

May 17, 2021

Liane Randolph, Chair
California Air Resource Board
1001 I Street
Sacramento, CA 95814

RE: Clean Miles Standard

Dear Chair Randolph and Members of the Board:

Thank you for your efforts in developing the proposed Clean Miles Standard regulation. It is a thoughtful carefully-crafted proposal for California’s first-of-its-kind regulation of tailpipe emissions from ride hailing services. NextGen California has appreciated the opportunity to comment in several workshops and staff meetings over the course of more than two years, and we commend CARB staff for the process it has engaged in and responses to feedback they have provided.

We have joined our colleagues from Union of Concerned Scientists and other organizations in commenting in support of this proposed rule, and we write here to further elaborate on aspects of the proposal that are mentioned briefly in that letter. Specifically, we urge the Board to direct staff to revise the early year eVMT and GHG intensity targets set in the early years of implementation to better reflect ZEV market conditions, likely gasoline prices, and, most importantly, the companies’ significant ability to assist their drivers in obtaining access to zero emission vehicles and to implement other GHG-reducing measures.

We are particularly concerned that the regulated companies be given sufficient incentive to take meaningful action as soon as possible, and to play an active role in helping their drivers gain access to zero-emission vehicles, rather than simply waiting for employees to purchase these vehicles with the help of state and federal incentives and taking credit for emissions reductions they played no part in helping to bring about.

The Board has a duty to ensure that the implementation of this rule has “minimal negative impact on low-income and moderate-income drivers.”¹ It would be a mistake to assume that drivers can be protected by providing the

¹ Public Utilities Code, Section 5450(d)(1).

company with the opportunity to claim compliance or over-compliance while doing virtually nothing to aid their drivers in taking the actions that lead to compliance. On the contrary, the Board’s best opportunity to ensure the companies take meaningful steps to assist their drivers in achieving needed emissions reductions is to set aggressive and achievable early-year compliance targets.

The proposed rule sets GHG and eVMT targets that hew closely to Business as Usual projections, which would allow ride hailing fleets’ environmental performance to significantly lag behind California’s general light duty vehicle fleet until approximately 2026. For example, in 2018, 1.2% of California vehicles were ZEVs.

Cumulative ZEV sales have doubled since that time, and that number will continue to grow substantially by 2023.² But “in the first compliance year of 2023, less than 0.1% of TNC vehicles are expected to be switched to ZEVs.”³

Staff developed this target in part by adopting a highly conservative methodology that (1) assumes the ride hailing companies take no affirmative steps to aid their drivers in obtaining access to ZEVs, and (2) that high barriers to ZEV adoption exist for Californians driving on these platforms. For example, the relative cost of fueling a ZEV compared to a gasoline powered vehicle is a significant factor in determining adoption. But in modeling this factor, staff has assumed gasoline prices will drop precipitously from current levels in 2023, to levels not seen in California since 2005,⁴ and maintain that low price until 2030. (See table 3, reproduced from the proposal, page 30, below). Staff has also not considered that the companies may help drivers to decrease the fuel costs and charging barriers associated with switching to electric vehicles by providing free or discounted charging credits or making other incentives available to drivers considering switching to ZEVs.

Table 3. Gasoline prices assumed in model

Year	2023	2024	2025	2026	2027	2028	2029	2030
Gasoline Price (\$/gal)	2.66	2.62	2.63	2.63	2.63	2.62	2.62	2.65

² https://www.veloz.org/wp-content/uploads/2021/05/Q1_2021_Dashboard_PEV_Sales_veloz-1.pdf

³ “ Proposed Clean Miles Standard Regulation; Staff Report: Initial Statement of Reasons,” p. 35. <https://ww3.arb.ca.gov/regact/2021/cleanmilesstandard/isor.pdf>

⁴ California Average Weekly Retail Gasoline Prices February 1996 Through Current - (Not Adjusted For Inflation), https://ww2.energy.ca.gov/almanac/transportation_data/gasoline/retail_gasoline_prices2_cms.html

The proposed early-year GHG targets are similarly too slow to ramp up. In 2018, the statewide average carbon intensity of the general vehicle fleet was 203 g/pVMT. But, the proposed rule does not require ride hailing fleets to catch up to where the rest of the state was in 2018 until 2027 – halfway through the full compliance period. Ride hailing vehicles are generally newer and more efficient than the rest of the fleet, and the companies have substantial monetary resources and responsibility for having induced significant growth in emissions through their business model to date. The companies therefore should be required to use their considerable resources to achieve parity with the general vehicle fleet much sooner in the compliance period, and quickly ramp down pVMT thereafter.

