Comments of the American Council for an Energy-Efficient Economy (ACEEE) on the "Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles" Proposed Rule (88 FR 29184)

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July 2023

The American Council for an Energy-Efficient Economy (ACEEE) is an independent non-profit organization dedicated to advancing energy efficiency policies, programs, technologies, investments, and behaviors. ACEEE aims to build a vibrant and equitable economy, one that uses energy more productively, reduces costs, protects the environment, and promotes public health and safety.

We offer the comments below on the Notice of Proposed Rulemaking (NPRM) to the "Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles" proposal. If EPA has any questions, please do not hesitate to contact Peter Huether at phuether@aceee.org.

The U.S. needs the strongest vehicle standards

The United States will need to greatly reduce light-duty vehicle (LDV) greenhouse gas emissions if it is to have any chance of meeting the Biden Administration's economy-wide emissions reduction goal of 50% by 2030 and stave off the worst impacts of climate change. Transportation is now the largest source of greenhouse gas emissions in the United States and the light-duty sector makes up 58% of those emissions.[1] Reducing carbon emissions is critical to tackling climate change but increasing LDV efficiency will also have significant benefits to air quality and will reduce driver fueling costs. Vehicles are a significant contributor to local air pollution and the associated health impacts, leading to increased rates of asthma, increased risk of heart attacks, strokes, and lung cancer.[2] These impacts are particularly bad in low-income communities and communities of color, which bear a disproportionate air pollution burden.[3] Greater efficiency can also provide significant cost savings for drivers when they refuel their vehicles. Low-income households are especially burdened by fueling costs, paying three times more than their higher-income counterparts on gasoline, as a percent of their total income.[4]

[1] https://www.epa.gov/greenvehicles/fast-facts-transportation-greenhouse-gas-emissions
[2] https://www.consumerreports.org/emissions/how-your-car-can-make-the-air-cleaner/
[3] https://www.lung.org/clean-air/outdoors/who-is-at-risk/disparities
[4] https://www.aceee.org/white-paper/2021/05/understanding-transportation-energy-burdens

The Infrastructure Investment and Jobs Act (IIJA) and the Inflation Reduction Act (IRA) have set aside historic amounts of funding for electric vehicles and will greatly reduce greenhouse gas (GHG) emissions from the transportation sector if that money is invested with climate impacts in mind. EPA's standards must build off of these investments. While we commend EPA for proposing strong standards that help the U.S. achieve President Biden's 2030 goal of 50% zero emission new vehicle sales, these historic investments mean we can go even further.[5] Since the IRA was signed into law, $50 billion in investments in EV and battery manufacturing, and supply chain projects have been announced.[6] These investments could get the U.S. to over 60% new light-duty EV sales by the early 2030s.[7] But more will be needed to adequately address the climate emergency. EPA's MY 2027-2032 standards should fully account for the recent federal activity and build off them to achieve further emissions reductions.

EPA should adopt Alternative 1

ACEEE commends EPA for proposing several positive changes to the standards. We support the phase-out of off-cycle credits, limiting A/C credits to internal combustion engine vehicles (ICEVs), eliminating the advanced vehicle multiplier incentives, and lowering the cut-points in the light truck curves. Many of these credits and incentives provide automakers with loopholes for meeting their fleetwide targets and have the potential to weaken the proposed standards. By limiting the off-cycle and A/C credits to vehicles with internal combustion engines, EPA is rightly avoiding over-crediting battery electric vehicles (BEVs) for compliance. Use of these credits by BEVs would result in negative emissions for these vehicles, which distorts their real-world GHG impact. Lowering the cut-points on the light truck curve, or the point at which the emissions level flatlines as footprint increases, from 74 sq-ft to 70 sq-ft ,over the life of the standards is a welcome change that will limit further upsizing in the pick-up truck market.

EPA's GHG vehicle standards have historically been instrumental in advancing emissions reduction technology beyond what the market would otherwise deliver. Given the activity already taking place in the light-duty vehicle market as a result of IRA and IIJA investments and automaker commitments to fully electrifying their lineups, we urge EPA to adopt Alternative 1, at a minimum, to deliver the strongest emissions reduction and advance emissions reduction technologies in the market.

