Environmental Defense Fund

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November 13, 2023

Re: Comments of EDF on Adoption of the Advanced Clean Trucks and Advanced Clean Cars II Regulations in New Mexico

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I. *Introduction*

EDF thanks the New Mexico Environment Department for its consideration of these brief comments and applauds the state for its consideration of the Advanced Clean Trucks (ACT) and Advanced Clean Cars II (ACCII). These regulations are both key components of a policy landscape designed to protect public health and the environment, help mitigate climate change, and stimulate the economy. EDF supports swift promulgation of standards that will secure key vehicle emission reductions and measures that put the state on a pathway to 100% new zero-emission vehicles by 2035. These standards do just that – and New Mexico has a clear and non-negotiable opportunity to achieve near-term reductions and associated health and economic benefits that come from zero-emission vehicles. Together, these regulations will greatly increase the number of zero-emission vehicles available for sale in the state, ensuring a better, more equitable future across the state.

Transitioning light-, medium-, and heavy-duty vehicles to zero-emission alternatives is a critical component of a just transition to a low-emissions future. In New Mexico, greenhouse gas emissions from transportation are second only to the extraction of and production of oil and gas - meaning that decarbonizing the transportation sector is critical to achieving Governor Grisham's goal of a 45% reduction in greenhouse gas emissions relative to 2005 levels. While passenger vehicles make up the biggest portion of emissions from the on-road transportation sector, it is also vitally important for the state to transition the heavier vehicles driving in the state to zero-emission alternatives. Despite making up only approximately 10% of vehicles on the road in Mexico, medium- and heavy-duty vehicles are responsible for nearly 35% of climate-worsening carbon dioxide emissions in New Mexico's transportation sector – in addition to contributing 64% of nitrogen oxide (NOx) pollution and 58 percent of particulate matter.[1] NOx and particulate matter, as well as the ozone that NOx emissions heavily contribute to the formation of, result in a host of significant and harmful health impacts. Importantly, this pollution is not evenly distributed throughout the state – health-harming, localized pollution disproportionately impacts certain communities across the state – typically low- and moderate-income and communities of color – that are more likely to reside near key sources of transportation pollution, including freight corridors, bus depots, warehouses and other truck-attracting facilities. Exposure to this pollution contributes to heightened levels of respiratory and

[1] Claire Lang-Ree, *It's Time for Clean Vehicles in New Mexico,* Natural Resources Defense Council, https://www.nrdc.org/bio/claire-lang-ree/its-time-clean-vehicles-new-mexico#:~:text=Despite%20making%20up%20only%2010,of%20transportation%20greenhouse%20gas%20emissions.

cardiovascular disease; given the continued prevalence of COVID-19, it is also important to note that comorbidities may exacerbate the severity of the virus for those individuals.[2]

To put a finer point on it, allowing transportation and freight to continue with the status quo will have a detrimental and significant impact on health in communities, particularly those that live in close proximity to highways and other major sources of transportation pollution. Indeed, a new national study estimates that more than 2,600 people die prematurely every year as a result of the health burden just from the medium- and heavy-duty vehicle pollution on our roads and highways.[3] Given that light-duty vehicles are responsible for a large proportion of NOx and particulate matter in the United States – 33 percent and 30 percent of all on-road transportation emissions, respectively – it is to be expected that significantly reducing emissions in this market segment will also be critical. As such, it is appropriate for New Mexico to take action in order to start mitigating the impact of all vehicles through ACT and ACCII – and ensure generally that environmental justice communities are prioritized for infrastructure and vehicle deployment so that the near-term public health and community benefits can be maximized.

In these comments, EDF will address the following points:

- New Mexico should adopt both the Low-Emission Vehicle (LEV) and Zero-Emission Vehicle (ZEV) components of the ACCII rule through 2035;
- The economics of a transition to zero-emission vehicles are favorable;
- Model availability has grown exponentially in recent years and will continue to expand to meet a clear consumer preference for zero-emission vehicles; and
- Flexibilities and a gradual ramp-up cut against concerns raised regarding feasibility .