The danger of setting early year GHG per pVMT standards too high is exacerbated by the draft rule’s proposal to allow companies to bank “overcompliance credits”⁵ from those early years. Natural vehicle fleet turnover, with the help of the state’s world-leading efforts to promote the growth of ZEVs, will likely be more than sufficient to allow the companies to claim “overcompliance” in these years, even without the companies’ taking significant action to help their drivers achieve the emissions reductions the companies will take credit for. If these “overcompliance credits” are banked against an overly lax target in the early years, they will undermine the effectiveness of the more aggressive targets in later years. This 3-year banking option is especially concerning in light of the brief 8-year compliance window encompassed by the rule. Companies may bank pre-2027 credit through 2029, leaving only one year in which they face a standard that both achieves a significant environmental outcome and that they have to actually meet in that year: 2030, which is the final year of implementation, and 12 years after SB 1014 was passed creating the framework for this rule.

As we wrote in our January 2020 comments, attached, “TNCs can achieve more rapid reductions in per-passenger-mile emissions than individual vehicle owners/drivers in part because they have the ability to adopt innovative approaches to increasing vehicle occupancy, incentivizing improved vehicle efficiency and ZEV adoption, and reducing deadhead miles among many drivers simultaneously. According to the base year gCO₂ per PMT Sensitivity Analysis by CARB, carbon emissions per passenger-mile travelled from TNCs is very sensitive to both occupancy and deadheading vehicle miles traveled. For example, a 0.1% increase in occupancy can reduce 37.3gCO₂ per passenger mile traveled. A 0.1% decrease in deadheading VMT can decrease 50gCO₂ per

⁵Ibid., p. 55.

PMT.⁶ Note that these figures do not reflect the impact of increase in zero emission vehicle adoption, improvement in fuel efficiency, and changes in speed distribution, all of which can further reduce emissions in conjunction with these measures. TNCs have the ability to rapidly improve emissions performance, and CARB should provide an appropriately ambitious standard in 2023, and rapidly move this standard towards zero emissions sector-wide as rapidly as possible, to adequately encourage them to explore and maximize these and other innovative options.”

We repeat this request here, and urge the Board to direct staff to reconsider the proposed early-year targets in this proposed regulation.

Sincerely,

David Weiskopf
Senior Policy Advisor, NextGen California

⁶ 2018 CMS Base-year Emissions Inventory Report, https://ww2.arb.ca.gov/sites/default/files/2019-12/SB%201014%20-%20Base%20year%20Emissions%20Inventory_December_2019.pdf.

Attachment

January 15, 2019

Mary Nichols, Chair
California Air Resource Board
1001 I Street
Sacramento, CA 95814

RE: Clean Miles Standard

Dear Chair Nichols and Members of the Board:

Thank you for this opportunity to offer constructive input on the development of California's groundbreaking new Clean Miles Standard. California faces difficult headwinds in taking on the growing emissions from the transportation sector, but finding effective solutions to decarbonize transportation will be critical to achieving our legislatively-required 40 percent reduction in greenhouse gas emissions by 2030 and our statewide goal of achieving carbon neutrality no later than 2045.

As more and more Californians use ride-hailing services and transportation network companies (TNCs), the state has a unique opportunity to help shape the growth of this transportation mode in a manner that will be consistent with our need to rapidly cut tailpipe pollution, reduce congestion, and deploy more zero-emission vehicles.

Senate Bill 1014 (Skinner, 2018)¹ directs CARB to establish a baseline for emissions of GHG for vehicles used by TNCs on a per-passenger-mile basis, and to develop a regulatory framework to be implemented by the Public Utilities Commission that sets annual binding greenhouse gas emissions standards for TNC rides on a per-passenger mile basis beginning in 2023 and continuing thereafter, and that promotes the adoption of zero-emission vehicles for rides take using these services.

Having substantially completed the 2018 baseline study, we urge CARB to begin developing a framework for the standard that evaluates TNC ride emissions to a level below that of the California general fleet average per

¹ Codified in Section 44274.4 of the California Health and Safety Code, and Sections 5431 and 5450 of the California Public Utilities Code, https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB1014.

passenger mile by 2023 and approaches zero grams per mile as soon as 2030, and that promotes the rapid adoption of pooled rides and zero emission vehicles for TNC rides.

1. The initial emission target should bring TNC rides into alignment with or lower than the equivalent general California fleet performance in 2023.

