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California Air Resources Board
1001 "I" Street
Sacramento, CA 95814
Submitted to jakub.zielkiewicz@arb.ca.gov

November 21, 2016

Re: Comments on the 2030 Target Scoping Plan

Dear Chair Nichols:

Thank you for the opportunity to provide comments on the 2030 Target Scoping Plan, as required by the Global Warming Solutions Act of 2006 (AB32)[1] and further directives and legislation that outline specifications, such as Executive Order B-30-15, Senate Bill 32 (SB32) and Assembly Bill 197 (AB197). AB32 requires this scoping plan be updated at least every five years, while the Executive Order B-30-15 establishes a midterm greenhouse gas emissions reduction target of 40% below 1990 levels by 2030, and that the AB32 Scoping Plan be updated to incorporate the 2030 greenhouse gas target that was codified by SB32.[2]

Plug In America is the national consumer voice for plug-in electric vehicles (PEVs) and works to promote policies and programs nationwide that put more PEVs on the road for all consumers.[3] Our members are passionate PEV advocates and have driven PEVs for many years, affording Plug in America a unique perspective on how consumers think about PEVs and what actually inspires a consumer to purchase a PEV. Our comments pertain to the adoption of PEVs within the 2030 Scoping Plan.

Benefits of PEVs

From the driver perspective, PEVs are convenient. There's no trip to the gas station needed, and the battery can be charged overnight and be ready to go first thing in the morning. In addition, maintenance for PEVs costs much less than for gasoline vehicles. Plug In Hybrid Electric Vehicles (PHEVs) require fewer oil changes, while Battery Electric Vehicles (BEVs) require none. PEVs also have 10 times fewer moving parts than gasoline vehicles; there's no engine, transmission, spark plugs, valves, fuel tank, tailpipe, distributor, starter, clutch, muffler, or catalytic converter.

Finally, PEVs are cheaper to fuel than gas-powered vehicles. On average, fueling a car with electricity is roughly the same as gas at $1 per gallon of fueling with gasoline, thanks to a PEV's performance

1 Text of AB32: http://www.leginfo.ca.gov/pub/05-06/bill/asm/ab_0001-0050/ab_32_bill_20060927_chaptered.html
2 https://www.arb.ca.gov/cc/scopingplan/meetings/110716/scopingplanpresentation.pdf
3 More information available at: www.pluginamerica.org

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efficiency and the lower cost of electricity.[4] Electricity prices are also far more stable than gasoline prices, allowing drivers to avoid the risk of future price spikes.

For policymakers, PEVs significantly reduce carbon emissions, making the widespread deployment of the technolog especially attractive to policymakers. PEVs powered by electricity from the local grid currently produce 54 percent less (lifetime) carbon pollution than gasoline cars, which could grow to 71 percent by 2050 as our power supply gets cleaner.[5] Using renewable energy to charge a PEV reduces the carbon emissions from the PEVs close to zero. PEVs also have the lowest total lifecycle carbon footprints for all light-duty vehicles on the road.[6] The transportation sector in the U.S. is responsible for nearly a third of our nation's carbon pollution, with cars and light-duty trucks accounting for nearly 20% of the carbon emissions. A recent study found that widespread vehicle electrification across the country could reduce greenhouse gas emissions by between 430 million metric tons and 550 million metric tons annually by 2050.[7]

PEVs are also more cost-effective than gas-powered vehicles. If gas prices go back up to a more typical recent price of $3.50 per gallon, the average electric vehicle will save its owner nearly $9,000 over the vehicle's lifetime.[8] As PEVs are fueled from electricity from the local grid, which is cheaper for all consumers, money not spent on gas or on maintenance can be invested back into the local economy.[9]