II. *In order to maximize health and climate benefits, New Mexico should adopt all ACCII components through 2035.*

The proposal from the New Mexico Department of Environment currently proposes to adopt the LEV portion of ACCII through model year 2035, replicating the full extent of California's regulation. However, the Department is only committing to adopt the ZEV portion through model year 2032. Simply put, this is a missed opportunity. A recent ERM report analyzing the benefits of a full ACCII rule clearly corroborates this – with a clean grid, ACCII is estimated to reduce LDV fleet NOx and PM emissions by 93 and 92 percent, respectively, compared to a business as usual scenario. The resulting health benefits are clear, as scores of premature deaths, hospital visits, and minor ailments are avoided – resulting in $1.1 billion dollars in monetized health benefits in the state. Moreover, the full rule, in combination with a clean grid, will result in an 84 percent reduction in climate-warming pollution compared to the baseline.[4]

While any version of ACCII is a clear step in the right direction, stopping abruptly – and without a clear rationale – in model year 2032 will leave massive benefits on the table. Research done by ERM clearly demonstrates the gap in benefits between stopping in 2032 and adopting the full rule through 2035. In that state, the full rule achieved a greenhouse gas and criteria pollution reduction of

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[2] Andrea Pozzer, *et al., Regional and global contributions of air pollution to risk of death from COVID-19,* 116 Cardiovascular Research 2247 (Dec. 1, 2020). https://academic.oup.com/cardiovascres/article/116/14/2247/5940460.

[3] Environmental Defense Fund, *Clean Trucks, Clean Air, American Jobs* (Mar. 2021), https://www.edf.org/sites/default/files/2021-03/HD_ZEV_White_Paper.pdf.

[4] NRDC, Sierra Club, and WRA, *New Mexico Advanced Clean Cars II Program,* prepared by ERM (Jul. 2023), https://www.erm.com/globalassets/nm_acc_ii_report_final_12jul23.pdf.

approximately 94% compared to the baseline, while ending in 2032 was projected to result in less than 80% reductions. Increased NOx and particulate matter reductions with a full rule was estimated to result in well over 10,000 additional avoided illnesses between 2027 and 2050. All told, adopting the full rule would have provided additional public health and climate benefits to the tune of more than $10 billion.[5] It is logical to assume that similar trends would come to fruition in New Mexico as well. EDF therefore urges adoption of the full rule.

In the alternative, if the Department decides to move forward as planned, the regulation should build in a mechanism to re-assess the market no later than 2029 and determine whether it is appropriate, with the full input of stakeholders, to adopt the remaining years of the program.

III. *Transitioning to zero-emission vehicles offers clear cost benefits.*

Zero-emission vehicles, because of lower fuel and maintenance costs, offer clear economic benefits over the lifetime of the vehicle. In comparing a selection of EVs to similar gasoline vehicles, a recent study done by WSP found that over ten years, EV owners stood to save up to $18,440 – taking into account vehicle purchase costs, home charging stations, registration, maintenance, insurance, and fuel costs.[6] Importantly, this did not take into account state incentives for mitigating the cost of EVs and charging stations; programs like those from New Mexico's utilities can further move the needle in a positive direction.

The case is similar for larger vehicles. Per an ICCT report, even the total cost of ownership of battery electric long-haul trucks – one of the toughest nuts to crack – is likely to be favorable by 2030 compared to a diesel alternative.[7] While upfront cost is still currently higher than the internal combustion engine alternative, upfront price parity is approaching more and more rapidly. A Roush study found that almost all trucks and buses will reach this point in 2027 (with the exception of shuttle buses, which are close to price parity on that timeline).[8] Importantly, these assessments are not considering Inflation Reduction Act tax credits that reduce costs for these vehicles: up to $40,000 for each commercial zero-emission vehicle and up to $100,000 for charging infrastructure.[9]

IV. *Increasing model availability means supply will meet clear consumer demand for EVs.*

In recent years, there has been an exponential growth in model availability designed to meet a variety of consumer expectations. In the light-duty space, a recent ERM report found that the number of electric vehicle models is expected to dramatically increase in the coming years: by 2025, there will be a projected 197 models, with over 58 of these models launching between model years 2022 and

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[5] ERM, *The Benefits of the Advanced Clean Cars II Standard in New Mexico: Fact Sheet,* Prepared for NRDC and WRA (Oct. 2023), https://www.erm.com/globalassets/documents/reports/comparison_nm_accii_fact_sheet_final_2023.pdf.

[6] WSP, *Electric Vehicle Total Cost of Ownership Analysis,* prepared for EDF (Jul. 2023), https://www.edf.org/sites/default/files/2023-07/WSP%20Total%20Cost%20of%20Ownership%20Analysis%20July%202023.pdf.

[7] Hussein Basma, *et al., Total Cost of Ownership of Alternative Powertrain Technologies for Class 8 Long-Haul Trucks in the United States,* ICCT, https://theicct.org/wp-content/uploads/2023/04/tco-alt-powertrain-long-haul-trucks-us-apr23.pdf.