EPA's baseline BEV projections are well below estimated penetration rates expected from IRA and IIJA programs and investments (FR 29333, Table 99). Multiple analyses project that the IRA, in particular, will lead to new-vehicle BEV adoption rates of over 60% by the early 2030s,

[5] https://www.whitehouse.gov/briefing-room/statements-releases/2021/08/05/fact-sheet-president-biden-announces-steps-to-drive-american-leadership-forward-on-clean-cars-and-trucks/
[6] https://www.charged-the-book.com/na-ev-supply-chain-map
[7] https://theicct.org/wp-content/uploads/2023/01/ira-impact-evs-us-jan23.pdf; https://rmi.org/insight/how-inflation-reduction-act-will-affect-ev-adoption-in-the-united-states/

compared to EPA's baseline, "No Action", scenario where BEVs only reach roughly 40% of new vehicle sales between MYs 2030 and 2032.[8] EPA's standards should fully account for the impact of activities outside of the federal standards to drive vehicle electrification and set targets more stringent than what the market is expected to deliver. Alternative 1 is the strongest proposed option that EPA can adopt to maximize net benefits.

EPA also projects that strong hybrids are completely phased out by MY 2031 in the baseline scenario despite their wide and growing usage today (FR 29329, Table 83). In 2021, hybrids accounted for more than 15% of the fleets of five automakers (collectively responsible for producing 5.5 million vehicles for the US market.) Hybrid vehicles made up 20% of the lineup for 4 out of 5 of those automakers. .[9] Hybrid technology is a proven way to considerably reduce the emissions from ICEVs and is a pathway for automakers to meet stronger standards. This is evident in the fact that EPA projects fleetwide strong hybrid penetration to be upwards of 9% in MY 2029 under Alternative 1 compared to only 2% under the proposed standards. Different automakers will choose different compliance pathways and those that already produce a significant number of hybrids could continue to do so, leveraging the investments they've made thus far, to meet the emissions levels in Alternative 1.

Continued improvement in internal combustion engine vehicles is needed

Even under Alternative 1, there would still be over 40 million new ICEVs sold over the life of these standards. These vehicles could be on the road for two decades, contributing significantly to local air pollution, climate change, and costing drivers considerably at the pump. It is critical that the new standards continue improvements on ICEV efficiency while also pushing the market to electrify. Our modelling shows that under EPA's achieved emissions rates, ICEV emission rates would needlessly rise and would be as high as MY 2023 levels. Under the proposed standard, ACEEE estimates that average ICEV emissions could increase by up to 2.9% per year, contributing an extra 805 million metric tons of lifetime CO_2 compared to a future where ICEV performance flatlines at model year 2026 levels. This is equivalent to an approximately 11% increase in emissions from the projected savings in the rule of 7,300 million metric tons of CO_2 (FR 29198, Table 3).

This calculation assumes BEV penetration reaches what EPA projects under its proposal and includes upstream emissions accounting for all vehicles. However, it also factors in the reduction of credits, which limits the increase in ICEV emissions compared to model year 2026 (when there are significantly more credits available). Removing the effects of the proposed off-cycle and A/C credit changes in both model year 2026 and under the

[8] https://theicct.org/wp-content/uploads/2023/01/ira-impact-evs-us-jan23.pdf; https://rmi.org/insight/how-inflation-reduction-act-will-affect-ev-adoption-in-the-united-states/
[9] https://www.epa.gov/automotive-trends

proposed standards means that ICEVs emissions reductions backslide even further, reaching almost 5% annually.