In terms of other environmental benefits, PEVs produce little to zero dangerous tailpipe air pollution, improving air quality and reducing health care costs. Despite continued improvement, too many people in the U.S. live where the air is unhealthy for them to breathe.[10] BEVs have no tailpipe and therefore no tailpipe emissions, while PHEVs produce far fewer tailpipe emissions than a standard gasoline-powered vehicle. With more PEVs on the roads, public and private health care costs can be greatly reduced. And, with little to zero tailpipe byproduct and no oil leakage on to roadways, PEVs reduce the public and private sector costs spent on mitigating the pollution from roadway runoff. The polluted runoff from highways is nonpoint source pollution, and can significantly impact local surface and ground water

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4 http://energy.gov/eere/eveverywhere/ev-everywhere-saving-fuel-and-vehicle-costs
5 https://www.nrdc.org/experts/luke-tonachel/study-electric-vehicles-can-dramatically-reduce-carbon-pollution
6 http://carboncounter.com/
7 https://www.nrdc.org/media/2015/150917
8 The analysis was performed by Environment California in the report, "Drive Clean and Save: Electric Vehicles are a Good Deal for California Consumers and the Environment." However, similar incentives are already in place in dozens of other states across the country, and gas prices are similar in dozens of other states as well, suggesting a similar result in savings for other states. The report is available here: http://www.environmentcalifornia.org/sites/environment/files/reports/Drive%20Clean%20and%20Save%20June%202016.pdf
9 Roland-Holst, David. 2012. Plug-in Electric Vehicle Deployment in California: An Economic Assessment https://are.berkeley.edu/~dwrh/CERES_Web/Docs/ETC_PEV_RH_Final120920.pdf and Stroo, Hans. 2015. Bills to Advance Electric Vehicles Make Good Economic and Environmental Sense http://planwashington.org/blog/archive/bills-to-advance-electric-vehicles-make-good-economic-and-environmental-sense/
10 http://www.lung.org/our-initiatives/healthy-air/sota/key-findings/

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quality as well as aquatic habitat. BEVs are cleaner than gas-powered vehicles and have no oil leakage or drips of pollution from the tailpipe.

For utilities and grid operators, the investment in PEVs and the charging infrastructure can result in more off-peak energy sold, and therefore reduced rates for ratepayers. Additional load from PEVs can make more efficient use of existing utility assets, which – especially through off-peak charging – puts downward pressure on electricity rates.[11] PEVs can also be a source of potential load control. Many PEV owners are open to load control programs, such as letting the utility or a third party turn PEV charging on and off as needed, as long as it does not prevent the charge from finishing by a specified time.[12] Going a step farther than load control is pulling energy from idle PEVs at peak load times via "vehicle-to-grid" (V2G). Finally, PEVs can also make the integration of renewables easier. PEV loads are generally during low demand times (and can be moved around with time-of-use rates and other tools), making it easier to justify the addition of renewable power sources that cannot be ramped.[13]

2030 Scoping Plan Recommendations

California understands these benefits that PEVs provide. Since 1990, California has been a nationwide leader in establishing strong policies that not only directly support PEVs, such as the Zero Emission Regulation and the Clean Vehicle Rebate Project (CVRP), but also indirectly support PEVs, such as the Global Warming Solutions Act of 2006. The California Air Resources Board (ARB) has been at the helm of implementing these policies and programs. Thanks to the leadership within the Governor's office, Legislature and with the ARB, California has 250,000 PEVs on the road as of November 2016, with the market ready to accelerate.[14] However, in order to achieve the Governor's target of 1.5 million of these clean vehicles on the road by 2025, not to mention the greenhouse gas emission reduction targets in 2030, California must do much more.

Several countries have recently taken a bold, yet critically necessary, move in addressing the emissions from the transportation sector by making the ownership of an internal combustion engine (ICE) vehicle by 2030 extremely costly. In Germany, the German Bundesrat (Federal Council), recently passed a bi-

