

From: [ARB Clerk of the Board](#)
To: [Bechtold, Bradley@ARB](mailto:Bechtold_Bradley@ARB)
Subject: FW: comments on Mobile Source Strategy
Date: Thursday, December 10, 2020 10:22:20 AM

From: Jack Lucero Fleck <luceroofleck@gmail.com>
Sent: Thursday, December 10, 2020 10:18 AM
To: ARB Clerk of the Board <cotb@arb.ca.gov>
Subject: comments on Mobile Source Strategy

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Date: December 10, 2020

To: California Air Resources Board

From: Jack Lucero Fleck, 350 Bay Area Transportation Campaign

Re: Comments Regarding the Draft 2020 Mobile Source Strategy--Agenda Item 20-13-6

My main point is that **the Draft 2020 Mobile Source Strategy does not address the State's goal to reduce GHGs 40% below 1990 levels by 2030.** To achieve this I calculate that the State would have to phase out the sale of Internal Combustion Engine Vehicles by 2026. Please see my detailed letter to the Board dated November 30, 2020 on this point below. I urge the Board to direct staff to develop a plan to achieve the 40% reduction goal and incorporate it into the Mobile Source Strategy.

November 30, 2020

Ariel Fidely
Air Pollution Specialist South Coast Air Quality Planning Section
California Air Resources Board
P.O. Box 2815
Sacramento, California 95812

ariel.fideldy@arb.ca.gov

Dear Ariel Fideldy,

Thank you for the Draft 2020 Mobile Source Strategy (MSS) report dated November 24, 2020. Clearly the CARB team has put a lot of hard and thoughtful work in this document. I very much appreciate this important effort.

I would like to address an issue that I do not believe is brought out in the document. The issue is-- **how is California going to meet its goal of 40% reduction in greenhouse gases (GHGs) by 2030?** There is enough information in the MSS to show what is likely to be achieved in terms of reducing GHGs from the MSS, which is about 16% below 1990 levels by 2030 (as discussed below). But the MSS does not identify ways that the 40% reduction can be achieved. If it is CARB's position that the 40% reduction cannot be achieved, then the report should make that clear.

It is important to note that the Intergovernmental Panel on Climate Change has warned that the world has to reduce GHG emissions by 50% by 2030 to have a 2/3 chance of avoiding 1.5°C global warming, which will have catastrophic consequences. So achieving 40% reduction by 2030 is actually a conservative goal.

It's also important to note that the MSS does not address GHGs from aviation or shipping. So again, the document understates the level of action required.

How much will GHG emissions be reduced by 2030?

Table 4 in the report projects a 29% reduction in GHGs from Light Duty Vehicles (LDVs) from 2017 to 2030 with about 8 million Zero Emission Vehicles on the road in 2030. Figures 21 & 25 and Table 8 give 10%, 28%, and 18% for reductions from Medium Duty Vehicles (MDV), Heavy Duty Vehicles (HDV), and Off-Road vehicles, respectively, from 2020 to 2030 as shown in the table below.

Altogether these reductions total 11% of all CA GHGs. Since transportation comprises 41% of CA GHGs, this is a total of $11/41 = 27\%$ reduction of emissions from transportation.

Reduction of GHGs in the Transportation sector from 2017 or 2020 to 2030

Sector	% reduction for that vehicle type	% of transp. GHGs of all CA GHGs	% reduction of all CA GHGs
LDV	29	28	8.1

MDV	10	2	0.2
HDV	28	7	2.0
Off Road	18	4	0.7
Total		41%	11%

Clearly, the 27% reductions by 2030 are well below the goal of 40% reductions. However, to make matters worse, SB32 (passed September, 2016) requires a 40% reduction by 2030 from 1990 levels, not 2017 levels. GHG emissions from transportation rose from 152 Million Metric Tons (MMT) in 1990 to 174 MMT in 2017, (numbers from CARB's [2017 Climate Change Scoping Plan](#)). Therefore, a reduction of 27% from 2017 to 2030 would be about a 16% reduction from 1990 levels. The report should clarify this point.

Is there a way to reach 40% reduction by 2030?

Reaching 40% emissions reduction will not be easy. One ray of hope is the energy sector which continues to add renewables at a rapid pace. If the energy sector can reach 90% renewables by 2030, it would mean that other sectors may not need to achieve 40% reductions. In addition, if the cuts in gas from transportation are allowed to translate into cuts in the refineries (i.e. refineries are not allowed to increase exports to make up for decreased California gas and diesel demand), that would also be a boost to reaching the 40% goal.

But Transportation still has to achieve more than the current projection of 16% emission cuts. The 2016 Mobile Source Strategy suggested that a 30% cut in GHGs from transportation emissions from 1990 levels would be a desirable goal. Since the 2020 Mobile Source Strategy is only showing a 16% reduction from 1990 levels, what additional actions would make it possible to achieve 30%?

