EVs AS EJ?

*Lisa Benjamin**

Electric vehicles ("EVs") are everywhere. And they are cool—consumers love them. Federal agencies, such as EPA and NHTSA, promulgated rules which will usher in an EV revolution. But EVs have justice implications—both positive and negative. The transition to EVs will have significant climate and environmental justice benefits for some communities and negative impacts for others, including Native American tribes. EV batteries rely on minerals such as lithium and cobalt. Many of these minerals are located in or near tribal land, including sacred and culturally important sites. A previously unseen imbalance of sacrifices emerges in the context of the transition to EVs—tribes should not bear the brunt of this transition. EVs should instead contribute to environmental justice more broadly.

Despite the Biden-Harris Administration's focus on environmental and racial justice, federal agencies may face headwinds as they work to redress longstanding environmental injustices. This Article argues that despite the importance of the EV transition to climate action, the transition should be equitable for environmental justice communities by honoring tribal sovereignty through updated mining regulations. In addition to updated mining rules, this Article recommends other agency actions that would elevate the voices of environmental justice communities; provide them with opportunities for economic justice; and ensure market and technological developments place environmental justice communities, including tribes, at the center of the transition to EVs.

Table of Contents

* Associate Professor, Lewis & Clark Law School. The author would like to thank the participants of the Tenth Annual Sabin Colloquium on Innovative Environmental Law Scholarship at Columbia University, the participants of the 2022 Lutie A. Lytle Black Women Law Faculty Writing Workshop at Boston University, the participants of the 2022 Association of American Law Schools Section on Environmental Law panel, and the participants of the 2023 Stanford Law School environmental works-in-progress seminar, as well as Deborah Archer, Rebecca Bratspies, Michael Blumm, Tammi Etheridge, Barry Hill, Craig Johnston, Catherine O'Neil, Uma Outka, Melissa Powers, Nathan Richardson, Danielle Stokes, Cliff Villa, and Shelley Welton for their comments, Faith Yorba for her excellent research assistance, and my students, whose questions and comments inspired this Article. Any errors or omissions are my own.

Introduction

Electric Vehicles ("EVs") are everywhere, and consumers love them.[1] The EV market is experiencing exponential growth—more EVs were sold every week in 2022 than were sold in all of 2012.[2] The Inflation Reduction Act[3] provides significant financial incentives for the transition to EVs.[4] EVs are an important part of the climate solution. While greenhouse gas ("GHG") emissions from the electricity sector have been steadily falling,[5] despite the Supreme Court decision in *West Virginia v. EPA*,[6] transportation emissions will not de-

1. Conventional vehicles rely on internal combustion engines. These engines combust, or burn, fossil fuels and are a source of pollutants emitted from the tailpipe of the vehicle, including carbon dioxide ("CO_2"), a greenhouse gas that contributes significantly to climate change. Zero-emission vehicles ("ZEVs") emit no CO_2 or other pollutants through their tailpipe. EVs are a type of ZEV—they rely on electricity to charge a battery. Other types of ZEVs include those powered by hydrogen or fuel cells. EVs include plug-in hybrid electric vehicles ("PHEVs") and hybrid electric vehicles ("HEVs"), which contain an internal combustion engine as well as a battery. Battery electric vehicles ("BEVs") only contain a battery powered by electricity. This Article focuses on EVs, not fuel cell or hydrogen-powered vehicles. Most light-duty vehicles ("LDVs"), such as passenger cars and light trucks, can transition to EVs. Heavier vehicles would require such large batteries that electrification becomes untenable, so vehicles such as airplanes, trains, and ferries, are likely to rely on hydrogen or other alternative fuel sources and are not the focus of this Article.

2. Johnny Wood, *More Electric Cars Are Now Sold Every Week Than in the Whole of 2012*, World Econ. F. (Feb. 18, 2022), https://perma.cc/9VGW-ATLG; Jack Ewing & Neal E. Boudette, *Why This Could Be a Critical Year for Electric Cars*, N.Y. Times (Feb. 8, 2022), https://perma.cc/D2UJ-MQ2Q.

3. Pub. L. No. 117-169, 136 Stat. 1818 (2022) (codified in scattered sections of 23, 26, 30, 42, and 43 U.S.C.).

4. *See id.*

5. *See U.S. Energy-Related Carbon Dioxide Emissions 2021*, U.S. Energy Info. Admin. (Dec. 14, 2022), https://perma.cc/X68Q-NDP5 (stating that while emissions rose in 2021 from 2020 levels, they remain below 2019 pre-pandemic levels).

6. 142 S. Ct. 2587 (2022) (holding that EPA's best system of emissions reductions as contained in the Clean Power Plan rule, which provided the option of generation shifting to cleaner sources of electricity at the power plant level, was in excess of EPA's statutory authority and

cline without a transition to EVs. EV technology is proven, and regulatory and industry conditions are favorable—both the Environmental Protection Agency ("EPA") and National Highway Traffic Safety Administration ("NHTSA") recently promulgated new rules that build on the previous momentum in vehicle emissions and efficiency regulation and lay the regulatory groundwork for the transition to EVs.[7] The Biden-Harris Administration established a national goal that at least 50% of new cars purchased in 2030 be EVs.[8] The next decade will be critical for both addressing the climate crisis and for mainstreaming EVs in the transportation sector.[9] But the transition to EVs must be done carefully so that we do not replicate the exploitative and extractive approach of the fossil fuel era that placed undue burdens on communities of color.

The transition to EVs will have justice implications. In the current regulatory environment, the transition to EVs will bring both benefits and burdens to environmental justice ("EJ") communities. Transportation-related emissions will be reduced, bringing benefits to highway-adjacent communities. But an increased focus on domestic mining, partly as a result of the transition to EVs, may bring additional burdens to Native American tribes.[10] The justice implica-

---

violated the major questions doctrine due to the economic and political significance of the rule).

7. Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards, 86 Fed. Reg. 74,434 (Dec. 30, 2021) (codified at 40 C.F.R. pts. 86, 600) (EPA Rule); Corporate Average Fuel Economy Standards for Model Years 2024-2026, 87 Fed. Reg. 25,710 (May 2, 2022) (to be codified at 49 C.F.R. pts. 531, 533, 536, 537) (NHTSA Rule).

8. *FACT SHEET*: *President Biden Announces Steps to Drive American Leadership Forward on Clean Cars and Trucks,* WHITE HOUSE (Aug. 5, 2021), https://perma.cc/Z6L8-HAH6 (noting that Biden's Build Back Better Agenda and the Bipartisan Infrastructure Deal anticipate an investment in infrastructure, manufacturing, and incentives with a focus on growing good-paying union jobs, to lead on electric vehicles around the world and save American consumers money). The Inflation Reduction Act of 2022 would also provide significant tax credits for the purchase of EVs, as well as credits for businesses to manufacture EVs domestically, and incentives for domestic mining and processing of lithium. *See* Elena Shao, *Seven Key Provisions in the Climate Deal*, N.Y. TIMES (July 29, 2022), https://perma.cc/Y9YT-E822; Tim Mullaney, *The Market's Biggest Winners and Losers in the Inflation Reduction Act*, CNBC NEWS (Aug. 8, 2022), https://perma.cc/43XZ-T6AH.

9. *See* Oriana Gonzalez, *Biden Official: 2020–2030 Is the 'Decisive Decade' for Climate Change Action*, AXIOS (Apr. 28, 2021), https://perma.cc/P2DL-3VKP; Jim Skea et al., Intergovernmental Panel on Climate Change [IPCC], *IPCC 2022: Summary for Policymakers*, *in* CLIMATE CHANGE 2022: MITIGATION OF CLIMATE CHANGE (Priyadarshi R. Shukla et al. eds., 2022), https://perma.cc/B298-DFBX.