TNC companies have grown rapidly in recent years, and have become a growing part of California’s transportation system, particularly in urban areas. According to CARB’s base year analysis, Greenhouse gas emissions per-passenger-mile traveled by TNC vehicles are approximately 50 percent higher than the California fleet average.² But this number likely understates the statewide emissions impacts of the growth of TNCs and how rides taken on these platforms are displacing active transportation and public transportation trips, or enabling trips that might otherwise have been foregone.

Public transit ridership has been flat or declining for several years, due to multiple factors, including the rise of TNCs.³ As TNCs continue to grow in popularity, one of the more controversial issues surrounding ride-hailing is whether these services can support, rather than reduce, transit use by increasing first and last mile access to transit. The UC Davis Institute of Transportation Studies has conducted several studies with representative data from major cities across America on ride-hailing and its impact on travel decisions. Research as of fall 2017 suggested the average net reduction in transit use of 6 percent in major Americans cities, with a 9 percent reduction in bus and light rail services.⁴ While the amount of transit ridership reduction attributable to TNC growth is difficult to quantify, any shift of trips away from public transit and to passenger cars creates additional pollution and congestion, especially in urban centers.

But while the rapid growth of TNCs increases transportation emissions, these companies are also uniquely positioned to adopt measures that will allow them to rapidly reduce emissions, thanks to their current fleet

² CARB estimates that the 2018 TNC vehicle fleet emitted 301g CO₂/PMT versus Statewide passenger vehicle fleet average of 203gCO₂/PMT. See page 42,

https://ww2.arb.ca.gov/sites/default/files/2019-12/SB%201014%20-%20Base%20year%20Emissions%20Inventory_D ecember_2019.pdf.

³ “Understanding the Recent Transit Ridership Decline in Major US Cities: Service Cuts or 2 Emerging Modes?” <https://usa.streetsblog.org/wp-content/uploads/sites/5/2019/01/19-04931-Transit-Trends.pdf>

⁴ “Disruptive Transportation: The Adoption, Utilization, and Impacts of Ride-Hailing in the United States.” <https://steps.ucdavis.edu/new-research-ride-hailing-impacts-travel-behavior/>

makeup, the opportunity for ongoing rapid fleet turnover, and incentives the companies may adopt to promote pooled rides and rides in electric vehicles. On average, TNC vehicles are newer and have better in-use fuel efficiency than the general California fleet.⁵ TNCs have also begun pursuing pilots that demonstrate an ability and interest in rapidly electrifying rides on their platforms.⁶ CARB should therefore consider adopting an 2023 emissions target that reflects the opportunity for rapid change in this sector, as well as the fact that this segment of vehicle trips is currently underperforming other modes of passenger travel in the state.

TNCs can achieve more rapid reductions in per-passenger-mile emissions than individual vehicle owners/drivers in part because they have the ability to adopt innovative approaches to increasing vehicle occupancy, incentivizing improved vehicle efficiency and ZEV adoption, and reducing deadhead miles among many drivers simultaneously. According to the base year gCO₂ per PMT Sensitivity Analysis by CARB, carbon emissions per passenger-mile travelled from TNCs is very sensitive to both occupancy and deadheading vehicle miles traveled. For example, a 0.1% increase in occupancy can reduce 37.3gCO₂ per passenger mile traveled. A 0.1% decrease in deadheading VMT can decrease 50gCO₂ per PMT.⁷ Note that these figures do not reflect the impact of increase in zero emission vehicle adoption, improvement in fuel efficiency, and changes in speed distribution, all of which can further reduce emissions in conjunction with these measures. TNCs have the ability to rapidly improve emissions performance, and CARB should provide an appropriately ambitious standard in 2023, and rapidly move this standard towards zero emissions sector-wide as rapidly as possible, to adequately encourage them to explore and maximize these and other innovative options.

2. CARB should adopt stand-alone ZEV deployment targets beginning in 2023 and evaluate regulatory pathways that result in 100% ZEV operation in TNCs by 2030.

NextGen has, along with our colleagues at CEERT, UCS, the Sierra Club, the Coalition for Clean Air, and the Natural Resources Defense Council, asked CARB “to include in its analysis a regulatory alternative that achieves

⁵ 2018 CMS Base-year Emissions Inventory Report,

https://ww2.arb.ca.gov/sites/default/files/2019-12/SB%201014%20-%20Base%20year%20Emissions%20Inventory_December_2019.pdf?utm_medium=email&utm_source=govdelivery.

