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Attention: Docket No. NHTSA–2021–0053

Re.: Corporate Average Fuel Economy Standards for Model Years 2024–2026 Passenger Cars and Light Trucks, 86 Fed. Reg. 49602 (September 3, 2021)

Environmental Defense Fund (EDF) respectfully submits the following comments in response to the National Highway Traffic Safety Administration's ("NHTSA") Proposed Rule, *Corporate Average Fuel Economy Standards for Model Years 2024–2026 Passenger Cars and Light Trucks*, 86 Fed. Reg. 49602 (September 3, 2021) ("Proposal" or "Proposed Standards"). EDF supports the Agency's proposal to strengthen the fuel economy standards that were weakened by the previous administration.

I. EDF urges NHTSA to adopt standards aligned with the Environmental Protection Agency's ("EPA") proposed standards

EDF urges NHTSA to finalize standards that are coordinated and aligned with EPA's final revised 2023 and later model year light-duty vehicle greenhouse gas emissions standards, including incorporating EDF's proposed recommendations on those standards.[1] NHTSA has consistently understood that its obligation to consider "other motor vehicle standards of the Government" entails the obligation to consider EPA's emission standards.[2] In light of that obligation, and the fact that EPA likely will have finalized MY 2023-2026 standards prior to NHTSA taking final action on this proposal, the two agencies' programs can be aligned to the greatest degree possible.

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[1] EDF incorporates by reference our comments to EPA. Environmental Defense Fund comments on EPA's Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards (September 27, 2021) EPA-HQ-OAR-2021-0208-0688.

[2] *See, e.g.* 43 Fed. Reg. 11,995, 12,009-10 (Mar. 23, 1978); 53 Fed. Reg. 11,074, 11,077-78 (Apr. 5, 1988); 56 Fed. Reg. 13,773, 13,777-79 (Apr. 4, 1991); 68 Fed. Reg. 16,868, 16,893-96 (Apr. 7, 2003); 71 Fed. Reg. 17,566, 17,639-43 (Apr. 6, 2006); 77 Fed. Reg. 62624, 62669 (Oct. 15, 2012); 85 Fed. Reg. 24174, 25137 (Apr. 30, 2020).

II. NHTSA must adopt standards consistent with the Agency's "Maximum Feasible" mandate under EPCA

Standards Must Be "Maximum Feasible" under EPCA.

In response to the 1973 energy crisis, Congress enacted the Energy Policy and Conservation Act ("EPCA") as "an omnibus measure that include[d] a myriad of provisions pertaining to the production, stockpiling, conservation, and pricing of energy resources." *Common Cause v. Dep't of Energy*, 702 F.2d 245, 246 (D.C. Cir. 1983); *see* Pub. L. No. 94-163, 89 Stat. 871 (1975) . EPCA's fuel-economy chapter provided for reductions in oil consumption through "improved energy efficiency of motor vehicles," EPCA, § 2(5), 89 Stat. at 874, *codified as amended at* 42 U.S.C. § 6201(5), by way of a corporate average fuel-economy standard: "a performance standard which specifies a minimum level of average fuel economy" that each automaker's fleet must attain, *Id.* § 301, 89 Stat. at 902, *codified at* 15 U.S.C. § 2001(7) (1976), *recodified as amended at* 49 U.S.C. § 32901(a)(6).[3]

EPCA requires NHTSA to establish standards that are the "maximum feasible" average fuel economy levels that manufacturers can achieve in a given model year. 49 U.S.C. § 32902(a). When setting "maximum feasible standards" NHTSA must consider four factors: "technological feasibility, economic practicability, the effect of other motor vehicle standards of the Government on fuel economy, and the need of the United States to conserve energy." 49 U.S.C. § 32902(f).

