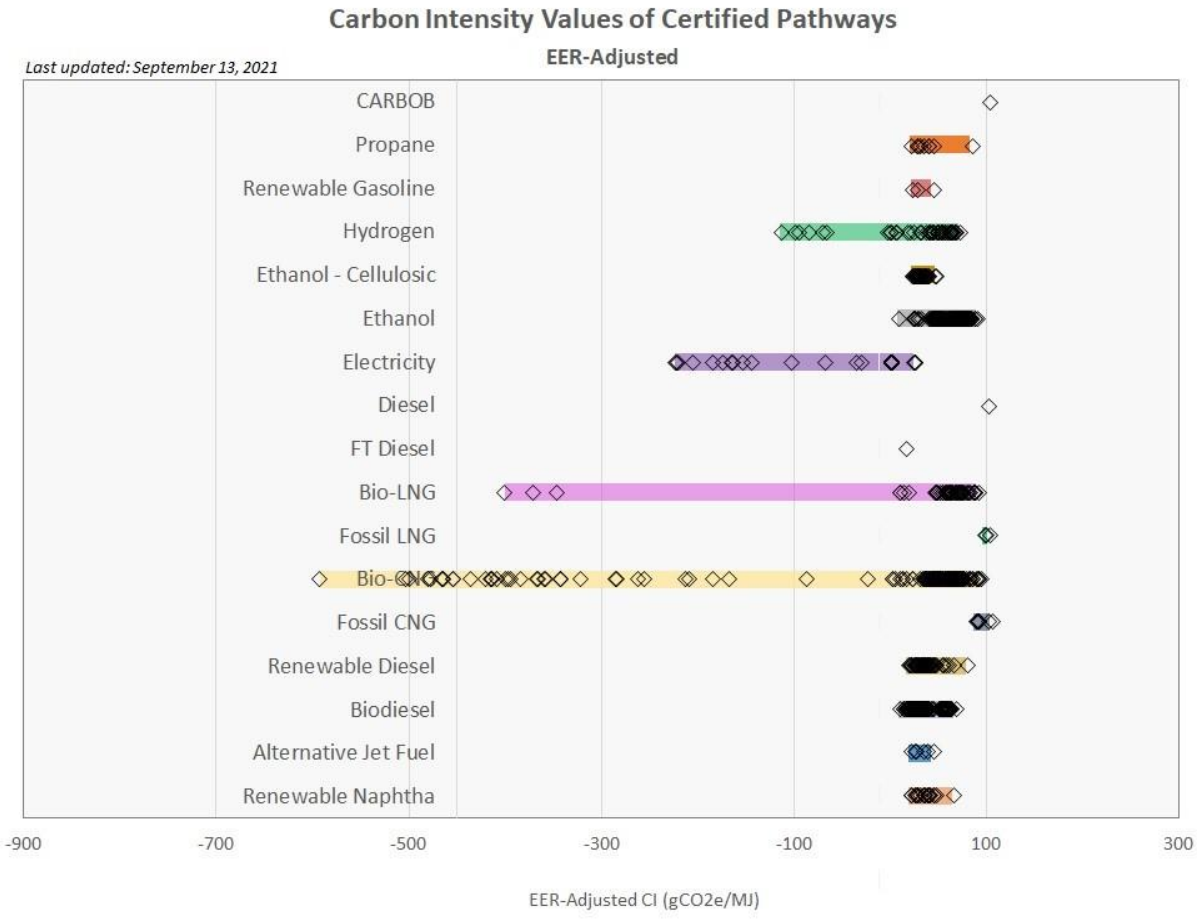
PG&E supports the focus on zero emission technologies (both battery electric and fuel cell) wherever possible but also supports flexibility in regulation to allow for alternative cleaner technologies such as renewable natural gas (RNG) in low-NOx CNG vehicles where there are limited hydrogen or BEV options on the market. This is especially critical for heavy duty trucks that need to make investments in the near term on vehicles and infrastructure which is not yet available as zero-emission. It can be more advantageous from an environmental and local air quality perspective, for those trucks to switch to RNG/CNG now than re-invest in diesel until battery-electric and/or hydrogen fuel cell technology and fueling station infrastructure is readily available for heavy-duty trucks.