Under EPA's proposed standards, rapid electrification can allow automakers to meet their targets even while letting ICEVs worsen, squandering some of the emissions benefit of electrification and missing an important opportunity for further emissions reductions. This is unacceptable given that mature emissions-reducing technologies, such as hybridization, already exist on the market today and often go underutilized by manufacturers. Our modeled findings are consistent with EPA's own analysis, which projects that ICEV emissions rates will increase over the life of the standard. In fact, EPA compliance modeling indicates that manufacturers will go so far as to remove emissions-reducing technologies from many ICEV models, a completely counterproductive behavior.[10] On the other hand, if manufacturers do not move backwards on ICEV efficiency, they will be able to meet the standards with fewer BEVs than EPA projects, also an undesirable outcome. In either case, the conclusion is that the standards should be strengthened to incentivize ICEV improvements more strongly.

Just a 3% annual reduction in the average emissions for ICEVs — compared, for example, to the 4.6% per-year reduction called for under the 2012 standards for MY 2017-2025[11] — could lead to a further reduction of almost 800 million metric tons of CO_2 and ICEVs that are about 30% cleaner compared to EPA's proposal. Much of this reduction could come from the continued adoption of hybrid vehicles in the US market. EPA expects little contribution from strong hybrids in meeting the proposed standard even though hybridization is a proven technology with decades of usage, as discussed above. EPA projects that strong hybrids will be completely phased out under the proposed standards by 2032 (FR 29329, Table 83), despite hybrids accounting for a record 10% of new vehicles offerings in model year 2022.[12] We should not be moving backwards on ICEV performance and the penetration of proven efficiency technologies like hybridization over the life of these standards.

EPA should implement upstream accounting to encourage BEV Efficiency

EPA proposes to continue, and make permanent, the treatment of electric vehicles as entirely zero emission vehicles (ZEVs)(FR 29252). While it is true that BEVs generate no emissions at the tailpipe, charging these vehicles does create emissions upstream. The major flaw with ignoring refueling emissions is that EPA loses the opportunity to influence the efficiency of a growing component of the vehicle market. EPA is both empowered and required to regulate the emissions from on-road light duty vehicles. Given that BEVs are expected to reach the

[10] Based on analysis of EPA's OMEGA model outputs, 2023_03_14_22_42_30_central_3alts_20230314_Proposal_vehicles.csv

[11] https://nepis.epa.gov/Exe/ZyPDF.cgi/P100EZ7C.PDF?Dockey=P100EZ7C.PDF

[12] https://www.epa.gov/automotive-trends

majority of new sales within this decade,[13] it is imperative we address their emissions. Using the rule to improve BEV efficiency will accomplish this. Upstream accounting in compliance is a simple and effective way to promote efficiency. It recognizes that different BEVs, by virtue of their wide range of efficiencies, are responsible for different levels of emissions from our still fossil fuel-based electricity grid. EPA's GHG standards for LDVs have historically led to innovations in emissions reduction technology and design for ICEVs and the same should be true in an all-electric future.

Our own analysis shows that even among BEVs of the same vehicle type and weight there can be considerable differences in efficiency and, therefore, upstream emissions, as shown in Figure 1.[14] Not all BEVs are created equal and there is still plenty of room for innovation and emissions improvements in the BEV market. The fact that BEVs with curb weights of 5,000 pounds can have efficiencies varying from under 2.5 mi/kWh to over 4 mi/kWh demonstrates how important it is that these standards continue their historical role in advancing automotive innovation as we electrify.