Among these four factors, NHTSA must prioritize energy conservation. In enacting EPCA, Congress explicitly stated that key mandates of the Act were "to conserve energy supplies through energy conservation programs," and "to provide for improved energy efficiency of motor vehicles." Pub. L. No. 94-163, §2, 89 Stat. 871 (1975); *see also* Pub. L. No. 110-140, 121 Stat. 1492 (2007). Congress strengthened and expanded this energy conservation program in the Energy Independence and Security Act of 2007 ("EISA") which had the stated purpose to "move the United States toward greater independence and security, . . . to protect consumers, [and] to increase the efficiency of . . . vehicles." Pub. L. No. 110-140, 121 Stat. 1492 (2007). Lawmakers intended that Corporate Average Fuel Economy ("CAFE") standards become increasingly and substantially more stringent over time so that gasoline and diesel-powered vehicles conserve energy at the rate that is maximum feasible.

NHTSA's adoption of standards that are "maximum feasible" is also consistent with the goals of amendments to EPCA. Upon passing EISA, which amended provisions of EPCA, Congress explicitly stated that its intent was to "increase the efficiency of products, buildings, and vehicles." Pub. L. No. 110-140, 121 Stat. 1492 (2007); *see also, Memorandum of the President*, 74 Fed. Reg. 4907 (Jan. 26, 2009) (stating that energy independence requires "annual fuel economy increases for automobiles), *Presidential Memorandum*, 75 Fed. Reg. 29,399 (May 21, 2010). In passing EISA, lawmakers also envisioned that energy conservation required increasingly stringent standards: "[r]educing gasoline consumption, in part by strengthening CAFE standards, addresses America's need for energy security, and must be a part of our

[3] Section 301 of EPCA was originally codified at 15 U.S.C. §§ 2001-2012 (1976), and later reenacted as Chapter 329 of Title 49 of the U.S. Code.

deliberations on energy and environmental policy." *Review of the Administration's Energy Proposals for the Transportation Sector: Hearing Before the Subcommittee on Energy and Air Quality of the H. Committee on Energy and Commerce*, 110th Cong. 4-5 (2007) at 3 (statement of Rep. Hastert, Ill.).

In the current proposal NHTSA "acknowledges the priority of energy conservation," consistent with the agency's statutory authority from EPCA's language and congressional intent. 86 Fed. Reg. at 49,621.

Standards Aligned with Those EDF Suggested EPA Adopt are Technologically Feasible.

Technological feasibility is interpreted as whether a particular method of improving fuel economy "will be available for commercial application in the model year" of the standard. *Ctr. for Auto Safety v. NHTSA*, 793 F.2d 1322, 1325 n.12 (D.C. Cir. 1986). In discussing how "feasibility" should be interpreted in other provisions of EPCA, Congress stated that "[t]he term feasibility is used in the strict sense, namely 'capable of being carried out.'" H.R. Rep. No. 94-700, at 172; *see also, Ctr. for Biological Diversity v. NHTSA*, 538 F.3d 1172, 1194 (9th Cir, 2008).

The agency is not limited by what technology is currently available at the time of the rulemaking. *Ctr. for Auto Safety*, 793 F.2d at 1325 n.12. In determining "technologically feasible," Congress intended NHTSA to set technology-forcing standards to achieve maximum feasible fuel economy. "Congress created mandatory vehicle fuel economy standards, intended to be technology forcing, with the recognition that 'market forces...may not be strong enough to bring about the necessary fuel conservation which a national energy policy demands." *Ctr. for Auto Safety*, 793 F.2d at 1339, *citing* S. Rep. No. 179, 94th Cong., 1st Sess. 2 (1975), U.S.C.C.A.N. 1975 at 9.

The technological feasibility of NHTSA setting more protective standards is supported by the agency's previous determination that comparable 2012 standards were technologically feasible. In the 2012 rulemaking, the agency determined that the standards were technologically feasible as there were "a wide range of technologies already available" to meet the standards and that there would be continued "development" and "advances." 77 Fed. Reg. at 62,631. NHTSA previously found that all of the alternatives, including more protective alternatives than the rule adopted, were "technologically feasible, in that they could be achieved based on the existence or projected future existence of technologies." 77 Fed. Reg. at 63,037. The technological feasibility of stronger standards is also supported by the fact that many manufacturers, after the SAFE2 rule, did not change "significantly" from product plans established in response to the 2012 standards. 86 Fed. Reg. at 49,610.