10. Tribes are heterogenous, and the term encompasses federally recognized tribes as well as landed and landless tribes, large and small tribes, and those located in the eastern and western United States as well as those living in urban areas, on or adjacent to reservations. For a concise history of tribes in the United States, see MATTHEW L.M. FLETCHER, PRINCIPLES OF FEDERAL INDIAN LAW (2017). "Approximately half of the Indian population lives on or adjacent to a reservation and this article focuses on that population." *See id.* at 18. For a list of federally recognized tribes, see Indian Entities Recognized by and Eligible to Receive

tions of EVs are complex and contested, and they raise issues that are not appropriately catered for in the existing regulatory framework for EVs, particularly in the domestic mining framework. This Article argues that EJ communities should play a central role in the transition to EVs. EJ communities are traditionally defined as low-income communities or communities of color who bear a disproportionate burden of environmental harms.[11]

The EV transition should not entrench injustice. EVs should, instead, build environmental justice. This Article's larger conceptual purpose is to draw attention to the imbalance of sacrifices currently involved in the EV transition. The existing regulatory framework promotes the transition to EVs but does not provide equivalent protection for tribes from increased domestic mining activities. This Article does not advocate for delaying or deferring climate action, as the impacts of climate change will disproportionately impact communities of

---

Services from the United States Bureau of Indian Affairs, 87 Fed. Reg. 4,636 (Jan. 24, 2022).

11. This Article will refer to EJ communities, or environmental justice communities, meaning communities disproportionately impacted by environmental burdens. These communities tend to be communities of color and/or low-income communities. These communities are also sometimes referred to in the literature as minority, low-income, tribal, or indigenous communities or geographic locations in the United States that experience disproportionate environmental harms and risks. The goal of EJ is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. *See Environmental Justice*, EPA OFF. OF ENV'T JUST., https://perma.cc/N3J8-FQ28. EPA also refers to EJ communities as "overburdened communities" and sometimes as "underserved communities," meaning populations sharing a particular characteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life. This includes people of color, low income, rural, tribal, indigenous, and other populations that may be disproportionately impacted by environmental harms and risks. *See Learn About Environmental Justice*, EPA OFF. OF ENV'T JUST. (Jan. 10, 2023), https://perma.cc/RM29-ZG8K. This Article will sometimes refer to communities of color specifically where racial indicators are the primary indicator of disproportionate impact, otherwise known as environmental racism, and will also in some instances refer to tribes where issues discussed are particularly relevant to these communities, as well as "disadvantaged communities" or "historically disadvantaged communities" when including both EJ communities (disproportionately affected by environmental harms) and socially disadvantaged communities (disproportionately affected by social and economic harms) because social and economic injustices also affect EJ communities. The Department of Energy includes thirty-six indicators for disadvantaged (sometimes referred to as cumulatively disadvantaged) communities or DACs. These thirty-six indicators are grouped into four main categories, including fossil dependence, energy burden, environmental and climate hazards, and socio-economic vulnerabilities. *See* Off. Env't Mgmt., *Justice40 Initiative*, DEP'T ENERGY, https://perma.cc/7W4J-W4JQ. Socially disadvantaged communities experience disadvantages that can cross over these four main categories, illustrating that fossil dependence, energy burdens, and environmental and climate hazards can also overlap with socioeconomic vulnerabilities. These characteristics can be found in the EJ communities on which this Article focuses.

color and other EJ communities.[12] But it does highlight the complexity of some of these transitions and argues that this imbalance of sacrifices should be redressed through a variety of critical agency actions, including updated mining regulations.

The Biden-Harris Administration has prioritized equity, but executive orders mandating environmental and racial justice action may not be sufficient on their own. Professor Karen Tani's work on administrative law invites scholars to engage with the history of agency decisions and their impacts on those at the "borders of belonging."[13] Her work calls "for greater attention to people on the margins."[14] This Article heeds this call by illustrating the racial and environmental justice implications of the transition to EVs. This Article provides recommendations that may provide more systemic and durable benefits for EJ communities in the absence of explicit justice-oriented statutory mandates, or outdated statutory authority, such as the General Mining Act of 1872.[15] It provides specific prescriptions to better ensure justice for tribes as well as for broader EJ communities.

This Article proceeds in three parts. Part I illustrates the benefits and burdens of the EV transition for EJ communities. It provides a background of the importance of EVs to climate action generally, and to highway-adjacent communities specifically, by reducing traffic-related air pollution. It also highlights the recent shift to domestic mining for critical minerals used in EV batteries and the burdens this shift may impose on tribes. Part I demonstrates the imbalance of sacrifices involved in the transition to EVs for specific EJ communities.

Part II compares statutory regimes involved in the transition to EVs, including recent vehicle emission and efficiency regulations promulgated by EPA and NHTSA, as well as an examination of the history of regulatory inaction by the Bureau of Land Management ("BLM") and the U.S. Forest Service ("USFS").[16] While regulatory action by EPA and NHTSA is likely to usher in an EV revolution, existing mining regulations do not provide sufficient protection for tribes. Part II illustrates the imbalance of regulation currently involved in the transition to EVs. While recent executive orders and agency equity plans

12. Press Release, EPA, Report Shows Disproportionate Impacts of Climate Change on Socially Vulnerable Populations in the United States (Sept. 2, 2021), https://perma.cc/67GP-74Z7; Kelly Anne Smith, *How Communities of Color Are Hurt Most by Climate Change*, FORBES (June 7, 2021), https://perma.cc/EE2V-VJA6; Patrick Galey, *Black Neighborhoods at Risk as Climate Change Exacerbates Flooding*, NBC NEWS (Jan. 31, 2022), https://perma.cc/EK45-XBR4.

13. Karen M. Tani, *Administrative Constitutionalism at the 'Borders of Belonging': Drawing on History to Expand the Archive and Change the Lens*, 167 U. PA. L. REV. 1603, 1627 (2019).

14. *Id.* at 1628.

15. 17 Stat. 91 (1872) (codified in scattered sections of 30 U.S.C.).

16. *See infra* Part II.

incentivize justice transitions within agencies, these alone will not be sufficient to redress this imbalance.

Part III provides various recommendations that could address the imbalances demonstrated in Parts I and II. These include updating existing mining regulations. While justice-oriented tools such as executive orders and interagency coordination are important, they may ultimately be too fragile to embed environmental justice within agencies. Additional opportunities are available to agencies to foster environmental and racial justice and combat inequitable transitions. Collaboration between federal agencies and EJ communities, and agency co-management arrangements with tribes specifically, can establish leadership roles for affected communities in developing agency plans and policies. Prioritizing EJ communities in grant funding and economic investments could ensure the benefits of the transition to EVs are targeted directly towards EJ communities. Finally, market and technological developments, in combination with government policy, could ease the justice implications of the EV transition.

The transition to EVs currently involves an imbalance of sacrifices. There are no easy answers, and this Article does not pretend to suggest that there are. EJ communities have historically been on the losing end of federal policies, and this should not continue to be the case in the EV transition. This Article argues that federal action should pay particular attention to their needs and place these communities, including tribes, at the center of the EV transition.

I. The Benefits and Burdens of EVs

The transition to EVs will have significant climate and public health benefits. These benefits could help combat some of the historical inequities baked into the current transportation system. The federal highway system has been a driver of racial inequality, and as Professor Deborah Archer illustrates, led to the systematic underdevelopment of Black communities.[17] EVs can have co-benefits for these communities—traffic-related air pollution will be reduced or eliminated, leading to improved health effects. But the transition to EVs will be accompanied by a shift to domestic mining for the minerals included in EV batteries. Many critical minerals are located in the West, in or near areas sacred to tribal communities,[18] so the risk of an unjust transition to EVs is high.