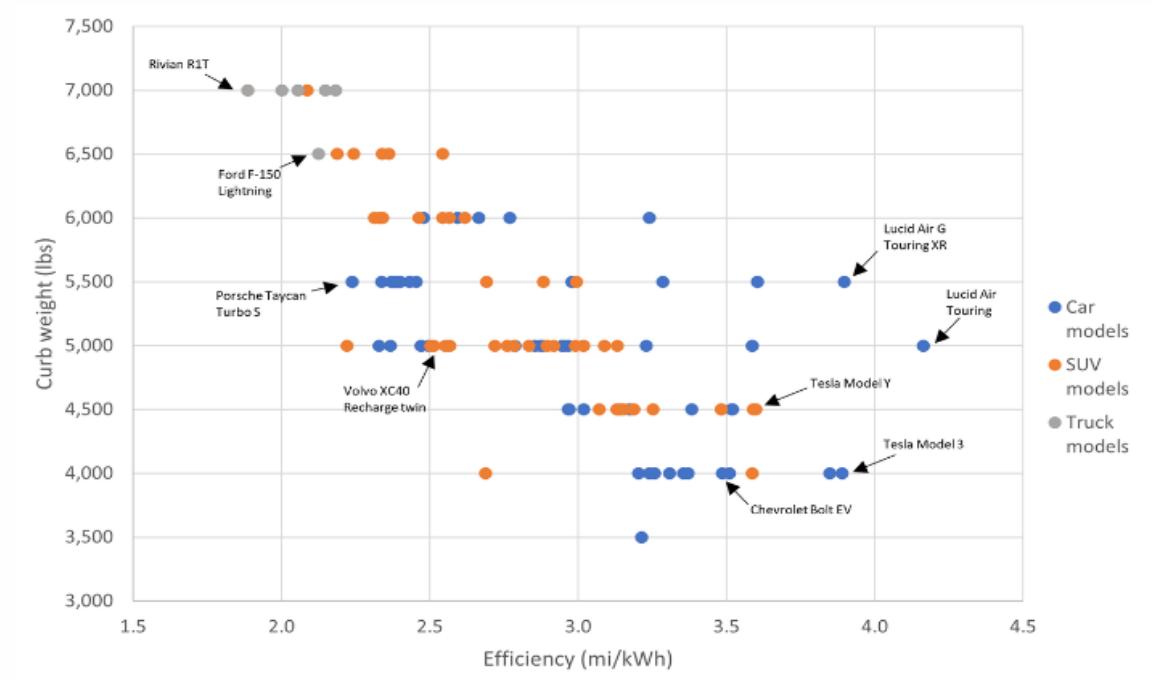

Figure 1. Efficiency versus weight in model year 2023 BEVs

By our calculations, if upstream accounting, or another mechanism, led to a 3% annual growth in BEV efficiency over the life of the standards, lifetime emissions from MY 2027-2032 vehicles would be reduced by over 170 million metric tons under both the proposed

[13] https://www.whitehouse.gov/briefing-room/statements-releases/2021/08/05/fact-sheet-president-biden-announces-steps-to-drive-american-leadership-forward-on-clean-cars-and-trucks/
[14] https://www.aceee.org/blog-post/2023/04/boosting-ev-efficiency-would-cut-emissions-and-reduce-strain-grid

standards and Alternative 1. This does not include the benefits from vehicles sold from model year 2033 onwards that would take advantage of advancements in efficiency technologies and designs potentially spurred by this standard.

Greater BEV efficiency has a number of benefits beyond just reducing upstream emissions. Greater BEV efficiency can allow a vehicle to go the same distance with a smaller battery, effectively reducing the use of high-demand minerals and the emissions generated from vehicle production (the calculations discussed above do not account for these emissions reductions impacts from improved BEV efficiency). While BEVs are certainly still better from an emissions perspective than their equivalent ICEV when looking at the entire life-cycle, it is still important to reduce their environmental impact. Mineral supply and battery manufacturing capacity also have the potential to be limiting factors for rapid electrification, so reducing battery needs per vehicle by increasing efficiency can facilitate achievement of the MY 2027-2032 standards.

Greater BEV efficiency also means a smaller impact on our electricity grid and drivers' wallets, as less electricity is needed to drive the same distance.[15] If all LDVs on the road were electric and had an average efficiency equivalent to the highest-efficiency vehicle on the market today, we could save enough electricity annually to power 21 million homes. Full on-road fleetwide electrification is not expected for decades so this improvement in BEV efficiency is feasible and could even be surpassed if incentivized by the standards.[16]

The proposed standards need to limit upsizing as the light-duty fleet electrifies

In the past decade the U.S. automotive market has seen a shift towards larger vehicles. The average footprint for all vehicle types has increased and more and more light trucks are being sold compared to cars. This has been a major factor for the recent stagnation in real-world fuel efficiency of the fleet.[17] We applaud EPA for attempting to counter these trends with the proposed standards and for correcting conditions from past GHG rulemakings that have exacerbated the issue. Lowering the cutpoints on the light truck curve will reduce emissions by setting a more stringent standard for the largest trucks, as will the flattening of both the car and light truck curves and reducing the GHG grams per mile (gpm) gap between them.