The technological feasibility of the comparable 2012 standards was reaffirmed by NHTSA, EPA, and the California Air Resources Board's 2016 Technical Assessment Report that analyzed the 2012 standards.[4] The report found that the "cost, effectiveness, and implementation feasibility"

[4] Environmental Protection Agency, National Highway Traffic Safety Administration, California Air Resources Board, Draft Technical Assessment Report: Midterm Evaluation of Light-Duty Vehicle

of the technologies identified in the 2012 rulemaking remained "generally consistent" with the 2012 findings.[5] The report also found that the penetration of these technologies had "proceeded steadily" since the 2012 findings and that "several new technologies or unforeseen application of technologies" were being developed.[6]

In the present proposal NHTSA, consistent with the agency's mandate, determined that more protective standards are technologically feasible. NHTSA found that the agency is "certain that sufficient technology exists to meet the standards" and that no "significant additional technology application" would be required. 86 Fed. Reg. at 49,792, 49,804.

NHTSA also noted correctly that the California Framework agreements support the technological feasibility of the standards, as Framework manufactures agreed to stronger standards. Five major manufacturers (BMW, Ford, Honda, Volvo, and Volkswagen), representing a sizeable share of the new-vehicle market, have signed voluntary agreements with the State of California committing themselves to reducing GHG emissions from their national fleets in MYs 2021-2026 using technologies that, for the most part, also improve fuel economy.[7] NHTSA "interprets these agreements as evidence that the participating companies believe that applying that additional technology is practicable, because for-profit companies can likely be relied upon to make decisions that maximize profit." 86 Fed. Reg. at 49,804.

Accordingly, NHTSA can and should adopt standards that meet this statutory requirement and are aligned to the greatest degree possible with the standards that EDF has advocated EPA adopt.

Standards Aligned with Those EDF Recommended EPA Adopt are Economically Practicable

"Economic practicability" refers to whether a standard is one "within the financial capability of the industry, but not so stringent as to" threaten "substantial hardship for the industry" such as significant job loss or loss of consumer choice. *See* 86 Fed. Reg. at 49,792, 49,797; 83 Fed. Reg. at 43,208; *See also Pub. Citizen v. Nat'l Highway Traffic Safety Admin.*, 848 F.2d 256, 264 (D.C. Cir. 1988).

More protective standards enhance domestic employment opportunities. A 2018 study from NRDC and Blue Green Alliance found that more than 288,000 workers at more than 1,200 U.S. factories and engineering facilities across 48 states were building the technologies that directly improve fuel economy.[8] Updated fuel economy standards have been instrumental in spurring economic recovery – rapid innovation and new vehicle content have brought additional

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Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards for Model Years 2022-2025 (Jul. 2016) (analyzing the 2012 standards, 77 Fed. Reg. 62,623 (Oct. 15, 2012).

[5] *Id* at 5-1.

[6] *Id.*

[7] California Air Resources Board, Framework Agreements on Clean Cars, https://ww2.arb.ca.gov/news/framework-agreements-clean-cars (last visited Oct. 19, 2021).