17. Deborah Archer, *Transportation Policy and the Underdevelopment of Black Communities*, 106 Iowa L. Rev. 2125, 2125 (2021).

18. *Joining Together for a Just Transition: Indigenous Leadership in Emerging Green Economies,* Cultural Survival Q. Mag. (Mar. 2, 2022), https://perma.cc/88YB-3QFD [hereinafter *Indigenous Leadership in Emerging Green Economies*] (noting that 97% of nickel, 89% of copper and 79% of lithium is located within thirty-five miles of a reservation).

A. Growth of EVs and Potential Barriers to Adoption

Few areas in the clean energy space are more dynamic than the EV car market.[19] This has come at a good time for automakers, particularly as the COVID-19 pandemic depressed sales of conventional vehicles.[20] Sales of EVs rose to 9% of the global car market in 2021.[21] Strong growth continued with sales "skyrocketing" in 2022.[22] The global share of the EV market is expected to reach 42.5% by 2035.[23] High gas prices may also be convincing consumers to switch to EVs.[24]

Despite such strong growth, there are barriers to the adoption of EVs. While they have significant benefits for consumers, such as lower maintenance and no fuel costs, EVs have reduced functionality. The miles-per-gallon charge is more limited than conventional vehicles, and there are fewer charging stations compared to gas stations in the United States.[25] This leads to "range anxiety" (a concern that the battery charge of an EV will not last for as long as the anticipated road trip), particularly for consumers who travel long distances.[26] Cost barriers and the lack of available charging infrastructure are concerns, particularly for lower-income families, preventing wider adoption of EVs.[27]

There are also misconceptions about EVs among the American public. Approximately 14% of Americans surveyed in 2020 believed that EVs would not help the environment at all.[28] About one-third of those surveyed (or 34%) believed that EV batteries were extremely, very, or moderately likely to catch on fire.[29] A significant percentage of Americans (65%) have never driven or known

19. Leonardo Paoli & Timur Gül, *Electric Cars Fend Off Supply Challenges to More than Double Global Sales*, Int'l Energy Agency (Jan. 30, 2022), https://perma.cc/A73U-ZE83.

20. Michael Wayland, *COVID-19 Crippled U.S. Auto Sales in 2020 but It Could Have Been Far Worse*, CNBC (Dec. 23, 2020), https://perma.cc/EV7V-DUCU.

21. Paoli & Gül, *supra* note 19.

22. Lauren M. Loew, *EV Sales Remain a Bright Spot in Industry, Outpace Demand,* Nat'l L. Rev. (May 11, 2022), https://perma.cc/WH86-JZD5.

23. Nele Rietmann, Beatrice Hugler & Theo Lievon, *Forecasting the Trajectory of Electric Vehicle Sales and the Consequences for Worldwide CO_2 Emissions*, 261 J. Cleaner Prod. 1, 7 (2020).

24. Loew, *supra* note 22.

25. Bo MacInnis & Jon A. Krosnick, Climate Insights 2020: Electric Vehicles 2 (2020), https://perma.cc/F6SY-WB2R.

26. *Id.*; Lance Noel & Benjamin K. Sovacool, *Why Did Better Place Fail?: Range Anxiety, Interpretive Flexibility, and Electric Vehicle Promotion in Denmark and Israel*, 94 Energy Pol'y 377, 383 (2016).

27. Consumer Reps. et al., Survey Says: Considerable Interest in Electric Vehicles Across Racial, Ethnic Demographics 2 (2022); Adam D. Orford, *Rate Base the Charge Space: The Law of Utility EV Infrastructure Investment*, 48 Colum. J. Env't L. 1, 6 (2022).

28. MacInnis & Krosnick, *supra* note 25, at 6.

29. *Id.*

someone who has driven an all-electric car.[30] Preferences towards buying an EV are stronger among liberals and younger people, although sex, race, ethnicity, marital status, and income did not affect preferences towards or against EVs.[31] EVs are also expensive, and the second-hand market is currently limited, meaning EVs remain unaffordable for many low-income communities.[32] Despite these potential barriers, 40% of Americans surveyed said they would consider buying an EV when buying their next car.[33]

The International Energy Agency established an EV30@30 scenario that promotes a target of 30% of all new vehicles sales being EVs by 2030.[34] Government policy remains the single most important factor for the growth of the global electric car market, and the new rules promulgated by EPA and NHTSA are likely to ensure the continuation of the EV transition.[35] But the technology has also been embraced by incumbent car manufacturers, which is likely to lead to more aggressive pricing and the development of more attractive models for consumers.[36] Strong government policy and new regulations adopted by EPA and NHTSA, combined with investments by industry, mean EVs are likely to revolutionize the light-duty vehicle transportation market in the next decade.

Another barrier to the growth of EVs is shortages in critical minerals for EV batteries. In order to maintain a strong level of growth, greater effort has to be invested by policymakers into diversifying battery manufacturing technology and securing critical mineral supplies to reduce the risks of bottlenecks and price rises.[37] The Investment Infrastructure and Jobs Act of 2021[38] provides

30. *Id.* at 9.

31. *Id.* at 14–15 (perceptions of reduced acceleration of EVs predicted resistance to EVs among men but not women).

32. Ivan Penn & Niraj Chokshi, *Electric Cars for Everyone? Not Unless They Get Cheaper*, N.Y. Times (Aug. 9, 2021), https://perma.cc/TDN8-BY3R.

33. MacInnis & Krosnick, *supra* note 25, at 9.

34. Int'l Energy Agency, Global EV Outlook 2019: Scaling-Up the Transition to Electric Mobility 120 fig.3.1 (2019). For updated chart data, see *Electric Vehicle Stock in the EV30@30 Scenario, 2018–2030*, Int'l Energy Agency (Oct. 26, 2022), https://perma.cc/U33H-HXQW.

35. John O'Dell, *Your 4x4 Pickup Needs that Electric Car to Survive: Automakers Will Need to Sell More EVs to Offset SUV, Truck Mpg Ratings*, TrueCar (Feb. 11, 2022), https://perma.cc/JH4Q-UE4M; Paoli & Gül, *supra* note 19.

36. Paoli & Gül, *supra* note 19.

37. Press Release, Int'l Energy Agency, Global Electric Car Sales Have Continued Their Strong Growth in 2022 After Breaking Records Last Year (May 23, 2022), https://perma.cc/B87Q-4Q6E [hereinafter IEA Press Release May 2022]; Paoli & Gül, *supra* note 19; *see also* Inflation Reduction Act of 2022, Pub. L. No. 117-169, §§ 13401–13404, 136 Stat. 1818, 1954–69 (2022) (enabling provision of significant benefits for businesses that manufacture EVs domestically or extract or process critical minerals domestically or in a country with a free trade agreement in effect with the United States).

38. Pub. L. No. 117-58, 135 Stat. 429 (2021) (codified in scattered sections of the U.S.C.).

resources for improved federal permitting processes on federal land for critical minerals.[39] In addition, governments need to invest in more research and development into battery technology, battery recycling, and infrastructure such as charging stations. If these policy challenges can be overcome, EVs are likely to expand dramatically in the United States in the next decade. The adoption of this technology could revolutionize the transportation sector and provide significant contributions to climate mitigation efforts.