[8] Environmental Defense Fund, *New Study Finds Rapidly Declining Costs for Zero-Emitting Freight Trucks and Buses,* https://www.edf.org/media/new-study-finds-rapidly-declining-costs-zero-emitting-freight-trucks-and-buses.

[9] Environmental Defense Fund, *Inflation Reduction Act gives truck electrification a dose of adrenaline,* https://blogs.edf.org/energyexchange/2022/09/12/inflation-reduction-act-gives-truck-electrification-a-dose-of-adrenaline/.

2025. And, because of IRA tax incentives, there will be five light-duty EV models available with an MSRP of under $30,000 by the end of 2023, and 15 models available for less than $40,000.[10] This will be met by sustained growth in manufacturing investment – indeed, by 2026, US manufacturing facilities will be able to produce an estimated 4.3 million new electric passenger vehicles each year. This is about 33 percent of all new vehicles sold in 2022; this trend is expected to continue.[11]

There are over 200 models of zero-emission MHD vehicles available from 60 manufacturers, including 24 heavy-duty trucks, the largest size.[12] Though models with ranges greater than 630 miles are expected in the coming years to accommodate long-haul vehicles,[13] it is important to note that range anxiety may not be as consequential issue as often perceived. More than 80 percent of heavy-duty trucks operate less than 100 miles from their base; even those vehicles that travel the largest fraction of miles per year have mileage around 200 miles a day, assuming they are operational 250 work days a year.[14] This is well within the range of today's trucks – for example, Volvo's new model VNR electric truck gets 275 miles per charge, a significant improvement compared to the previous 150 mile range.[15] These mileage figures corroborate data collected by the Large Entity Reporting rule in California, often adopted with the ACT in other states, which found that a third of tractor trucks charged at home bases, over half had a predictable usage pattern, and about forty percent traveled fewer than 200 miles a day.[16] While the proof is in the pudding, legacy manufacturers have made bold commitments to transition their vehicle production to zero-emission: Volvo and Daimler which make up 70% of Class 7-8 truck sales, have joined Navistar, Paccar, and Walmart in committing to zero-emission sales by 2040 – beyond the requirements set forth in ACT.[17]

Despite opposition claims to the contrary, any documented decrease in EV sales is not indicative of larger trends. EV sales are robust, with sales projected to push past 1 million this year – more than twice the number sold in 2021. And, while total US vehicle sales dropped by 8 percent, the market for electric cars grew by 65 percent over the same period. As the market reaches economies of scale

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[10] Environmental Defense Fund, Electric Vehicle Market Update (April 2023), prepared by ERM https://www.edf.org/sites/default/files/2023-05/Electric%20Vehicle%20Market%20Update%20April%202023.pdf

[11] *Id.*

[12] Baha M. Al-Alawi, *Zeroing in on Zero-Emission Trucks,* CALSTART (Jan. 2022), https://calstart.org/wp-content/uploads/2022/02/ZIO-ZETs-Report_Updated-Final-II.pdf

[13] Zero Emission Transportation Association, *Medium- and Heavy-Duty Electrification: Weighing the Opportunities and Barriers to Zero-Emission Fleets* (Jan. 2022), https://fs.hubspotusercontent00.net/hubfs/8829857/ZETA-WP-MHDV-Electrification_Opportunities-and-Barriers_Final3.pdf

[14] Union of Concerned Scientists, *Ready for Work: Now is the Time for Heavy-Duty Electric Vehicles,* https://www.ucsusa.org/sites/default/files/2019-12/ReadyforWorkFullReport.pdf.

[15] FleetOwner, *Volvo Trucks launches VNR Electric with longer range,* https://www.fleetowner.com/emissions-efficiency/electric-vehicles/article/21214398/volvo-trucks-launches-vnr-electric-with-longer-range.

[16] California Air Resources Board, *Large Entity Fleet Reporting: Statewide Aggregated Data,* https://ww2.arb.ca.gov/sites/default/files/2022-02/Large_Entity_Reporting_Aggregated_Data_ADA.pdf

[17] European Automobile Manufacturers Association and Potsdam Institute for Climate Impact Research, *Joint Statement – The Transition to Zero-Emission Road Freight Transport,* https://www.acea.auto/files/acea-pik-joint-statement-the-transition-to-zero-emission-road-freight-trans.pdf; Jason Mathers, *Walmart commits to 100% zero-emission trucks by 2040, signaling electric is the future,* Environmental Defense Fund, https://blogs.edf.org/energyexchange/2020/09/22/walmart-commits-to-100-zero-emission-trucks-by-2040-signaling-electric-is-the-future/.