[8] NATURAL RESOURCES DEFENSE COUNCIL AND BLUE GREEN ALLIANCE, SUPPLYING INGENUITY II: U.S. SUPPLIERS OF KEY CLEAN, FUEL-EFFICIENT VEHICLE TECHNOLOGIES 3 (June 2017) (Supplying Ingenuity), https://www.nrdc.org/resources/supplying-ingenuity-ii-us-suppliers-key-clean-fuel-efficient-vehicle-technologies.

investment to expand the automotive sector and created a need for labor to manufacture and integrate technology into a new generation of vehicles.[9] A Synapse Energy Economics study found that manufacturers meeting the comparable augural 2017-2025 CAFE standards would lead to both short- and long-term employment increases in the automotive sector. Synapse projected that the augural standards would add over 100,000 jobs by 2025 and more than 250,000 jobs by 2035.[10] Synapse also found that the standards would increase GDP by $13.6 billion in 2025 and $16.1 billion in 2035.[11] Synapse's study confirms that saving consumers money at the pump, and allowing them to spend those dollars elsewhere, will lead to net job creation.[12]

Recent studies have shown that 64% of consumers rank fuel economy as extremely important or very important in considering what car to purchase, and that consumers continue to view fuel economy as the number one attribute that has room for improvement.[13] Additionally, research has shown that consumers are willing to pay more for fuel-efficient vehicles and that consumers are more willing to pay more for improvements to fuel economy than for improvements to acceleration or premium trim.[14]

The economic practicability of NHTSA setting more protective standards is also supported by the agency's previous determination that the comparable 2012 standards were economically practicable. 77 Fed. Reg. at 63,053.

In the present proposal, NHTSA determined that "higher standards" are "increasingly likely to be economically practicable," given the "almost-daily announcements by major automakers about forthcoming new high-fuel-economy vehicle models." 86 Fed. Reg. at 49,788. Accordingly, standards aligned with those EDF has recommended EPA adopt are economically practicable.

The Agency is Appropriately Acting to Replace the Unlawful SAFE 2 Rule

Previously in SAFE 2, NHTSA incorrectly determined "maximum feasible" fuel economy standards by failing to comply with the agency's mandate to prioritize energy conservation in the balancing of the statutory factors.[15] In considering the various factors, NHTSA cannot

[9] *Id.* at 6.
[10] Synapse Energy Economics, *Cleaner Cars and Job Creation: Macroeconomic Impacts of Federal and State Vehicle Standards* (March 27, 2018) at ES-2; *available at* http://www.synapse-energy.com/sites/default/files/Cleaner-Cars-and%20Job-Creation-17-072.pdf.
[11] *Id.*
[12] *Id*. at 16.
[13] CONSUMER REPORTS, NATIONAL FUEL ECONOMY SURVEY REPORT, 2020 RESULTS (Feb. 2021), https://advocacy.consumerreports.org/wp-content/uploads/2021/02/National-Fuel-Economy-Survey-Report-Feb-2021-FINAL.pdf.
[14] Christine Kormos & Reuven Sussman, *Auto Buyers' Valuation of Fuel Economy: A Randomized Stated Choice Experiment* (June 12, 2018), https://advocacy.consumerreports.org/wp-content/uploads/2018/06/FINAL-Kormos-and-Sussman-2018-%E2%80%93-Auto-buyers-valuation-of-fuel-economy-1.pdf.
[15] *See* Comments of Environmental Defense Fund on National Highway Traffic Safety Administration's and Environmental Protection Agency's Proposed Rule: The Safer Affordable Fuel-Efficient (SAFE)

"undermine the fundamental purpose of EPCA: energy conservation." *Ctr. for Biological Diversity v. NHTSA*, 538 F.3d 1172, 1194 (9th Cir. 2008).; *Ctr.for Auto Safety v. NHTSA*, 793 F.2d 1322, 1340 (D.C. Cir. 1986). Setting standards that gave excess weight to other factors not enumerated in the statute (e.g., consumer preference) so as to override the mandate of energy conservation, was arbitrary and capricious and contrary to the intent of Congress. *Id.*

NHTSA states that "[c]ontrary to the 2020 final rule, NHTSA recognizes that the need of the United States to conserve energy must include serious consideration of the energy security risks of continuing to consume oil, which more stringent fuel economy standards can reduce." 86 Fed. Reg. at 49,604. In the present proposal, NHTSA has appropriately balanced the factors consistent with the agency's statutory mandate.