⁶ For example, Lyft is seeking to provide at least 1 billion rides per year via electric autonomous vehicles by 2025:

<https://blog.lyft.com/posts/2017/6/14/lyft-climate-impact-goals>.

⁷ 2018 CMS Base-year Emissions Inventory Report,

https://ww2.arb.ca.gov/sites/default/files/2019-12/SB%201014%20-%20Base%20year%20Emissions%20Inventory_December_2019.pdf.

100 percent electrification by 2030 with robust interim electrification targets starting in 2023 and regularly thereafter.”⁸ We reiterate that position here.

While increasing occupancy, vehicle efficiency and decreasing deadheading miles can all contribute to reducing greenhouse gas emissions, electrification of the TNC fleet provides a particularly significant opportunity to cut emissions. Electrification and other ZEV adoption also provides the only pathway to full decarbonization for trips of any kind in passenger cars. We must promote rapid vehicle electrification throughout the state, but the TNC sector provides an opportunity to replace a disproportionate number of combustion-based miles driven with miles driven free from tailpipe pollution.

The rapid growth of TNC companies has created a unique opportunity for vehicle electrification, with benefits to cities and drivers. Analysis by UC Davis’s ITS shows emission reductions to be nearly three times higher for electrifying ride-share versus electrifying the average California fleet, because vehicles serving TNCs travel much more than the average fleet.⁹ Range limitation is rapidly disappearing as a barrier to feasibility in part due to the increased range of available electric vehicles, and because TNC drivers’ activities have been shown to be largely compatible with existing EV range and performance.¹⁰

2030 is a relatively conservative timeframe for full TNC fleet electrification. Recent studies also illustrate the feasibility of TNC electrification by 2023 to 2025. Analysis by ICCT has demonstrated the 5-year costs of operating a 250-mile range residential charged electric ride-hailing vehicles are already competitive with conventional vehicles today and will reach operating costs that are lower than hybrids in the 2022 to 2025 timeframe.¹¹ While availability of public charging infrastructure remains a short-term barrier, California lawmakers and regulators, alongside private industry, are working to ensure that sufficient charging is available to support 5 million ZEVs by 2030, of which a relatively small percentage will drive on TNC platforms.

⁸ See Attachment.

⁹ “Infrastructure Use by Plug-In Electric Vehicle Owners,” slide 25,
<https://its.ucdavis.edu/wp-content/uploads/Infrastructure-Use-by-EVs-and-Emission-Impacts-of-EVs-in-TNCs.pdf>.

¹⁰ “Infrastructure Use by Plug-In Electric Vehicle Owners,” slide 15,
<https://its.ucdavis.edu/wp-content/uploads/Infrastructure-Use-by-EVs-and-Emission-Impacts-of-EVs-in-TNCs.pdf>.

¹¹ “Emerging policy approaches to electrify ride-hailing in the United States,” figure 2.
https://theicct.org/sites/default/files/publications/EV_ridehailing_policy_approaches_20190108.pdf.

SB1014 is the first legislation of its kind in the nation. It provides an opportunity for California to take leadership on implementing a framework that could truly make a significant difference in reducing transportation emissions and serve as a model nationwide. We urge CARB therefore to recognize both the urgency and the significance of this opportunity and adopt a rule that reflects the level of ambition that our statewide climate targets and that the science of climate change demands.

Sincerely,

David Weiskopf

Senior Policy Advisor, NextGen California

Attachment



January 9, 2020

Mary Nichols, Chair
California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: Support for evaluating a transition to full electrification of TNCs by 2030 as part of Clean Miles Standard regulatory development

Dear Chair Nichols and Members of the Board,

The Union of Concerned Scientists (UCS), CEERT (The Center for Energy Efficiency and Renewable Technologies), Natural Resources Defense Council (NRDC), Sierra Club California, NextGen California and Coalition for Clean Air urge CARB to evaluate a transition to the full electrification of Transportation Network Company (TNC) operations by 2030, with strong interim targets beginning in 2023, as part of the regulatory development of the Clean Miles Standard called for in Senate Bill 1014.¹

Senate Bill 1014 specifically requires CARB to adopt annual greenhouse gas emission per-passenger-mile and zero-emission passenger mile targets for TNCs beginning in 2023. The Clean Miles Standard is an important step towards reducing climate emissions from TNC operations which have grown rapidly in California over the past decade. Given the critical need to rapidly electrify the transportation sector in California to meet air quality and climate goals, it is imperative that TNCs be placed on a robust path to full electrification. Ultimately, zero-emission TNC operations along with greater pooling of rides, and a more multi-modal transportation system are needed to address growing vehicle miles traveled (VMT), congestion, and pollution.