B. Benefits of EVs for EJ Communities: Climate and Air Pollution

Transportation is a significant source of GHGs and air pollution, particularly in the Northeast and mid-Atlantic regions.[40] Traffic Related Air Pollution ("TRAP") disproportionately affects communities of color.[41] Inequitable siting of federal highways in the 1950s through the 1970s led to more exposure to emissions by highway-adjacent communities. Highways were constructed to purposefully remove so-called "blight" and make way for business districts in urban areas across the United States.[42] This often led to the intentional siting of highways in and through Black communities.[43] The associated economic, health, and cultural impacts of highways for these communities have been devastating.[44] EVs can provide considerable co-benefits to highway-adjacent communities due to their low or zero emissions.

The transition to EVs will be critical to the reduction of U.S. GHG emissions. The transportation sector is the largest source of U.S. emissions, and the carbon intensity of the transportation sector needs to reduce by about 50% by 2050 and as much as 91% by 2100 to stay within the temperature goal of 1.5°C.[45] EVs can help to cut projected oil use in the United States by half in the

39. 30 U.S.C. § 1607.

40. Maria Cecilia Pinto de Moura & David Reichmuth, Inequitable Exposure to Air Pollution from Vehicles in the Northeast and Mid-Atlantic 1 (2019), https://perma.cc/9T7K-UDYM.

41. *Id.*

42. Roger Biles et al., *Revisiting the Urban Interstates: Politics, Policy and Culture Since World War II*, 40 J. Urb. Hist. 827, 827–28 (2014).

43. Deborah Archer, *White Man's Roads Through Black Man's Homes: Advancing Racial Equity Through Highway Reconstruction*, 73 Vand. L. Rev. 1259, 1264–65 (2020).

44. *Id.* at 1275 (noting that highways were designed to be walls, wedges, and extractors, entrenching racial segregation); Archer, *supra* note 17, at 2127 (illustrating that highways were deployed to "maximize the oppression of Black America" by feeding inequality and helping make Black communities "inhospitable for health, success, and economic opportunity").

45. *See generally* U.N. Framework Convention on Climate Change, *Adoption of The Paris Agreement*, U.N. Doc. FCCC/CP/2015/L.9/Rev.1 (Dec. 12, 2015) (agreeing "to hold the increase in the global average temperature to below 2°C" with an aspirational goal to limit warming to 1.5°C); Alan Jenn, *How Electric Vehicles and Other Transportation Innovations Could Slow Global Warning, According to IPCC*, PBS Sci. (Apr. 5, 2022), https://perma.cc/5SBG-FYUZ.

next twenty years.[46] From cradle to grave, Battery Electric Vehicles ("BEVs") are cleaner than conventional cars. They produce less than half of the GHG emissions compared to gas-powered vehicles.[47] A nationwide transition to 100% EV sales could reduce GHG emissions from on-road transportation by 67% by 2050 compared to 2020 and 82% if those EVs were charged from an electric grid powered primarily by clean energy.[48]

While EVs have no tailpipe emissions, their manufacturing process does involve significant emissions. Emissions come primarily from the extraction of raw materials and battery manufacturing.[49] Life-cycle analysis is complex, but it is estimated that emissions from the manufacture of EVs are actually higher than for the manufacture of conventional vehicles, although those emissions are rapidly negated by reduced emissions from driving an EV.[50] Roughly half of the manufacturing emissions for EVs result from electricity used in the manufacture of batteries, so increasing renewable energy use in manufacturing facilities can offset emissions significantly.[51] Some automakers are already using clean electricity to manufacture EVs.[52]

The climate contributions of EVs also depend on the source of the electricity used to charge the batteries.[53] EVs transfer emissions from the tailpipe of the vehicle upstream to the smokestack of the power plant used to provide the electricity which charges the battery.[54] If that plant is powered by coal, the climate benefits of EVs are reduced.[55] However, even without a national clean electricity supply, an increased share of EVs on the road will result in overall GHG emission reductions.[56] The cleaner the source of electricity that powers

46. Rachael Neale et al., Cleaner Cars from Cradle to Grave 1 (2015), https://perma.cc/J5MT-V44M (noting that this reduction is possible through EV use combined with other transportation efforts such as more efficient vehicles and advanced biofuels).

47. *Id.* at 3.

48. Fiona Wissell et al., ICF Climate Center, the Impact of Electric Vehicles on Climate Change 3 (2022).

49. Neale et al., *supra* note 46, at 16–17.

50. *Id.* at 3.

51. Dale Hall & Nic Lutsey, Int'l Council on Clean Transp., Briefing: Effects of Battery Manufacturing on Electric Vehicle Life-Cycle Greenhouse Gas Emissions 7 (2018).

52. *See, e.g.*, Sören Amelang, *Tesla's Berlin Gigafactory Will Accelerate Shift to Electric Cars*, Clean Energy Wire (Mar. 7, 2022), https://perma.cc/PFV2-3NHF; Hall & Lutsey, *supra* note 51, at 7–8 (manufacturing emissions can also be reduced if batteries are used after their vehicle life to store electricity and if chemicals used in batteries can be recycled).

53. This Article focuses on the life cycle of EVs and the mining of minerals for their batteries. It does not cover the environmental justice implications of power plant sources of emissions that are used to charge EV batteries.

54. *See* Neale et al., *supra* note 46, at 1.

55. *Id.* at 11.

56. Wissell et al., *supra* note 48, at 9.

the EV, the increased climate benefits EVs provide. Therefore, the transition to EVs should also be accompanied by a greening of the electricity grid.

EVs will increase demand for electricity, which may strain capacity of the electric grid.[57] Time-of-use charging will be critical. If battery charging is timed appropriately, EVs could help smooth grid congestion. If a consumer charges their vehicle at peak times in the evening, when electricity sources are the most GHG intensive,[58] and expensive, that will increase grid congestion. EV charging should, instead, occur during periods of low demand and high renewable energy generation, which for solar is primarily during the day.[59]

Despite these benefits, EVs alone cannot fix the climate crisis. Ultimately an "avoid-shift-improve" approach is needed for transportation policy.[60] Americans have to reduce vehicle miles traveled, shift the energy sources of that travel, and improve vehicle efficiency.[61] The United States needs a wide range of transportation policies to close its climate mitigation gap. Part of the policy fix does include a nationwide transition to EVs to significantly reduce on-road transportation emissions in the United States.[62] Recent rules promulgated by EPA and NHTSA attempt to create such nationwide requirements for automakers, and these rules will have significant co-benefits for EJ communities, including from reduced air pollution.[63]

Due to discriminatory federal transportation practices, and the disproportionate impacts of emissions associated with transportation, transportation pol-

57. *Id.*

58. Joyce McLaren et al., Nat'l Renewable Energy Lab'y, Emissions Associated with Electric Vehicle Charging: Impact of Electricity Generation Mix, Charging Infrastructure Availability, and Vehicle Type 11 (2016).

59. Wissell et al., *supra* note 48, at 11. The California Independent Systems Operator ("CAISO"), which manages the California electricity grid, created the CAISO "duck curve." Shaped like a duck, this graph demonstrates when electricity usage in the United States peaks: primarily in the evening when people return home from work. *See generally* Cal. Indep. Sys. Operator, FAST FACTS: What the Duck Curve Tells Us About Managing a Green Grid (2016), https://perma.cc/EJ6K-UMXB. Usage is lowest (the belly of the duck) when people are at work but peaks significantly (the neck of the duck) when they return home. *Id.* However, if consumers charged their EVs during the day, when electricity is cheapest and can be sourced primarily from renewable energy such as solar, it would sharply reduce the evening peak usage. *Id.*

60. Wissell et al., *supra* note 48, at 10–11.

61. Alexandre Milovanoff, I. Daniel Posen & Heather L. MacLean, *Electrification of Light-Duty Vehicle Fleet Alone Will Not Meet Mitigation Targets*, 10 Nature Climate Change 1102, 1102 (2020); *see also* Thea Riofrancos et al., Achieving Zero Emissions with More Mobility and Less Mining 10–12 (2023), https://perma.cc/U328-W8XS (noting that a range of transportation policies and models are required, including replacement of ICE vehicles with EVs, but also increasing lithium efficiency, reducing the size of EV batteries, reducing car ownership, and investing in more public transportation options).

