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More Needs to Be Done to Lower Costs for Ridehailing Drivers to Shift to Electric Vehicles

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Issue

Transportation network companies (TNCs) have played an increasingly prominent role providing on-demand mobility for consumers across California. The California Public Utilities Commission (CPUC) and the California Air Resources Board (CARB) have adopted and are implementing SB 1014 (Clean Miles Standard), which establishes an annual increase in the percent of zero-emission passenger miles traveled and greenhouse (GHG) emission reduction targets for TNCs. This regulation requires TNC drivers to acquire and operate an electric vehicle (EV).

In collaboration with the Rideshare Drivers United (RDU), a grassroots driver advocacy group, we collected data to understand the total cost of EV ownership for TNC drivers. This included two TNC driver group discussions (four drivers each), ten expert interviews, an in-depth driver survey (n=436), and a dataset of 150 million TNC trips from the CPUC. The driver survey was distributed in December 2023 and April 2024, investigating full-time and part-time driver perceptions of TNC driving and any changes to their driving due to operating an EV. The CPUC dataset reports trip-level TNC activities from September 2019 to October 2020; it includes data on trip location, time, driver pay, and other variables. We also evaluated data on vehicle price and fuel economy, including approximately 70 car models most frequently used for TNC travel to investigate the economic feasibility of purchasing, leasing, or renting EVs for ridehailing. One of the key metrics is the net TNC driver earnings or the total TNC income subtracted by service fees, fuel costs, monthly vehicle payments, etc. The analysis

assumed a term of 84 months and a financing interest rate of (8.55%), associated with a good credit score (680 to 720). A sensitivity analysis on interest rates determined that, while they change the driver's cost, they do not significantly impact the optimal decision making across the scenarios.

Key Research Findings

EV leasing is financially more challenging for TNC drivers who drive a lot. The driver survey revealed that the average TNC driver travels 700 to 800 miles per week or 40,000 miles a year, which would greatly exceed the typical leasing mileage limit of about 10,000 to 15,000 miles. With an EV lease, drivers would face a price penalty for excess mileage.

Compared to financing, the total net TNC driver earning of vehicle leasing is higher at the beginning of a driver tenure, but it soon loses advantage as time goes on and as weekly TNC miles increase. Figure 1 shows the time it takes for vehicle financing to reach TNC net earning parity with leasing when the vehicle is driven certain fixed weekly

Key Terms

Transportation Network Companies (TNCs): Also known as ridehailing or ridesourcing companies, provide on-demand service to transport passengers on roadways.

Clean Miles Standard: Also known as Senate Bill (SB) 1014, is a California directive that requires TNC drivers switch to zero-emission vehicles by 2030.

Same-vehicle time-to-parity (financing vs. leasing)

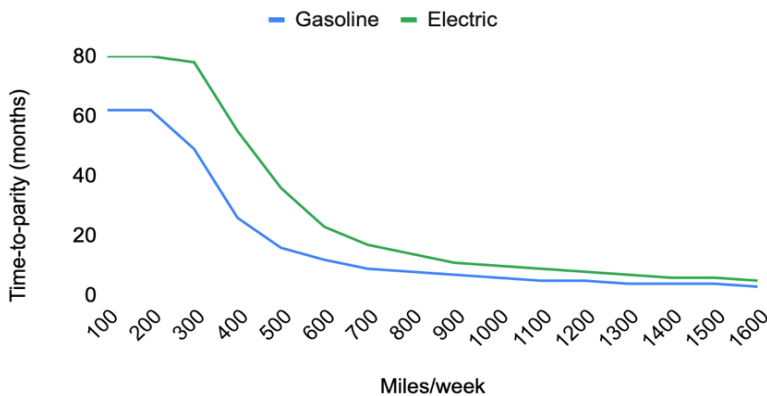


Figure 1. Time-to-parity (in months) per weekly TNC miles between financing vs. leasing mileage since the vehicle is acquired (e.g., financed, leased). It generally takes 60 to 80 months when the vehicle is driven only 100 miles per week for TNC services, but this required period (i.e., in number of months to reach financing parity with leasing) soon plummets around 300 miles when the annual leasing mileage is reached and when the penalty starts to charge for excess miles. For the same vehicle, EVs take longer to reach financing-to-leasing parity than their gasoline counterparts primarily due to the higher upfront EV purchase prices.

Acquiring and driving a used EV for TNCs is not as economically beneficial as a new EV. In other words, the net driver monthly earnings are generally lower for used EVs. This is primarily due to the reduced amount of EV incentives available for used EVs.

When considering resale, drivers may foresee a greater gain with EV financing by paying off the vehicle in advance and reselling it after two to three years. Due to the fast and immediate vehicle depreciation after purchase, the total vehicle asset for financing is negatively affected at the beginning of the loan, but this effect diminishes and eventually becomes positive after two to three years as depreciation slows down.

EV charging discounts are one of the most effective ways to lower the EV cost barrier to TNC drivers. Even a

small discount can make a big difference when factored in with the extensive TNC miles driven. When a 45% charging discount (\$0.40/kWh to \$0.25/kWh) is applied to an EV driver who drives 700 miles/week for TNCs, our research reveals that they could reach cost parity with a gas-powered vehicle (e.g., ICE, hybrid vehicles) at least five years sooner (in 21 months vs. over 84 months).

Driving less than 100 miles a week (if the vehicle is an EV or not) will not generate positive income for a TNC driver who does not own their vehicle.