TNC companies are a growing part of California's transportation system particularly in urban areas.² However, in California, transportation emissions – the largest source of emissions in the state – have hit their highest level in ten years.³ TNC companies account for an increasing share

¹ Skinner, CHAPTER 369, Statutes of 2018, https://leginfo.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB1014

² For example, ride-hailing trip data shows these trips now account for 13 percent of miles traveled in the City and County of San Francisco. <https://drive.google.com/file/d/1FIUsvkVkj9IsAnWJQ6kLhAhNoVLjFdx3/view>

³ <https://www.next10.org/publications/2019-gii>

of VMT and have higher per passenger mile emissions than average vehicle trips in California. According to a analysis by CARB, per passenger mile emissions for TNC trips are 50 percent greater than average California vehicle trips.⁴ However, this comparison underestimates the climate emissions from TNC trips, as ride-hailing trips are often replacing transit, walking or biking trips or resulting in new trips that would not have been taken.⁵ By extension, increased ride-hailing trips and higher emissions per passenger-mile means TNCs are increasing transportation emissions around the state. As TNCs grow in popularity, it will be difficult for California to meet its 2030 climate commitments without addressing emissions from TNCs.

TNCs can contribute to lower carbon transportation emissions in California, but they must rapidly take steps to overcome the added emissions of their vehicle operations in order to do so. Increased vehicle occupancy, vehicle efficiency, and decreasing deadhead miles⁶ must all contribute to reduce the increased emissions of TNCs. However, electrification of TNC vehicles provides the largest potential to cut emissions from TNC operations and is consistent with the overall transportation sector goals for the state. Analysis by UCS shows that an EV powered by the California electricity grid has emissions as low as a gasoline vehicle with an efficiency rating of 109 miles per gallon. That is 50 percent below the most efficient hybrid gasoline vehicles and more than 75 percent lower than the average new passenger vehicle.⁷

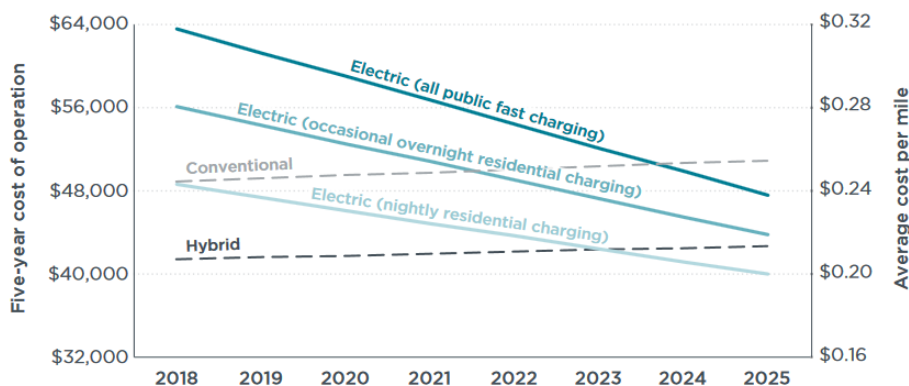


Figure 2. Average ride-hailing 5-year cost of operation and cost per mile for conventional, hybrid, and 250-mile electric vehicles for new vehicles from 2018-2025, depending on charging conditions.

Source: ICCT 2019

range, residentially-charged EV – is cost competitive with today’s conventional passenger vehicles. In the 2023 to 2025 time frame, electric TNCs would have similar, if not better, operating costs-per-mile compared to a hybrid internal combustion engine vehicle; depending on the type and cost of charging available.⁸ Additionally, vehicles operating for TNC fleet are in

Recent analysis by the ICCT also illustrates the feasibility of TNC electrification over the next decade, which is squarely in the timeframe of Clean Miles Standard. Their analysis demonstrates that the 5-year cost of operation – for a 250-mile all electric

⁴ <https://ww2.arb.ca.gov/resources/documents/2018-base-year-emissions-inventory-report>

⁵ Some studies indicate that between 26 and 61% of TNC trips substitute for transit, walk, or bike travel or trips that would not have been made at all. See: <https://escholarship.org/uc/item/35x894mg>, https://itspubs.ucdavis.edu/wp-content/themes/ucdavis/pubs/download_pdf.php?id=2752,

⁶ Deadhead miles could account for almost ½ of the VMTs in certain markets. See: <https://www.citylab.com/transportation/2018/04/how-uber-and-lyft-could-do-better-by-the-planet/558866/>, <http://www.schallerconsult.com/rideservices/unsustainable.pdf>

⁷ Model year 2020 Hyundai Ioniq Blue has an average mpg rating for 58 mpg (www.fueleconomy.gov). The average fuel economy rating of new 2018 model year vehicles is 25.4 mpg (www.epa.gov/automotive-trends).