[15] https://www.aceee.org/blog-post/2022/09/evs-surge-utilities-need-transparent-equitable-comprehensive-plans-support-them
[16] https://www.aceee.org/blog-post/2023/04/boosting-ev-efficiency-would-cut-emissions-and-reduce-strain-grid
[17] https://www.epa.gov/automotive-trends

EPA must correct the slope of its car curve to accurately reflect BEV penetration

ACEEE agrees that the slopes of the car and light truck curves that demonstrate the relationship between vehicle footprint and the relevant emissions targets should reflect rising BEV penetration over the period of the standards, and that the appropriate slope for ZEVs should be zero. Tailpipe-only accounting combined with steep curves means that the production of large ZEVs can generate a considerable number of credits for a given manufacturer, which will incentivize vehicle companies to upsize their ZEV offerings and ignore improvements to ICEV options. For an ICEV car curve, EPA has determined that the appropriate slope to avoid incentivizing vehicle upsizing or downsizing is 0.8 gpm/ft^2 and contends that the curve should be adjusted over time based on the ZEV share of sales. However, the car curve slopes for both the proposed standards and Alternative 1 are inconsistent with this finding, as explained below.

Table 1. Car curve slope unadjusted and adjusted for BEV penetration

Model Year	Proposed Standard Car Curve Slope (gpm/sq-ft)	Expected Car BEV Penetration	Adjusted Slope (gpm/sq-ft)	Alternative 1 Car Curve Slope	Expected Car BEV Penetration	Adjusted Slope (gpm/sq-ft)
2027	0.64	43%	1.12	0.59	44%	1.05
2028	0.56	51%	1.14	0.51	50%	1.02
2029	0.47	59%	1.15	0.42	58%	1.00
2030	0.43	65%	1.23	0.38	67%	1.15
2031	0.39	69%	1.26	0.34	72%	1.21
2032	0.35	73%	1.30	0.30	74%	1.15

ACEEE calculated the adjusted slopes in Table 1 based on EPA's description of their methodology in the Draft Regulatory Impact Analysis (DRIA) where a slope of 0.8 is scaled to 0.4 to reflect 50% ZEV penetration (p.1-7). The adjusted slopes shown in Table 1 are far higher than 0.8 and rise over time with increases in BEV penetration. If 0.8 is the slope that minimizes the incentive to upsize or downsize vehicles, then anything higher than that would encourage the manufacture of larger vehicles and lead to higher emissions. Given that the light truck curve is based on EPA's car curve but has added offsets, the light truck curve would be similarly affected. EPA projects that average footprints will rise as a result of the proposed standard, further evidence that the curves as proposed are too steep (DRIA p.1-14). We strongly recommend that EPA flatten both curves to accurately reflect expected BEV penetration in accordance with its own analysis.

Offsets for the light truck curve should be decreased to reflect real-world conditions

EPA constructs the light truck curve for the proposed standards by adding offsets (in the form of higher levels of emissions for a given footprint) to the car curve then similarly

adjusting it for light truck BEV penetration. The first offset is for all-wheel drive (AWD) capability. EPA assumes that crossover vehicles need additional emissions allowances to allow for AWD capability, which would effectively classify them as truck crossovers (DRIA p.1-8). This offset is set at 10 grams per mile (gpm) and is applied uniformly across the entire ICEV-only light truck curve. However, not all light trucks have AWD and EPA's adjustment to the emissions allowance is based on an analysis of what is needed to add AWD to a model (DRIA p.1-8 – 1-9). Therefore, applying this offset to all light trucks, regardless of whether they have AWD, unnecessarily increases the allowable emissions level. In 2021, 78% of pickups and 87% of truck SUVs had AWD while almost 20% of car SUVs and sedans had AWD capabilities.[18] The 10 gpm offset should be reduced to account for this and not further incentivize the shift of cars to trucks.