Figure 2 compares the net monthly earnings (in blue and yellow boxes) of very-low-mileage (<100 miles/week) drivers on the left side with very-high-mileage drivers (>1100 miles/week) on the right side. For higher-mileage TNC driving, EV financing is more cost effective for TNC drivers who plan to operate ridehailing services for at least a few years (green boxes, indicating positive net earnings). A few experts interviewed suggested that TNCs and state agencies may prioritize EV rentals to ensure a smoother transition among TNC drivers. However, our analysis suggests that EV rentals are more profitable only if the driver plans to operate the vehicle for less than three months and drive at least 500 miles/week. This is due to the significant down payment in the first month needed to finance a vehicle. Additionally, the analysis found that drivers must devote at least 15 hours per week of their

Operate 3 months, drive 100 miles/week Operate 3 months, drive 1100 miles/week

Net Monthly Earning	ICE	ICE			Net Monthly Earning	ICE	ICE		
		Finance	Lease	Rent			Finance	Lease	Rent
		-\$2,340	-\$845	-\$1,241			\$1,204	\$1,820	\$2,213
EV	[EV - ICE]	Finance	Lease	Rent	EV	[EV - ICE]	Finance	Lease	Rent
-\$3,361	Finance	-\$1,021	-\$2,515	-\$2,120	\$277	Finance	-\$928	-\$1,543	-\$1,937
-\$1,063	Lease	\$1,277	-\$218	\$178	\$1,695	Lease	\$491	-\$125	-\$518
-\$1,347	Rent	\$993	-\$501	-\$106	\$2,190	Rent	\$986	\$371	-\$23

Operate 84 months, drive 100 miles/week Operate 84 months, drive 1100 miles/week

Net Monthly Earning	ICE	ICE			Net Monthly Earning	ICE	ICE		
		Finance	Lease	Rent			Finance	Lease	Rent
		-\$263	-\$385	-\$1,241			\$3,281	\$2,279	\$2,213
EV	[EV - ICE]	Finance	Lease	Rent	EV	[EV - ICE]	Finance	Lease	Rent
-\$353	Finance	-\$91	\$32	\$887	\$3,284	Finance	\$2	\$1,004	\$1,070
-\$390	Lease	-\$128	-\$5	\$850	\$2,368	Lease	-\$914	\$88	\$154
-\$1,347	Rent	-\$1,084	-\$961	-\$106	\$2,190	Rent	-\$1,091	-\$89	-\$23

Figure 2. Cross comparison of net monthly TNC driver earnings using EV vs. conventional vehicle

income from TNC driving to pay off EV rental fees to break even.

EV financing is optimal for high-mileage and long-term drivers; leasing is optimal for low-mileage and short-term drivers; and renting is relatively better for short-term and high-mileage driving. Figure 3 compares the optimal ridehailing EV acquisition pathways (i.e., financing, leasing, or renting) and presents the pathway that yields the highest net driver monthly earnings. It is observed that EV financing and leasing can each serve the driving decisions of TNC drivers. In contrast, EV rentals are only feasible for a restrictive set of TNC drivers (i.e., driving at least 700 miles/week for less than six months) nor are EV rentals economical for longer-term driving.

Month	Miles/week		EV Dominant Pathways			
	100	300	500	700	900	1100
3	Lease	Lease	Lease	Rent	Rent	Rent
6	Lease	Lease	Lease	Lease	Lease	Rent
9	Lease	Lease	Lease	Lease	Lease	Finance
12	Lease	Lease	Lease	Lease	Finance	Finance
24	Lease	Lease	Lease	Finance	Finance	Finance
36	Lease	Lease	Finance	Finance	Finance	Finance
48	Lease	Lease	Finance	Finance	Finance	Finance
60	Lease	Lease	Finance	Finance	Finance	Finance
72	Lease	Lease	Finance	Finance	Finance	Finance
84	Finance	Finance	Finance	Finance	Finance	Finance

Figure 3. Dominant vehicle acquisition pathways for EVs

Practitioner Recommendations

Based on findings from this study, the various actors involved in SB 1014 implementation (i.e., CPUC, CARB, TNC companies, car rental companies, charging companies, etc.) may want to consider the following:

All stakeholders: Develop TNC driver-tailored EV upfront incentives, EV leasing incentives, and EV rental incentives depending on the nature of the TNC job (e.g., much more

driving and wear and tear, part-time vs. full-time status, short vs. long-term driving), rather than a one-size-fits-all benefit package offered to all regular drivers.

EV charging companies, utilities, and TNCs: Monitor and regulate the electricity rate for EV charging relative to gasoline fueling, making sure the price TNC drivers pay to charge is comparable or less than the ICE equivalent.

EV leasing companies and TNCs: Lift the mileage limit or apply a looser mileage limit for TNC drivers who opt to lease or rent an EV for their service; craft policies to make sure EV leasing and lease-to-own or buyout options are cost effective for ridehailing drivers.

Automakers, car dealerships, and TNCs: Introduce policies that favor EV financing for longer-term and high-mileage TNC drivers.

EV rental companies and TNCs: Incentivize EV rentals for short-term and higher-mileage TNC drivers. Renting is a good option for a driver to test an EV for TNC operations to ensure that it meets the expected needs of providing service before committing to a longer-term option.

State agencies and TNCs: Initiate educational programs to assist TNC drivers in finding a pathway to acquiring an EV that is most suitable for their situation.

More Information

This policy brief is drawn from a forthcoming journal article, which once published can be found at www.ucits.org/research-project/2023-24. For more information, please contact Susan Shaheen at sshaheen@berkeley.edu.

¹ CPUC TNC data portal: <https://www.cpuc.ca.gov/regulatory-services/licensing/transportation-licensing-and-analysis-branch/transportation-network-companies/tnc-data-portal>

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