62. Pinto de Moura & Reichmuth, *supra* note 40, at 7–8.

63. *See infra* Part II.A (discussing NHTSA and EPA rules).

icy is a civil rights issue.[64] From Rosa Parks' refusal to give up her bus seat to a white man in defiance of Jim Crow laws, to the Montgomery bus boycotts, transportation has been intricately embedded in the civil rights movement. In 2021, the National Academies of Science, Engineering and Medicine stated that racism has been overt in transportation policies.[65] Freeways and rail infrastructure have isolated and displaced people and led to emissions and noise pollution. The burden of this infrastructure has disproportionately been borne by Black communities and other communities of color.[66]

Discriminatory transportation policies have also adversely affected American Indian tribes. The federal government forcibly removed many tribes to reservations, and the consequential lack of investment in transportation infrastructure has compounded this isolation and led to higher costs of transportation options, a lack of access to healthcare and employment, and a lack of access to critical services, such as food and education.[67] Some tribes face restricted mobility, isolation, and underdevelopment of critical infrastructure, including roads, bridges, water and electricity infrastructure, and internet connectivity.[68] Lack of energy infrastructure, combined with many tribes' remote locations, also contributed to an underdevelopment of renewable energy projects on tribal lands.[69] Transportation deserts occurred as a result of unjust transportation policies in both rural and urban areas and acutely affect EJ communities—specifically communities of color and tribes.

Discrimination in transportation still imposes an additional "tax" on EJ communities, as these communities lack access to safe, affordable, and accessible public transportation.[70] The vast majority of transportation dollars are spent on highways, not public transportation.[71] Lower-income families and communities of color still face higher costs of purchasing a vehicle, including finance costs and insurance rates, so they do not benefit equally from road infrastructure investment.[72] In addition, communities of color primarily suffer the negative impacts of this investment in highways, bearing the brunt of the economic, social, and health effects of highways. Communities that are 0.2 to 0.3 miles

64. Robert D. Bullard, *Addressing Urban Transportation Equity in the United States*, 31 FORDHAM URB. L.J. 1183, 1183 (2003); Archer, *supra* note 17.

65. NAT'L ACADS. SCIS., ENG'G & MED., RACIAL EQUITY ADDENDUM TO CRITICAL ISSUES IN TRANSPORTATION 3 (2021) [hereinafter NATIONAL ACADEMIES].

66. *Id.*

67. *Id.* at 10.

68. *See id.* at 4.

69. Ann M. Eisenberg & Elizabeth Kronk Warner, *The Precipice of Justice: Equity, Energy and the Environment in Indian Country and Rural Communities*, 42 ENERGY L.J. 281, 289 (2021).

70. *See* Bullard, *supra* note 64, at 1186.

71. *Id.*

72. NATIONAL ACADEMIES, *supra* note 65, at 4.

from a highway are most affected by air pollution, experiencing a myriad of health effects.[73]

Motor vehicle emissions are a complex mixture of "criteria" air pollutants, including carbon monoxide, nitrogen oxides, particulate matter, and hydrocarbons.[74] These pollutants mix with sunlight to form ground-level ozone.[75] Traffic Related Air Pollutants ("TRAPs") are associated with a myriad of health impacts, including asthma, impaired lung functions, cardiovascular mortality, and morbidity, as well as adverse reproductive outcomes.[76] Ambient air pollution accounts for an estimated four million premature deaths per year worldwide and accounted for 100,000 premature deaths in the United States in 2016.[77] The most affected communities are made up predominantly of "racial and ethnic minority communities, foreign-born persons, and persons who speak a language other than English at home."[78]

Communities of color in the Northeast and mid-Atlantic United States bear a disproportionate burden. In those regions, the average concentrations for TRAP exposure for Latinx communities were 75% higher, for Asian American communities 73% higher, and for African American communities 61% higher than for white communities.[79] The disparate effect also occurs within states. Approximately 6.5 million African American and 6.1 million Latinx residents, along with 3.7 million residents of other races, live in an area where particulate matter up to 2.5 microns in diameter ("$PM_{2.5}$") is higher than the average levels of $PM_{2.5}$ of the state where they reside.[80] Disparities of exposure to $PM_{2.5}$ are more strongly correlated with race and ethnicity than income.[81] $PM_{2.5}$ is very dangerous. The particles are small and can penetrate deep into the lungs and even into the bloodstream, making it one of the largest environmental health risk factors and leading causes of premature deaths from air pollution in the United States.[82]

TRAPs such as ozone and $PM_{2.5}$, combined with heat exposure attributable to climate change, have led to adverse pregnancy outcomes for women in

73. Courtnee Melton, *How Transportation Impacts Public Health*, Sycamore Inst. (Feb. 21, 2017), https://perma.cc/QHD8-4689.
74. Tegan K. Boehmer et al., *Residential Proximity to Major Highways – United States, 2010*, 62 Morbidity & Mortality Wkly. Rep. 46, 46 (2013).
75. *Id.*
76. *Id.*
77. David A. Paolella et al., *Effects of Model Spatial Resolution on Estimates of Fine Particulate Matter Exposure and Exposure Disparities in the United States,* 5 Env't Sci. & Tech. 436, 436 (2018).
78. Boehmer et al., *supra* note 74, at 47.
79. Pinto de Moura & Reichmuth, *supra* note 40, at 2.
80. *Id.*
81. Paolella et al., *supra* note 77, at 438.
82. *Id.* at 436 (citing Philip J. Landrigan et al., *The Lancet Commission on Public Health*, 391 Lancet 462, 462 (2018)).

highway-adjacent communities. These impacts include higher rates of stillbirths, preterm births, and low birth weights.[83] One of the highest subpopulations at risk from the combination of TRAPs and heat are Black mothers.[84] Traffic-related air pollution, combined with increasing temperatures due to climate change, is having intergenerational health impacts on communities of color.

Proximity to highways leads to a triple jeopardy for socially disadvantaged groups.[85] They suffer the negative health effects from the social and behavioral determinants of health, including psychological stress, poor nutrition, and inadequate access to healthcare.[86] The same populations are at a higher risk of exposure to TRAPs. Finally, the multiplicative interaction between the first two factors means these groups experience disproportionately larger adverse health effects.[87] EVs can help reduce the negative emission-related health impacts of highways in affected communities.

EVs can therefore have justice benefits for EJ communities. New clean electric technology such as electric trucks, buses, and passenger vehicles can significantly reduce or eliminate the use of diesel fuels and gasoline from vehicles.[88] Increasing the number of EVs on the road will provide health benefits for disadvantaged communities. These communities stand to benefit the most from a transition to EVs.[89] EVs and cleaner fuels could save thousands of lives and avoid costs of at least an estimated $30 billion by 2050.[90] A 100% transition to EVs by 2035, and a transition of medium to heavy duty trucks by 2040, could generate over $1.2 trillion in public health benefits between 2020 and 2050 and avoid 110,000 premature deaths and three million asthma attacks.[91]

The transition to EVs is particularly important for children and young people, whose lungs are still developing. The vast majority of all school buses in the United States are powered by diesel, which significantly adds to the pollution burden in disadvantaged communities.[92] Approximately 60% of low-income students rely on school buses for transportation, compared to 45% of higher-income students.[93] A transition to electrified school buses would provide

83. Bruce Bekkar et al., *Association of Air Pollution and Heat Exposure with Preterm Birth, Low Birth Weight and Stillbirth in the U.S.*, JAMA Network Open, 1, 4 (June 18, 2020).