Senate Bill (SB) 1383[3] in part encouraged the reduction in methane emissions from livestock and the interconnection of RNG to utilities. The best use for RNG today is to displace fuels such as diesel in the transportation sector as incentivized by the Low Carbon Fuel Standard (LCFS) credit mechanism. Renewable low-NOx CNG vehicles can utilize the captured fugitive

[3] SB 1383 https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB1383

methane emissions from agricultural waste, wastewater treatment, landfills, and biomass. The ACF should continue to encourage the use of RNG in low-NOx CNG vehicles by including them in the ACF program when there is no existing ZEV or PHEV alternative. According to CARB data, RNG use in trucks, buses and other vehicles grew 25% across the state from 2019 to 2020 and RNG use is up more than 170% in the past five years.[4] Depending on the feedstock, RNG can have the lowest carbon intensity value of all certified pathways as shown in Figure 1 below. For example, California fleets fueled with in-state RNG (bio-CNG) were carbon-negative for 2020, based on an annual average carbon intensity score of -5.845 gCO2e/MJ, the lowest of any motor fuel in use including renewable electricity.[5]

Figure 1 LCFS Pathway Certified Carbon Intensities[6]



[4] Natural gas figures from CARB's Local Carbon Fuel Standard Reporting Tool Quarterly Summary at https://ww3.arb.ca.gov/fuels/lcfs/lrtqsummaries.htm. Greenhouse gas emissions and associated carbon dioxide equivalent (CO2e) metric tons calculated from data reported under CARB's Low Carbon Fuel Standard program using RNG carbon intensity values of-5.845 for bio-CNG and 54.94 for bio-LNG based on 2020 annual averages and then adjusted for energy efficiency rating (EER).

[5] See NGV RNG Driving Down (ngvamerica.org)

[6] See LCFS Pathway Certified Carbon Intensities | California Air Resources Board

With RNG more established and growing rapidly, the availability of CNG vehicles is attractive to many fleets and is driving substantial interest and growth. If provided the opportunity within the ACF, RNG can continue to enable the near-term (and medium-term where ZEVs are not available) decarbonization of transportation going forward, as seen with the adoption of CNG fleets by companies such as Amazon[7], UPS[8], Waste Management[9], and Republic Services[10].

PG&E suggests that the ACF consider the carbon intensity as a factor in the regulation and definition of NZEVs. In the current ACF regulation, "Near-zero-emissions vehicle" or "NZEV" means a vehicle as defined in title 13, CCR section 1963(c)(16). It is a vehicle that is capable of operating like a ZEV for a minimum number of miles. [11] Instead of a regulation based on specific technologies, the regulation design should be based on attributes that drive toward the end goal of emission reductions. This could allow for more innovation in technologies and help the transportation sector achieve the state's goals quicker.

Conclusion

PG&E reiterates its support of transitioning California's fleets to clean fuel technologies and looks forward to continued engagement on the ACF regulation to ensure a coordinated, efficient and technologically feasible pathway for our customers and our own fleet. Thank you for the opportunity to contribute to the process and please let me know if you have any questions on our comments.

Sincerely,

Fariya Ali, Air & Climate Policy Manager

---

[7] "Amazon has ordered more than 700 CNG class 6 and class 8 trucks so far….In 2019, United Parcel Service Inc (UPS.N) announced plans to buy more than 6,000 natural gas-powered trucks over three years and step up purchases of renewable natural gas (RNG) as part of a $450 million investment to reduce the environmental impact of its 123,000-vehicle fleet." Sustainable Transportation (aboutamazon.com); EXCLUSIVE Amazon orders hundreds of trucks that run on natural gas | Reuters; Amazon US orders hundreds of CNG trucks | Bioenergy Insight Magazine (bioenergy-news.com)

[8] UPS Environmental Innovations

[9] Smart Fleet Solutions - Natural Gas Powered Trucks | Waste Management (wm.com)

[10] "[Republic Services has] long been a leader in alternative fuel vehicles, beginning with Compressed Natural Gas (CNG) as a bridge until electric vehicles are commercially viable. In 2020, we continued to replace aging diesel trucks with more sustainable alternatives, adding 159 natural gas-powered collection trucks. Today, our natural gas-powered trucks number more than 3,300 vehicles, or 21 percent of our total fleet. CNG collection trucks produce far fewer carbon emissions than their diesel counterparts. The use of Renewable Natural Gas (RNG) in these vehicles makes them even more environmentally responsible. In 2020, we increased our use of RNG to fuel nearly 100 percent of our natural gas trucks." 2020-Republic-Services-Sustainability-Report.pdf (republicservices.com)

[11] ACF Proposed Draft Regulation Language - High Priority and Federal Fleets (ca.gov) Page 7