– which will be bolstered by regulations like ACCII – upfront prices will continue to come down, making EVs more and more attractive to consumers.

Fleets operating medium- and heavy-duty vehicles are also embracing the benefits of zero-emission vehicles. As an example, Amazon plans to have 100,000 electric trucks on the road by 2030, building on the 10,000 it has already deployed. In addition, there are over 140,000 pending orders for commercial zero-emission trucks, and large retailers and energy companies alike – including Nestle, Ikea, Etsy, Siemens, and Amply have all publicly supported adoption of the ACT. As with the ACCII, manufacturers are much more likely to make zero-emission products available in a state that has a regulation setting sales targets in place – making it more likely that supply will meet clear demand.

V. *Flexibilities built into the rule and a gradual ramp up further demonstrates the feasibility of these rules.*

An oft-used argument is that a lack of infrastructure availability will prevent the achievement of key targets in ACT and ACCII. While this is not an invalid concern, and careful analysis will need to be conducted in order to ensure agencies, utilities, and fleets are coordinating to ensure infrastructure is available in sufficient number and of appropriate type, such planning and deployment is eminently feasible.

In the passenger vehicle context, significant and ongoing investments will ensure growth of electric vehicle charging stations at levels necessary to support ACCII. A July 2023 analysis by WSP found that more than $21.5 billion in investments have been announced since 2021, which will result in the deployment of over 800,000 new charger ports by 2030—increasing total existing ports fivefold.[18] And this analysis is very likely an understatement, as it relies on only the most concrete investment announcements and awarded funding.[19] It does not fully include, for example, the billions of dollars in state and federal incentives that are dedicated to charging infrastructure but not yet awarded[20] nor does it include the tens of billions of dollars that are available to support charging buildout through major federal funding programs.[21]

As discussed previously, most trucks charge at their home base, and with ample lead time before the rule's effective date, fleet operators can install and use a variety of charging infrastructure solutions. Most of the smaller Class 2b-3 vehicles can charge using the same infrastructure as light-duty vehicles, including the vast and growing public charging network, and often travel under 100 miles per day. Adoption of the ACT rule also provides market certainty and demand projection around which utilities can prepare for service upgrades for fleets. In short, these rules will provide the market certainty needed to plan for infrastructure deployment.

Additionally, and critically, these rules are not designed to go from 0 to 100 in the first year. A gradual ramp-up in targets means that infrastructure requirements can be met relatively easily in the

[18] WSP, U.S. Public Electric Vehicle (EV) Charging Infrastructure Deployment, prepared for EDF (Jul. 2023) at 2.
[19] Id. at 2, 11, 18, 20.
[20] Id. at 20.
[21] In addition to dedicated EV charging programs like the National Electric Vehicle Infrastructure program, the Infrastructure Investment and Jobs Act includes other programs with funding authorizations that could be used in part to support charging infrastructure. Those programs include the Congestion Mitigation & Air Quality Improvement Program, National Highway Performance Program, and the Surface Transportation Block Grant Program, among others.

early years, with effective planning making achievement of longer-term targets feasible. Both the ACT and ACCII also offer built-in compliance flexibilities that allow even unexpected market shifts to be accommodated. In ACCII, early compliance credits, environmental justice credits, and historical credits – in addition to the ability to bank and trade credits – provide flexibility to auto manufacturers, especially in the early years of the program. Given those flexibilities, the ZEV sales target in the first eligible year of the program—43 percent of new sales in MY 2027—is attainable. Similarly, in ACT, credit banking and trading are available between manufacturers and vehicle classes. More sales in one category may offset sales in another, and credits are generally weighted by size, where a larger vehicle earns more credits. The bottom line is that sufficient flexibilities are provided to accommodate any challenges within a particular market segment.

VI. *Conclusion*

Given the health and climate burdens that New Mexico's air pollution creates, a decarbonization pathway that dramatically reduces harmful emissions in the near-term is a moral imperative. California's ACT and ACCII rules work together to migrate the trucking industry in a zero-emissions direction while reducing the harm to public health caused by trucks that will not be able to go emissions-free in the near term – saving thousands of lives. Both rules have been shown, through rigorous analysis, to be extremely beneficial to populations and feasible for industry. We encourage New Mexico's Environment Department to align its approach with California's successful work in these areas and adopt both regulations in full.

Respectfully submitted,

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