84. *Id.* at 8.

85. Boehmer et al., *supra* note 74, at 49.

86. *Id.*

87. *Id.*

88. Pinto de Moura & Reichmuth, *supra* note 40, at 2.

89. Wissell et al., *supra* note 48, at 13.

90. Pinto de Moura & Reichmuth, *supra* note 40, at 7.

91. Am. Lung Ass'n, Zeroing in on Healthy Air 3 (Mar. 2022), https://perma.cc/K34K-DTKJ.

92. Wissell et al., *supra* note 48, at 13.

93. *Id.*

significant health benefits to children in low-income communities. EPA's Clean School Bus Program specifically prioritizes replacing conventional school buses with electrified options in high-need school districts, tribal schools, and rural and low-income areas.[94]

It will be important for agencies to seek the input of communities most affected by pollution as to which solutions and investments would be most effective for them and to prioritize investments that have direct benefits for EJ communities.[95] EVs are not a panacea in and of themselves—they are expensive and do not incentivize public transportation use. But their health impacts for highway-adjacent communities could be considerable. A transition to EVs could be extremely beneficial for some EJ communities. Despite these benefits, the justice implications of EVs remain complex, particularly around the component minerals needed for their batteries. The next section looks at the full life cycle of EVs and the justice implications for tribes of domestic mining of critical minerals.

C. Burdens of EVs for EJ Communities: The Shift to Domestic Mining

The clean energy transition is expected to create a 400–600% increase in global demand for key critical minerals such as lithium, graphite, cobalt, and nickel.[96] The demand for lithium alone is expected to increase by 4,000% due to its high electrochemical properties.[97] These minerals will be used in EVs but also for renewable energy battery storage, wind turbines, and solar panels.[98] Critical minerals are currently used in laptops, cell phones, and in the energy, aeronautics, and defense industries, but their use is expected to grow exponen-

94. *Id.*; *see Clean School Bus Program*, EPA (Feb. 8, 2023), https://perma.cc/5ZWA-CFV4. The program will provide $5 billion over the next five years (FY 2022–2026) to replace existing school buses with zero- and low-emission models.

95. PINTO DE MOURA & REICHMUTH, *supra* note 40, at 2.

96. U.S. DEP'T INTERIOR, BIDEN-HARRIS ADMINISTRATION FUNDAMENTAL PRINCIPLES FOR DOMESTIC MINING REFORM 1 (2022), https://perma.cc/XW6L-HJZA.

97. Press Release, U.S. Dep't Energy, Biden-Harris Administration Launches $675 Million Bipartisan Infrastructure Law Program to Expand Critical Materials Supply Chain (Aug. 9, 2022), https://perma.cc/A3PN-JQN7.

98. The United States was the leading producer of lithium for nuclear, military, and aerospace uses from the 1950s to the 1980s, but when it became cheaper to buy lithium from other countries, U.S. production of lithium declined. John D. Graham, John A. Rupp & Eva Brungard, *Lithium in the Green Energy Transition: The Quest for Both Sustainability and Security,* SUSTAINABILITY, 1, 6 (Oct. 13, 2021). The United States currently has only one operating lithium mine in Silver Peak, Nevada, which produces the equivalent of less than 2% of the world's annual supply. *See* Ivan Penn & Eric Lipton, *The Lithium Gold Rush: Inside the Race to Power Electric Vehicles*, N.Y. TIMES (May 6, 2021), https://perma.cc/7X6B-9WVP.

tially—primarily due to the demand for EVs in this decade.[99] Batteries used in EVs require minerals such as cobalt and lithium.[100] Critical minerals are actually plentiful, but currently only mined and processed in a few areas of the world, predominantly in China.[101] Due to their anticipated explosive growth, and for national security reasons, there has been a shift to focusing on domestic mining and processing of these minerals, as well as improving domestic manufacturing of EV batteries.

The U.S. goal of securing critical minerals supply has been a bipartisan affair, beginning under the Trump Administration and continuing under the Biden-Harris Administration. Executive Order 13,817, issued by President Trump in 2017, focused on developing a federal strategy to secure supplies of critical minerals[102] and other minerals to reduce imports from China and Russia.[103]

Imperial Valley in California has a large deposit of lithium.[104] There are also deposits in Oregon, Nevada, North Dakota, Tennessee, and Arkansas.[105] The vast majority of nickel, copper, and lithium deposits are located within thirty-five miles of tribal reservations.[106] Mineral mining has a number of environmental consequences. Lithium is located in salt beds, terrestrial brines, and clay.[107] These geographic areas are often dry, but lithium mining relies heavily on water and can deplete scarce water resources which can threaten Indigenous communities and ecosystems.[108] Extraction techniques use acid and other chemicals to leach and separate out lithium, leaving mining waste, which is often stored in tailing ponds.[109] The process also leads to ground, water, and air pollution from chemicals such as cadmium, arsenic, mercury, and lead.[110] Existing legislation does not provide sufficient protection from these negative impacts for surrounding communities, including tribal communities.

---

99. Axel Anlauf, *Greening the Imperial Mode of Living? Socio-Ecological (In)justice, Electromobility, and Lithium Mining in Argentina*, *in* FAIRNESS AND JUSTICE IN NATURAL RESOURCE POLITICS 164, 167 (Pichler et al. eds., 2017).

100. Graham et al., *supra* note 98, at 3–4.

101. *Id.* at 9–10.

102. Exec. Order No. 13,817, A Federal Strategy to Ensure Secure and Reliable Supplies of Critical Minerals, 82 Fed. Reg. 60,835 (Dec. 20, 2017).

103. Jude Clemente, *America's Mineral and Metal Insecurity Is a National Security Threat. It Doesn't Have to Be*, FORBES (June 2, 2022), https://perma.cc/9RK3-BEGV.

104. Thomas Fudge, *The Promise of Lithium Sparks a Gold Rush in Imperial Valley*, KPBS (Oct. 13, 2022), https://perma.cc/8BGT-HBT7.

105. *Id.*

106. *Indigenous Leadership in Emerging Green Economies*, *supra* note 18 (noting that 97% of nickel, 89% of copper, and 79% of lithium is located within thirty-five miles of a reservation).

107. Austin Price, *The Rush for White Gold*, EARTH ISLAND J. 19, 20 (2021).

108. Graham et al., *supra* note 98, at 2.

109. Price, *supra* note 107, at 20.

110. *See id.*

The Federal Consortium for Advanced Batteries, a group of federal agencies including the Departments of Energy, Defense, Commerce, and State, published a National Blueprint for Lithium Batteries, outlining goals and plans for the coming decade, 2021–2030.[111] The federal vision is to establish a secure battery materials and technology supply chain that meets national security and economic competitiveness goals, provides equitable job creation, enables decarbonization, and advances social justice by 2030.[112] This vision is in line with a number of EJ principles.[113] But significant amendments to legislation or updates to agency regulations will have to be made in order to adhere to this vision. The existing statutory and regulatory regime involved in the transition to EVs is currently imbalanced, as Part II demonstrates.