The second adjustment that EPA makes to the car curve to create the light truck curve is for towing and hauling capability. To accommodate towing and hauling, EPA increases towing allowance linearly from 0-63 gpm for light trucks with footprints between 45 and 70 square feet on an all-ICEV curve. However, EPA assumes that all light trucks need to be able to haul and tow and therefore applies the allowance across the board . Not every vehicle classified as a light truck needs to tow or haul significant amounts of cargo. The vehicles that do need to tow or haul may only do so occasionally, and some may never need to.[19] The 63 gpm offset for the all-ICEV light truck curve should be lowered to reflect the data on usage of towing and hauling capabilities by light truck owners.

Medium-duty pickups need to electrify faster

The proposed standards for medium-duty vehicles (MDVs) are premised on 46% BEV adoption by MY 2032 (FR 29331), well below the 67% BEV penetration anticipated for LDVs. EPA expects MDV electrification to be driven by vans, 98% of which would be electric by MY 2032. Pickups, which account for almost two-thirds of MDV sales (DRIA Table 3-1), would reach only 19% electrification. EPA should adjust penetration estimates for these large pickups.

It is not clear from the proposal or DRIA how EPA arrived at such low medium-duty pickup electrification projections. These projections stand in sharp contrast with those for light-duty pickup electrification, which would reach 68% in 2032 (FR 29329 Table 80). Not long ago, full-size light-duty pickups were viewed as unlikely candidates for electrification. That concern was not borne out, as evidenced by several recent popular releases. EPA projects an average footprint of 69.1 square feet for BEV pickups in MY 2032 (DRIA 1-14), placing the average BEV pickup well into the full-size pickup range.

[18] https://www.epa.gov/automotive-trends

[19] https://www.thedrive.com/news/26907/you-dont-need-a-full-size-pickup-truck-you-need-a-cowboy-costume

Medium-duty BEV pickups are not yet on the market, and skepticism regarding their imminent arrival is common, based largely on high towing requirements common for these trucks. Yet at this juncture, it is reasonable to anticipate that their electrification potential would approach that of full-size light-duty pickups. EVs excel at providing the torque needed for towing, so the challenge for electric medium-duty pickups is not capability to tow but rather towing range, i.e., battery capacity. Even vehicles requiring high towing capacity may not need to tow their loads for extended distances; many medium-duty pickups are engaged in mining, construction, and utility work, where towing needs may be for work on site, rather than for accessing the site. EPA should segment medium-duty pickups by application and by towing and range requirements and assess their electrification potential accordingly.

California's Advanced Clean Trucks program requires 40% of Class 2b-3 pickups to be ZEVs in 2032. After considering the various applications of these trucks in California, over 70% of which were for personal use, and following developments in the electric truck market, CARB decided to accelerate requirements for Class 2b-3 pickups to start in MY 2024 instead of waiting until 2027 as initially proposed.[20] California's Advanced Clean Fleet program also will require about 40% of pickups to be ZEVs by 2032 under the EV milestone option.[21]

Moreover, EPA's heavy-duty Phase 3 proposal finds electrification potential rates for all categories of heavy-duty trucks, ranging from Class 4 versions of medium-duty pickups to tow trucks to long haul tractors, higher than the 19% projected for medium-duty pickups in MY 2032. This is further evidence that EPA should consider in more detail the actual requirements for medium-duty pickups and the extent to which BEVs might meet those needs.

Finally, for those medium-duty pickups that must tow heavy loads long distances, both plug-in hybrid electric vehicles (PHEVs) and fuel cell vehicles (FCEVs) should be considered. As EPA notes, PHEVs may be well suited to Class 2b pickups (DRIA 3-11). We urge EPA to incorporate in the final rule findings from contract work now underway to investigate the potential for PHEVs in pickup applications (FR 29298), including by adding PHEVs as a compliance option and increasing the stringency of MDV standards to the extent appropriate. Similarly, EPA should include an analysis of fuel cells for high-mileage, high-towing pickups. EPA's heavy-duty Phase 3 proposal projected that 25% of long haul tractors could be FCEVs by MY 2032, indicating confidence that any infrastructure and cost challenges associated with FCEVs can be addressed by then.