III. Fuel economy standards that minimize petroleum use are critical for national security

Our nation's reliance on oil, both domestic and international, threatens our economic and national security. The United States currently consumes more than 20 million barrels of oil each day, which is 20 percent of the oil consumed in the entire world, and more than double the amount consumed by all European Union nations combined. [16] Nearly 70 percent of the oil we consume is used for transportation,[17] with the nation's fleet of cars and light trucks consuming nearly 60 percent of that, or 8 million barrels of oil per day.[18] The transition to a passenger vehicle fleet that does not use petroleum will help boost national security by significantly reducing our reliance on petroleum.

As NHTSA points out in the Proposal, the Council on Foreign Relations has identified six foreign policy costs that arise from U.S. consumption of imported oil.[19] Among those costs, U.S. dependence on oil harms national security by forcing military deployments to protect oil supplies abroad and entangling our nation in security policy in unstable regions. Oil dependence also undermines our economic security and leaves consumers vulnerable to oil price increases.

To successfully address economic and national security, the U.S. must significantly reduce all oil consumption, not just foreign imports. Because oil is a global market, increasing domestic

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Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks, 83 Fed. Reg. 42,986 (Aug. 24, 2018) at 71-80, Docket ID EPA-HQ-OAR-2018-0283-5775 ("EDF 2020 Rule Comments").

[16] U.S Energy Information Administration ("EIA"), International, Monthly Petroleum and other Liquids Production, https://www.eia.gov/international/data/world/petroleum-and-other-liquids/monthly-petroleum-and-other-liquids-production.

[17] EIA, Oil and Petroleum Products Explained, *https://www.eia.gov/energyexplained/oil-and-petroleum-products/data-and-statistics.php*.

[18] EIA, Annual Energy Outlook 2021 Table 7 *See* https://www.eia.gov/outlooks/aeo/data/browser/#/?id=7-AEO2021&cases=ref2021&sourcekey=0.

[19] 86 Fed. Reg. 49796 (citing Council on Foreign Relations, National Security Consequences of U.S. Oil Dependency, Independent Task Force Report No. 58, October 2006. Available at https://cdn.cfr.org/sites/default/files/report_pdf/0876093659.pdf).

production will not insulate Americans from price fluctuations.[20] Indeed, NHTSA states in the Proposal, "the substitution of domestic oil for imported oil only slightly improves U.S. oil security. Oil conservation is more effective than increased domestic oil production at improving U.S. oil security." For example, attacks on a Saudi oil refinery in September 2019 and another in March 2021 sent oil prices soaring both times, dramatically increasing gasoline and diesel prices in the U.S.[21] An issue brief from Securing America's Future Energy, states that the attack on the Saudi Aramco facility in 2019 "should act as a reminder to policymakers that disruptions in supply anywhere in the world can still impact the United States."[22] The brief concludes "that for the United States to counter the economic and national security consequences of such large-scale attacks on globally significant oil infrastructure, policymakers must adopt demand-side solutions that reduce U.S. oil dependence. These include modernized fuel economy standards and greater fuel diversity, and vehicle fleet electrification in particular."[23]

Improving the fuel economy of our nation's passenger vehicles will reduce our reliance on petroleum and give consumers more flexibility when oil prices increase. And it will increasingly benefit low-income families as many of the lowest-income U.S. households spend nearly one-fifth of their income on gasoline—three times more than the average U.S. household.[24]

The Battery Supply Chain is Strengthening, and Recycling Efforts are Increasing

NHTSA recognizes in the Proposal the importance of the lithium-ion battery supply chain in the shift toward light-duty vehicle fleet electrification, including several critical materials that make up today's batteries – lithium, cobalt, nickel, and graphite.[25] On February 25, 2021, President Biden signed Executive Order 14017, America's Supply Chains, which aims to strengthen the resilience of America's supply chains, including those for automotive batteries. As directed in the Executive Order, a report on advanced batteries, led by the Department of Energy, was submitted to the President in June 2021, and the Biden Administration subsequently announced a set of immediate actions it will take to make the U.S. more competitive in the battery market. "With the global lithium battery market expected to grow by a factor of five to ten by 2030, it is imperative that the United States invests immediately in scaling up a secure, diversified supply