II. The Existing Legal Regime for the EV Transition

At the end of 2021, EPA announced the most ambitious GHG emissions standards ever for vehicles, paving the way for a zero-emissions future.[114] NHTSA also announced stricter corporate average fuel economy ("CAFE") standards.[115] These new rules could provide significant benefits to communities of color. But mining of critical minerals is a dirty process and is governed by the outdated 1872 General Mining Act, as updated by the Federal Land Policy and Management Act ("FLPMA").[116] The General Mining Law was developed during an era that held closely to now antiquated assumptions about Indigenous land tenure[117] and was based on a model of extraction and exploitation. This system also led to the reduction of treaty rights and colonial acquisition of tribal land, which was then placed under management of federal agencies such as BLM and USFS, leaving only reserved rights for many tribes to access land

111. Fed. Consortium Advanced Batteries ("FCAB"), U.S. Dep't Energy, Executive Summary: National Blueprint for Lithium Batteries, 2021–2030 (2021).

112. *Id.* at 5.

113. *See infra* Part III.A.

114. *EPA Finalizes Greenhouse Gas Standards for Passenger Vehicles*, EPA (Dec. 20, 2021), https://perma.cc/8JU5-A266.

115. Corporate Average Fuel Economy Standards for Model Years 2024–2026, 87 Fed. Reg. 25,710 (May 2, 2022) (to be codified at 49 C.F.R. pts. 531, 533, 536, 537).

116. 17 Stat. 91 (1872) (codified in scattered sections of 30 U.S.C.); Federal Land Policy and Management Act, Pub. L. No. 94-579, 90 Stat. 2743 (1976) (codified in scattered sections of 16 and 43 U.S.C.).

117. *See generally* Monte Mills & Martin Nie, *Bridges to a New Era: A Report on the Past, Present and Potential Future of Tribal Co-Management on Federal Public Lands*, 44 Pub. Land & Res. L. Rev. 49 (2021) (illustrating that the policy of land management by the federal government was premised on erasure and marginalization of tribal communities, in addition to seeing these communities as a burden to agencies' work as opposed to recognizing the sovereignty and relationship to the land that these communities have held since time immemorial).

that was previously under their management.[118] BLM and USFS have also been reluctant to exercise their full regulatory authority under FLPMA. Recent executive orders[119] mandate that agencies develop plans for climate and racial justice, and these may incentivize agencies to prioritize environmental justice. The agencies involved in the EV transition have developed equity action plans,[120] but these efforts do not fully redress the regulatory imbalance currently involved in the transition to EVs.

A. Vehicle Emission and Efficiency Regulation

EPA and NHTSA both regulate vehicular emissions in the United States. EPA regulates the emission of GHGs from mobile sources under Section 202 of the Clean Air Act.[121] Under the Energy Policy and Conservation Act ("EPCA"),[122] the Department of Transportation regulates CAFE standards.[123] The Department of Transportation delegated its regulatory authority to NHTSA.[124] The EPCA,[125] in response to the 1973 oil crisis, mandated federal oversight of fuel efficiency standards.[126] However, a moratorium from 1985 to 2002 meant that fuel efficiency standards remained stagnant.[127] During this period, several states, led by California, acted unilaterally and set their own emis-

118. *Id.* (charting the federal government's history of forcible acquisition of land and removal of tribes from land previously under their sovereignty and management, and the placement of that land under the control of federal public agencies; new treaties often reduced the area of land previously managed by tribes but reserved rights to the tribes for access to this land for activities such as fishing, hunting, and gathering).

119. Exec. Order No. 14,008, On Tackling the Climate Crisis at Home and Abroad, 86 Fed. Reg. 7,619 (Jan. 27, 2021); Exec. Order No. 13,985, On Advancing Racial Equity and Support for Underserved Communities Through the Federal Government, 86 Fed. Reg. 7,009 (Jan. 25, 2021).

120. *See, e.g.*, *Advancing Equity at USDA*, U.S. DEP'T AGRICULTURE, https://perma.cc/8GRP-X48K; U.S. DEP'T INTERIOR, EQUITY ACTION PLAN (2022), https://perma.cc/4SUY-T2EN.

121. EPA's authority under the Clean Air Act is to prescribe standards applicable to "emission[s] of any air pollutant from any class of new motor vehicles . . . ." 42 U.S.C. § 7521(a)(1).

122. Energy Policy and Conservation Act of 1975, Pub. L. No. 94-163, 89 Stat. 871 (1975) (codified in scattered sections of 42 U.S.C.).

123. 49 U.S.C. § 32902 (requiring manufacturers to comply with average fuel economy standards in any given model year). For an overview of the history of federal vehicular regulation, see Greg Dotson, *State Authority to Regulate Mobile Source GHG Emissions, Part 1*, 49 ENV'T L. REP. 11037 (2019).

124. Delegation Under the Energy Policy Conservation Act, 41 Fed. Reg. 25,015 (June 22, 1976).

125. Energy Policy and Conservation Act of 1975, Pub. L. No. 94-163, 89 Stat. 871 (1975) (codified in scattered sections of 42 U.S.C.).

126. Jody Freeman, *The Obama Administration's National Auto Policy: Lessons From the 'Car Deal'*, 35 HARV. ENVTL. L. REV. 343, 346–47 (2011).

127. *Id.*

sions standards.[128] In 2009, EPA and NHTSA, acting under a new national automobile policy established by the Obama Administration, set the first combined federal GHG emission standards and the strictest fuel efficiency standards for new cars and trucks ever established at that time.[129]

Although EPA and NHTSA collaborated under the Obama Administration to issue a joint rule, in 2021, under the Biden-Harris Administration, EPA and NHTSA issued separate, proposed rules which implement an aggressive reduction in GHG emissions[130] and an ambitious increase in CAFE standards.[131]

At the end of 2021, EPA issued Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards.[132] According to EPA, "[m]ost automakers have launched ambitious plans to develop and produce increasing numbers of zero- and near zero-emission vehicles."[133] In other words, the agency's proposed rule is in alignment with market transitions toward EVs. EPA determined that its final standards for Model Years ("MY") 2023 through 2026 would be achievable primarily through the application of advanced gasoline vehicle technologies but supplemented with a growing percentage of EVs.[134] EPA projects that during the four-year ramp-up of the stringency of the GHG standards, sales of plug-in electric vehicles in the United States will increase from about 7% market share in MY 2023 (including both fully electric vehicles and plug-in hybrid vehicles ("PHEV")) up to about 17% in MY 2026.[135] EPA projects this rapid increase in the market of EV and PHEV because of existing EV market growth trends, as well as the proliferation of recent automaker announcements on plans to transition toward an electrified fleet.[136]

The transition to EVs is also being fueled by the falling price of battery technology. EPA recently updated its estimates of battery costs based on the

128. *See id.* at 347–49. The Clean Air Act preempts states' GHG emission standards unless certain conditions are met and essentially requires a waiver by EPA for California's standards, which were subsequently adopted by various states. This waiver was granted by the Obama Administration, then denied by the Trump Administration, which rolled back fuel efficiency standards. Trish McCubbin, *The Trump Administration's Withdrawal of California's Clean Air Act Preemption Waiver in the SAFE Rule*, 51 TRENDS 4, 4–5 (2020).

129. *See* Freeman, *supra* note 126, at 344.

130. Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards, 86 Fed. Reg. 74,434 (Dec. 30, 2021) (to be codified at 40 C.F.R. pts. 86, 600).

131. Corporate Average Fuel Economy Standards for Model Years 2024–2026, 87 Fed. Reg. 25,710 (May 2, 2022) (to be codified at 49 C.F.R. pts. 531, 533, 536, 537).

132. Revised 2023 and Later Model Year Light-Duty Vehicle GHG Emissions Standards, 86 Fed. Reg. at 74,526.

133. *See id.* at 74,438.