⁸ https://theicct.org/sites/default/files/publications/EV_ridehailing_policy_approaches_20190108.pdf

general newer than California's average passenger vehicles.⁹ If this ownership pattern holds true in the future then this could provide an opportunity for TNC drivers to quickly adopt ZEV technology.

While the economics of TNC electrification appear favorable in the 2025 timeframe, policy intervention is critical to advancing electrification of TNCs and creating the environment for large-scale investment in DC fast-charging infrastructure needed to support TNC electrification. The good news is demand for charging from TNC electrification can facilitate the expansion of fast-charging infrastructure by improving the business case for investment. The economics of fast-chargers are significantly improved as charger utilization rates increase. The EVGo partnerships with Maven and more recently announced partnership with Uber suggest that market participants are starting to work together to leverage this opportunity. Despite the potential for the positive economic case for the deployment of EVs in TNCs, there is a chicken and egg problem common with alternative fuel deployments: 1) Investment in fast charging infrastructure for TNCs is less likely to be economically attractive without some certainty in deployments of EVs in TNC fleets, and, 2) deployment of EVs in TNC fleets are less attractive and less likely to succeed at scale without fast-charging infrastructure.¹⁰ TNCs are also unlikely to facilitate driver transitions to electric vehicles, through attractive leases/leasing, without greater investment in DC fast charging infrastructure or policy requirements to decrease emissions. The Clean Mile Standard is the key to breaking this log jam by requiring a steadily growing requirement for EV deployment in TNCs which gives greater certainty to either charging providers, or the TNC companies themselves, to invest in the necessary fast charging infrastructure.

We urge CARB to fully evaluate a transition to full electrification of TNCs in California by 2030 as part the Clean Miles Standard regulatory development.

CARB is currently in the process of developing the proposed Clean Miles Standard requirements for 2023 and beyond. As part of this process, we are urging CARB to include in its analysis a regulatory alternative that achieves 100 percent electrification by 2030 with robust interim electrification targets starting in 2023 and regularly thereafter. Including such a scenario analysis in the rule development will ensure that Board members have the information necessary for them to make an informed determination about which is the best and most transformative approach to adopt in establishing the Clean Miles Standard requirements in late 2020.

Importantly, we are not suggesting vehicle electrification as a substitute for other important strategies including increased pooling of rides or reducing the number of deadhead miles.¹¹ These are critical strategies that must also be encouraged through the Clean Miles Standard in order to address the increased vehicle travel impact from TNC operations.

⁹ See slide 37: https://ww2.arb.ca.gov/sites/default/files/2019-09/Clean_Miles_Standard_Workshop_Slides.pdf

¹⁰ https://scripts.betterenergy.org/reports/GPI_DCFC_Analysis_July_2019.pdf

¹¹ Pooling for rides can lead to reduced emissions when a trip with fewer occupants is displaced by one with a greater number of occupants. Trip shifting (e.g. either occasionally from auto to transit by providing better first- and last-mile connections to regional transit, or, by providing such a convenient and reliable alternative to car ownership that it incentivizes the ownership of fewer cars thereby inducing a permanent shift of trips to transit or non-motorized modes of travel) can also reduce emissions.

Ride-hailing companies can either be part of the solution for transforming California's transportation system to meet the state's low carbon goals, or conversely, they can slow progress towards meeting our pollution goals. The Clean Miles Standard is a critically important policy opportunity to ensure that the impacts of this growing source of vehicle miles and emissions is set on the right track.

Sincerely,

Don Anair
Research and Deputy Director, Clean Transportation Program
Union of Concerned Scientist

John Shears
Consultant on Climate, Clean Transportation and Alternative Fuels
CEERT (The Center for Energy Efficiency and Renewable Technologies)

David Weiskopf
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Katherine Garcia
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Bill Magavern
Policy Director
Coalition for Clean Air

Simon Mui
Senior Scientist, Clean Vehicles and Fuels
Natural Resources Defense Council