[20] https://ww3.arb.ca.gov/regact/2019/act2019/fsor.pdf
[21] https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/fsor.pdf Table IV-8

The standards should take full advantage of the potential for medium-duty ICEV efficiency gains

The expected GHG emissions trajectory of medium-duty ICEVs under the proposal is essentially flat. Backing out ICEV emissions rates from the projected achieved values for all vehicles (FR 29328, Table 26) together with projected BEV adoption rates (FR 29331), one finds that ICE pickup emissions would decline by about 2% per year and ICE vans' emissions would increase by 2% per year under the proposal. ICE MDVs overall would improve at 1% per year. As in the case of light-duty ICEVs, the backsliding of medium-duty ICE van emissions would be unnecessary and counterproductive. These projections may indicate unrealistic assumptions in EPA's compliance modeling; otherwise, the standard should be tightened to prevent this outcome.

ICE pickup emissions rates would decline under the proposed standards at a rate close to the required reduction rate in the Phase 2 heavy-duty rule (2.5% per year for heavy-duty pickups and vans).[22] However, if MDV pickups are to reach only 19% EV share in 2032 as EPA projects, much more needs to be done to promote ICE pickup efficiency gains as plans take shape to zero out transportation GHG emissions entirely over the next two decades. EPA acknowledges that hybrids (as well as PHEVs) have high potential for these vehicles (DRIA p.1-20) yet provides no explanation of why substantial adoption is not feasible or desirable. The stringency of the standards should be set to promote adoption of the most efficient ICE technology until any obstacles to electrification can be overcome.

EPA's assessment of the potential for medium-duty ICEV improvements in the proposal is perfunctory at best. The proposal states: "The feasibility of the 2027-2032 GHG standards is based primarily upon an assessment of the potential for a steady increase in MDV electrification, primarily within the van segment" (DRIA p.1-21). For medium-duty ICEV pickup emissions reduction opportunities, the reader is referred to the discussion of efficiency technologies in the 2016 heavy-duty Phase 2 rulemaking (DRIA p.3-12). While stating that "[t]he agency still expects to see additional penetration of many of these technologies" (DRIA p.1-20), EPA provides no account of the extent to which they could cost-effectively reduce medium-duty pickup emissions rates and how this relates to the projected 2% per year improvement project for these vehicles.

Credit issues should be addressed further in the final rule

EPA states that MDVs are a separate averaging set and credits are not allowed to be transferred between MDVs and LDVs due to differences in the structure of the standards for these two vehicle categories and manufacturer competitiveness issues (FR 29245). ACEEE

[22] Federal Register, Vol. 81, No. 206. October 25, 2016. Table VI-7.

strongly supports this decision and believes that keeping the categories separate will help to avoid unintended consequences.

ACEEE also supports EPA's proposal to remove the BEV, PHEV, and FCEV multipliers for MY 2027 (FR 29244), especially in view of the changing environment for the electrification of MDVs, including availability of federal purchase incentives. However, leaving in place advanced technology multipliers through MY 2026 could severely erode the real-world emissions reductions of the proposed standards. In particular, we find that if advanced technology credits were to retain the 5-year life assigned under the Phase 2 rule, credits generated by BEV vans sold in MY 2024-2026 would eliminate the need for manufacturers to produce any of the BEV pickup sales that EPA has projected for MY 2027-2031.[23] Alternatively, these credits could be used to offset the modest medium-duty ICE pickup efficiency gains EPA projects for MY 2027-2031. We recommend that EPA eliminate advanced technology multipliers for MY 2024-2026 in the final rule.

Complementary elements of EPA's LDV program should be extended to MDVs

Two other areas in which MDVs could benefit from being folded into the LDV program are compliance reporting requirements and consumer labeling. EPA's compliance report for heavy-duty vehicles[24] does not include heavy-duty pickups and vans, and we are not aware of any other source for this data. This situation has hampered our ability to make informed judgments on the current proposal for MDV standards, as data on matters such as compliance credit balances and rates of ICEV technology adoption are not currently available for these vehicles. These vehicles should be incorporated into EPA's Trends report no later than MY 2027.