11 For a comprehensive report on the PEV potential and challenges for utilities, see the Plug In America report for CalETC, "Evaluating Methods to Encourage Plug-in Electric Vehicle Adoption." October 2016. Available here: https://pluginamerica.org/wp-content/uploads/2016/11/PEV-Incentive-Review-October-2016.pdf
12 Tal, Gil. 2016. Plug-In Electric Vehicle Multi-State Market and Charging Survey http://www.epri.com/abstracts/Pages/ProductAbstract.aspx?ProductId=000000003002007495
13 (INL) Anonymous, Idaho National Laboratory. 2013. How do PEV owners respond to time-of-use rates while charging EV project vehicles http://avt.inl.gov/pdf/EVProj/125348-714937.pev-driver.pdf and (INL) Anonymous, Idaho National Laboratory. 2015 (a). Residential Charging Behavior in Response to Utility Experimental Rates in San Diego http://avt.inel.gov/pdf/EVProj/ResChargingBehaviorInResponseToExperimentalRates.pdf
14 See the press release here: http://www.pevcollaborative.org/sites/all/themes/pev/files/161110_PEVC_PEV_250KSales_Milestone_Release%5B4%5D.pdf

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partisan agreement that starts the process to ban ICE car sales in 2030 by implementing a mix of tax strategies and financial incentives. This would essentially only allow for PEVs and other zero emission cars to be registered going forward in 2030, if adopted by the full German Parliament.[15]

Similar to Germany, the Norwegian National Transport Plan explores options to make ICE vehicle ownership not cost effective through higher taxes on owning an ICE, and additional incentives for PEVs.[16] Dutch politicians have also put forward a proposal that would ban the sale of ICEs completely in the Netherlands by 2025.[17]

The objectives for the 2030 Scoping Plan are stated as follows: achieve the 2030 GHG target, provide direct GHG emissions reductions, minimize emissions leakage, facilitate sub-national and national collaboration, support cost-effective and flexible compliance, support climate investment for programs in disadvantaged communities, provide air quality co-benefits, and protect public health. **Therefore, in order to achieve these objectives and California's long-term climate and environmental goals, we strongly urge that the ARB consider a ban on the registration of new ICE vehicles by 2030.** As stated above, PEVs bring enormous benefits to the consumer, local economy, air quality and the environment, and a ban on ICEs would rapidly accelerate the adoption of these clean vehicles. A ban on the registration of new ICE vehicles provides the most direct method of GHG emission reductions.

With the price of battery technology dropping, the deployment of charging infrastructure along the designated PEV corridors, and announcements from nearly every major automaker with plans to invest in long-range PEV vehicles, it is clear that the transportation sector is changing. In addition, ride sharing services such as Uber and Lyft have transformed the taxi industry, and more green car sharing programs are on the way. Autonomous driving technology is being tested and is included as part of some PEV vehicles today. In the future, some consumers may choose not to own cars, but to utilize these autonomous vehicles or ride-sharing programs instead. **As the ARB develops the regulations for these autonomous vehicles and ride-sharing programs, we urge the ARB to require the use of PEVs in these autonomous vehicles and ride-sharing programs.** Autonomous PEV vehicles and PEV ride-sharing programs should be included as part of the 2030 Scoping Plan.

These bold recommendations certainly will have their challenges. However, California must lead the way in the transportation sector and accelerate the adoption of PEVs on the road. These recommendations will tremendously help to accomplish this adoption of PEVs and achieve a 40% reduction in GHG emissions by 2030.

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[15] More information, including the link to the actual German resolution (in Germany) is found here: http://arstechnica.com/cars/2016/10/germanys-bundesrat-votes-to-ban-the-internal-combustion-engine-by-2030/
[16] http://www.ntp.dep.no/English
[17] https://cleantechnica.com/2016/04/06/dutch-politicians-call-for-ban-of-all-new-gas-diesel-cars-by-2025/

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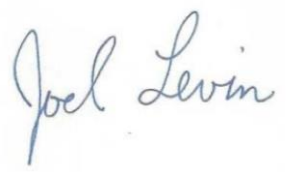
We would be happy to discuss these recommendations further with you. Please send any questions to Katherine Stainken, Policy Director, at kstainken@pluginamerica.org.

We thank you for this opportunity to provide comments on the 2030 Scoping Plan, and look forward to working with you.

Best regards,



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CC: Alberto Ayala