If we increase the number of EVs in 2030 from 8 million to 13 million, I calculate that we would achieve a 30% reduction in GHGs from transportation. This means that 43% of all vehicles—i.e. 13 million out of California's 30 million vehicles-- would need to be EVs by 2030 (see calculations below)

This also assumes that we manage to keep VMT flat—i.e. reduce per capita VMT by about 10% by 2030 from current levels, which is also a serious challenge. The MSS lays out a number of ways that this can be achieved.

Can this be done?

To reach 13 million Electric Vehicles by 2030, EV production and sales (including fuel cells) would have to ramp up drastically, reaching 100% of all new cars being EVs in 2026—i.e. 9 years sooner than the state’s current goal of 2035. This is based on an assumed 2 million new cars sold in California annually. If all new cars were electric starting in 2026, that would add 5 years x 2 million per year = 10 million EVs as of 2030. The additional 3 million EVs could be achieved by increased sales from 2021 - 2025 plus increased Clean Cars for All purchases.

A big obstacle here would be to provide an estimated 10 million charging stations. The [EVI-Pro tool](#) points to about 300,000 public Level 2 and Level 3 chargers for 13 million electric vehicles-- with some extrapolation—and I’m estimating that 80% of vehicles would have a charger at home. The number could be somewhat fewer if fuel cell vehicles become more widely used. 10 million chargers would be about 2700 charging stations installed per day over the next 10 years! This can either be seen as too daunting to attempt, or it can be seen as a full employment opportunity for California!

Calculations:

As shown in the table below, if we increase the reduction in emissions from LDVs from 29% to 46%, we will increase the overall reduction of emissions from transportation from 11% to 15.8%. This would be $15.8/41 = 39\%$ cut in transportation emissions. 2017 transportation emissions were 174 MMT. Therefore a 39% cut is $.39 \times 174 = 68$ MMT. $174 - 68 = 106$ MMT remaining in 2030. This represents a cut of $152 - 106 = 46$ MMT from the 1990 level by 2030. $46/152 = 30\%$. In other words, a 46% cut in GHGs from LDVs by 2030 would allow us to meet the 2017 Scoping Plan goal of 30% cuts for transportation GHGs.

Reduction of GHGs in the Transportation sector from present to 2030 with 43% of all vehicles being EVs by 2030

Sector	% reduction for that vehicle type	% of transp. GHGs of all CA GHGs	% reduction of all CA GHGs
LDV	46	28	12.9
MDV	10	2	0.2
HDV	28	7	2.0
Off Road	18	4	0.7
Total		41%	15.8%

How many EVs would it take to achieve 46% reduction in GHGs from LDVs? To increase the reduction of emissions from LDVs from 29% to 46%, we can use the percentages supplied in

the MSS. i.e. if 8 million EVs—27% of California's 30 million vehicles---combined with some improvement in fuel efficiency by ICEVs, achieves 29% reduction in GHGs from LDVs, then 43% of EVs should achieve a 46% reduction ($29/27 \times 43$). $43\% \times 30 \text{ million} = 13 \text{ million EVs}$ on the road by 2030.

Note that the impact of EV sales and VMT reduction measures could be verified if we measure and report on the volume of gas sales in each jurisdiction in California. That way each city could see how their Climate Action Plan is actually working. This is the ultimate proof that we are achieving our GHG reduction goals.

Conclusion

The science is clear—global GHG emissions need to be cut by 50% by 2030 and 100% by 2050.

The legislation is here—SB32 requires California to achieve 40% cuts by 2030. This is less than what science calls for. However, a major benefit of accelerating the adoption of EVs to reach the 40% goal by 2030 would be that there would be virtually no Internal Combustion Engine Vehicles (ICEVs) on the road by 2045; this would be a big boost to California's goal of becoming carbon neutral by 2045 and would help achieve the IPCC goal of 100% carbon neutrality by 2050.

The technology is here—at least for LDVs, there are many models available that can take the place of ICEVs.

The task is laid out--We need to stop selling ICEVs by 2026, and we need to keep VMT flat by supporting active transportation options to driving. I urge you to examine the numbers I have presented here, (which are CARB numbers!). Please let me know if there are any errors in my assumptions or calculations.

We need to leap over the hurdles of science denial and despair! We can already see what 1°C of global warming is doing to California and the world. Failing to act with the urgency that the crisis requires is not a viable option. We need to act in unity and solidarity with all people of California, and the world, to make this happen!

Sincerely,

Jack Lucero Fleck

PE, Co-leader of 350 Bay Area Transportation campaign

cc: 350 Bay Area Transportation group

PS—Please note a small error--Figure 10 on Page 51 appears to show GHG emissions in grams per kilometer, not grams per mile as the Figure states.