[20] American Security Project, National Security and Fuel Economy How Dependence on Oil Impacts National Security, http://americansecurityproject.org/wp-content/uploads/2011/11/National-Security-and-Fuel-Economy-Presentation-11.17.11.pdf.
[21] Anthony Di Paola et al., *Attack on Saudi refinery sends oil prices soaring to 14-month high*, FORTUNE (Mar. 8, 2021), https://fortune.com/2021/03/08/attack-saudi-refinery-oil-prices-14-month-high/; Paul Davidson, *Why the Dow fell and oil prices surged Monday*, USA TODAY (SEPT. 16, 2019), https://www.usatoday.com/story/money/2019/09/16/gas-prices-attack-on-saudi-oil-production-likely-to-lift-gasoline/2340328001/.
[22] Securing American's Future Energy, Airstrikes on Abqaiq Reveal Fragility of Global Oil Supply, Demonstrate Need for United States to Reduce Oil Dependence (Sept. 2019), https://secureenergy.org/airstrikes-on-abqaiq-reveal-fragility-of-global-oil-supply-demonstrate-need-for-united-states-to-reduce-oil-dependence/.
[23] *Id.*
[24] Shruti Vaidyanathan, America Council for and Energy Efficient Economy, Analysis: Gasoline Costs Consume Nearly 20% of Some Household Budgets (May 20, 2021), https://www.aceee.org/blog-post/2021/05/analysis-gasoline-costs-consume-nearly-20-some-household-budgets
[25] 86 Fed. Reg. at 49,797.

chain for high-capacity batteries here at home. That means seizing a critical opportunity to increase domestic battery manufacturing while investing to scale the full lithium battery supply chain, including the sustainable sourcing and processing of the critical minerals used in battery production all the way through to end-of-life battery collection and recycling."[26] The Administration has committed millions of dollars toward R&D, loan programs and a 10-year government-wide plan to "urgently develop a domestic lithium battery supply chain that creates equitable clean energy economy jobs in America."[27] The Administration also recommended Congress make critical investments to grow America's ability to produce high-capacity batteries and products that use batteries, like electric vehicles and stationary storage.[28] It is crucial that each step in the battery supply chain employ sustainable and environmentally protective methods, including "sustainable sourcing and processing of the critical minerals used in battery production all the way through to end-of-life battery collection and recycling."[29]

Auto manufacturers in the U.S. are already creating demand for domestic and European mineral and battery supply. Stellantis announced earlier this year that it signed memorandums of understanding for lithium supply with geothermal brine projects in California and Germany.[30] A week later it announced another partnership with Samsung SDI to produce lithium-ion batteries in the U.S. by 2025.[31] And Ford announced an $11.4 billion investment with SK Innovation in three new advanced lithium-ion battery manufacturing plants in Kentucky and Tennessee.[32]

The industry is also developing battery chemistries that do not require some or all of the minerals used in lithium-ion batteries. For example, sodium-ion batteries do not contain lithium, cobalt, or nickel and stand up better to cold weather.[33] And some newer lithium-ion batteries are being