MDVs also should have a consumer label, and the label should provide a basis for comparison with LDVs. This could be an important element, along with the reclassification of vehicles for purposes of the standards, of EPA's effort to discourage the upward creep in size and performance attributes of light-duty trucks. California began labeling MDVs on January 1, 2021.[25] While the MDV scores are not directly comparable to California's LDV scores, CARB provides a comparison table with LDV GHG scores. We urge EPA to create a meaningful consumer label for MDVs in time for MY 2027.

[23] Our calculation assumes that BEV van sales share doubles each year after MY 2023 to reach the 35% share projected by EPA in MY 2027 (FR 29331) and that total van and pickup sales volumes remain approximately at MY 2020 levels (DRIA Table 3-1 p.3-10).
[24] https://www.epa.gov/system/files/documents/2023-05/420r22028A.pdf
[25] https://ww2.arb.ca.gov/our-work/programs/greenhouse-gas-standards-medium-and-heavy-duty-engines-and-vehicles/ep-label

Recommendations

We commend the work that EPA has done to put forward a strong proposal to deliver on cleaner vehicles and air. ACEEE supports the changes to the emissions curves and credit programs, which will improve stringency and remove distortions caused by previous standards. We also commend EPA's proposed changes to the cutpoints in the light truck curve and the attempts at limiting the distortionary effects of the standards on vehicle footprint. Finally, ACEEE supports EPA's proposal to remove the BEV, PHEV, and FCEV multipliers for MY 2027 for medium-duty vehicles.

However, there are still ways the proposal can be improved. ACEEE makes the following recommendations for the final rule.

For the light-duty portion of the rule:

1. EPA should set MY 2027-2032 standards that drive emissions reductions beyond what the market would deliver. EPA should adopt Alternative 1 for the final standards to reflect EV penetration impacts from IIJA and IRA, as well as manufacturer EV commitments
2. The final standards should push continued improvements in ICEVs by
    a. Reflecting real-world trends in vehicle hybridization
    b. Incorporating other mature ICEV emissions reduction technologies
3. EPA should implement upstream accounting in the final rule to encourage greater BEV efficiency
4. EPA should flatten the car and light truck curves to accurately reflect expected BEV penetration in accordance with its own analysis
5. EPA should lower the offsets in the light truck curve
    a. The AWD offset should be reduced to account for the share of light trucks with AWD capabilities
    b. The hauling and towing offset for the all-ICEV light truck curve should be lowered to reflect the data on usage of towing and hauling capabilities by light truck owners.

For the medium-duty portion of the rule:

1. EPA should segment medium-duty pickups by application and by towing and range requirements, and assess their electrification potential accordingly
2. EPA should incorporate findings from research underway to investigate the potential for PHEVs in pickup applications
    a. PHEVs should be added as a compliance option and the stringency of MDV standards should be increased to the extent appropriate
3. EPA should include an analysis of fuel cells for high-mile, high-towing pickups

4. The stringency of the standards should be set to promote adoption of the most efficient ICE technology until the obstacles to MDV pickup electrification can be overcome
5. EPA should eliminate advanced technology multipliers for MY 2024-2026 in the final rule
6. EPA should incorporate MDVs into EPA's Trends report no later than MY 2027
7. EPA should create a meaningful consumer label for MDVs in time for MY 2027.

It is critical that EPA set the strongest standards to maximize GHG emissions reductions and deliver on cleaner air and fuel savings. The above recommendations will ensure we have standards that reflect the changing EV landscape, while continuing to push EV penetration and ICEV improvements. The recommendations will ensure the next round of light-duty standards reduce emissions from all vehicles. The IRA and IIJA bills have accelerated transportation electrification in the United States and this rule should build upon those investments and deliver the strongest emissions reductions possible. ACEEE thanks EPA for the opportunity to contribute comments and improve the final rule.