[26] Department of Energy, FACT SHEET: Biden-Harris Administration 100-Day Battery Supply Chain Review (June 8, 2021), https://www.energy.gov/articles/fact-sheet-biden-harris-administration-100-day-battery-supply-chain-review.
[27] *Id.*
[28] *Id.*
[29] *Id.*
[30] Ernest Scheyder, *Stellantis in lithium supply deals with California, German firms -sources*, REUTERS (July 9, 2021), https://www.reuters.com/business/stellantis-lithium-supply-deals-with-california-german-firms-sources-2021-07-09/.
[31] Arianna Skibell, *Automaker boosts EV push with second U.S. battery plant*, E&E NEWS, (Oct. 22, 2021), https://subscriber.politicopro.com/article/eenews/2021/10/22/automaker-boosts-ev-push-with-second-us-battery-plant-282292.
[32] Ford, Ford to lead America's shift to electric vehicles with new mega campus in Tennessee and twin battery plants in Kentucky: $11.4B Investment to create 11,000 jobs and power new lineup of advanced EVs, (Sept. 27, 2021), https://media.ford.com/content/fordmedia/fna/us/en/news/2021/09/27/ford-to-lead-americas-shift-to-electric-vehicles.html.
[33] Chayambuka, K., Mulder, G., Danilov, D. L., Notten, P. H. L., Adv. Energy Mater. 2018, 8, 1800079. https://doi.org/10.1002/aenm.201800079.

developed with little or no cobalt or nickel.[34] Tesla has also developed a technology that avoids the use of cobalt though the use of a silicon-based lithium battery.[35]

In addition to strengthening our domestic supply chain for minerals and batteries, it is also important for manufacturers to invest in extending the life of batteries through improved design and refurbishment for reuse and recovering metals through recycling at end of life. A recent study found that recycling significantly reduces the demand for new mining and has the potential to reduce primary demand for minerals compared to total demand in 2040, by approximately 25% for lithium, 35% for cobalt and nickel and 55% for copper, based on projected demand.[36] Ford Motor Company and Redwood Materials recently announced they are working together to build out battery recycling and a domestic battery supply chain for electric vehicles. Ford and Redwood are collaborating to integrate battery recycling into Ford's domestic battery strategy. Redwood's recycling technology can recover, on average, more than 95% of the elements like nickel, cobalt, lithium and copper so they can be reused in a closed-loop with Redwood moving to produce anode copper foil and cathode active materials for future battery production.[37]

Increasing the fuel economy of our nation's cars and light trucks can help to protect public health, particularly for the communities that disproportionately bear the burdens of this pollution. We ask NHTSA to finalize standards that are coordinated and aligned with EPA's final revised 2023 and later model year light-duty vehicle greenhouse gas emissions standards, including incorporating EDF's proposed recommendations on those standards.

Thank you for your consideration of these comments.

Respectfully submitted,

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[34] JANINA MOLENDA AND MARCIN MOLENDA, COMPOSITE CATHODE MATERIAL FOR LI-ION BATTERIES BASED ON LIFEPO4 SYSTEM, InTech (2011), https://cdn.intechopen.com/pdfs/16726/InTech-Composite_cathode_material_for_li_ion_batteries_based_on_lifepo4_system_.pdf; Zhilong Shen et al., Na-Rich Prussian White Cathodes for Long-Life Sodium-Ion Batteries, ACS Sustainable Chemistry & Engineering 2018 6 (12), 16121-16129, DOI: 10.1021/acssuschemeng.8b02758, http://www.lifuntech.com/Upload/Template/lifang/Files/202005/0d872cff-6433-4f29-8e84-efa48070c87b.pdf.

[35] Nick Flaherty, *Tesla moves to cobalt-free silicon battery cell with a new form factor*, EENEWS POWER MANAGEMENT (Sept. 23, 2020), https://www.eenewspower.com/news/tesla-moves-cobalt-free-silicon-battery-cell-new-form-factor.

[36] EARTHWORKS, REDUCING NEW MINING FOR ELECTRIC VEHICLE BATTERY METALS: RESPONSIBLE SOURCING THROUGH DEMAND REDUCTION STRATEGIES AND RECYCLING (Apr. 2021), https://earthworks.org/publications/recycle-dont-mine/.

[37] Ford, Ford, Redwood Materials teaming up on closed loop battery recycling, U.S. supply chain (Sept. 22, 2021), https://media.ford.com/content/fordmedia/fna/us/en/news/2021/09/22/ford-redwood-materials-battery-recycling.html.

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