134. *Id.*

135. *Id.*

136. *Id.*

most recent available data, lowering projected battery costs considerably compared to their proposed rule.[137] In response to comments from industry, EPA agreed that the battery costs used in the proposed rule were higher than recent evidence supports and adjusted the battery costs to more accurately account for current trends.[138] Based on this updated assessment, EPA determined that battery costs should be reduced by about 25%, which would make EVs even more attractive for automakers to manufacture and hopefully more affordable for consumers.

EPA received mixed comments regarding the equity implications of EVs.[139] For example, comments received on the proposed rule point out the higher up-front costs of EVs as challenges for adoption.[140] However, EVs' lower operating and maintenance costs are incentives for adoption but are only long-term benefits, which are not always attractive to low-income communities. Some environmental justice groups and tribes were concerned that limited access to EVs and charging infrastructure could be a barrier for purchasing EVs for these communities.[141] EPA assumes that the reduced projected costs of EVs will act as a compliance pathway for automakers and that EVs will attain cost parity with conventional vehicles in an increasing number of market segments.[142] EPA is therefore relying on battery technology development and market forces to make the distribution and cost of EVs more equitable over time, but the rule does not contain any explicit mandates to ensure environmental justice for disadvantaged communities.[143]

Almost at the same time as EPA was issuing its rule on vehicle emissions, NHTSA issued updated CAFE standards for MY 2024–2026 Passenger Cars and Light Trucks.[144] While NHTSA's new standards do not place a mandate on EV sales, they do make EVs nearly impossible for automakers to avoid if they want to meet the new standards. The new MY 2024–2026 standards, consistent with the MY 2011 standards, are vehicle-footprint-based (based on the measurement between a car's front and rear tires).[145] Therefore, the larger the vehicle, the less fuel-efficient it is expected to be. Vehicular weight is determined by four main elements: size class (compact, pick-up, etc.), design (in-

137. *Id.* at 74,477–78.

138. *Id.* at 74,478.

139. *Id.* at 74,518.

140. *Id.*

141. *Id.* at 74,519.

142. *Id.*

143. *Id.* at 74,514 (citing Exec. Order No. 12,898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, 59 Fed. Reg. 7,629 (Feb. 16, 1994)).

144. Corporate Average Fuel Economy Standards for Model Years 2024–2026, 87 Fed. Reg. 25,710, 26,092 (May 2, 2022) (to be codified at 49 C.F.R. pts. 531, 533, 536, 537).

145. *Id.* at 25,720.

cluding the choice of materials), features (including air conditioning, safety features, etc.), and performance (including acceleration and power).[146] Additional features and the increase in light trucks' popularity led to an upward trend in the weight of conventional new vehicles.[147] This means that increasing efficiency, through increasingly stringent CAFE standards, is important for climate action.

CAFE standards are based on the entire fleet of vehicles,[148] so manufacturers must compensate for larger, less efficient vehicles through more aggressive fuel efficiency standards in other models in their fleet—for example, by manufacturing EVs. NHTSA considered making electrification a required attribute of vehicles but decided against doing so in response to comments received.[149] For example, Auto Innovators argued that requiring electrification as a required vehicle attribute could create battery supply chain risks as an unintended consequence, and that "including electrification as a fuel economy attribute could be solidifying a dependence on foreign supply chains that might not be reliable or have shared interests with our country."[150]

When setting the new, more stringent CAFE standards, NHTSA also took into consideration the fact that a number of states and automakers have existing emission reduction commitments. Many automakers have gone beyond existing CAFE standards and taken additional steps toward energy conservation and emission reduction, including five major manufacturers that voluntarily bound themselves to stricter GHG requirements than set forth by EPA in 2020 through contractual agreements with the State of California.[151] NHTSA looked at both California's ZEV program (adopted by a number of other states) and the Framework Agreements between California and BMW, Ford, Honda, Volkswagen Group of America, and Volvo, which are national GHG emission reduction agreements to which these companies committed for several model years.[152] NHTSA based its standards on pre-existing market transitions to low- or zero-emission vehicles.[153] NHTSA's attention to market trends is an important element of fulfilling its statutory authority.[154]

146. Milovanoff et al., *supra* note 61, at 1105.

147. *Id.*

148. CAFE standards are based on model years, meaning the fleet of vehicles auto manufacturers produce in any given model year, e.g., MY 2024.

149. CAFE Standards for Model Years 2024–2026, 87 Fed. Reg. at 25,721.

150. *Id.* at 25,754.

151. *See Framework Agreements on Clean Cars*, CAL. AIR RES. BD. (Aug. 17, 2020), https://perma.cc/H5GV-DU2F.

152. *Id.*

153. CAFE Standards for Model Years 2024–2026, 87 Fed. Reg. at 25,721–22.

154. The agency notes that taking into account existing regulatory requirements and market trends undertaken by manufacturers informs the accuracy of the baseline by reflecting the state of the world without the revised CAFE standards. *Id.* at 25,722.

In *Massachusetts v. EPA*,[155] the Supreme Court confirmed that EPA's and NHTSA's regulatory authorities in the context of vehicular emissions are "wholly independent."[156] EPA's authority to regulate mobile sources of GHGs under the Clean Air Act was established under *Massachusetts v. EPA*, and this holding has not been disturbed by *West Virginia v. EPA*, decided in 2022.[157] EPA still has the regulatory authority to regulate GHG emissions from mobile sources, and this authority is not, for now, implicated in the major questions doctrine.[158]

NHTSA's regulatory authority exists separately and apart from EPA's regulatory authority. Congress directed the Secretary of Transportation to set fuel economy standards at the "maximum feasible average fuel economy level" that the Secretary decides auto manufacturers can achieve that year.[159] EPCA requires that the agency consider four key factors when setting fuel economy standards: "[1] technological feasibility, [2] economic practicability, [3] the effect of other motor vehicle standards of the Government on fuel economy, and [4] the need of the United States to conserve energy."[160] Environmental justice is not part of the agency's express statutory mandate.[161] In 2008, the Ninth Circuit assessed how NHTSA should balance these four statutory factors.[162] Petitioners argued that when promulgating its CAFE standard rule in 2007, NHTSA failed to set the maximum feasible level through the agency's cost-benefit analysis, and also failed to give due consideration to the need to con-

155. 549 U.S. 497 (2007).

156. *Id.* at 532.

157. *See* 142 S. Ct. 2587, 2610, 2615–16 (2022) (confirming the narrow scope of the opinion in relation to the major questions element of the case as focused on Section 111(d) of the Clean Air Act); *see also id.* at 2641 (Kagan, J., dissenting).

158. One of the most recent incursions into the *Chevron* deference doctrine is the major questions doctrine ("MQD"), now often referred to as the major questions canon of statutory interpretation. MQD is openly hostile to agency assertions of authority, and as Professor Nathan Richardson notes, it constitutes a reversal of the *Chevron* deference doctrine. Nathan Richardson, *Antideference: COVID, Climate, and the Rise of the Major Questions Canon*, 108 VA. L. REV. ONLINE 174, 177 (2022). Although its roots are contested, the MQD was first articulated in *Food & Drug Admin.* v. *Brown & Williamson Tobacco Corp.*, 529 U.S. 120 (2000). *But see* Cass R. Sunstein, *Chevron Step Zero*, 92 VA. L. REV. 187, 236–38 (2006) (identifying a trilogy of cases, beginning with *MCI Telecomms v. Am. Tel. & Tel. Co.*, 512 U.S. 218 (1994), in 1994, as the root of the MQD). In *West Virginia v. EPA*, the majority opinion delivered by Chief Justice Roberts expressly adopts the MQD to deny the EPA the ability to pursue the regulatory program in the Clean Power Plan. 142 S. Ct. at 2610, 2615–16.

159. 49 U.S.C. §§ 32902(b), 32901(a)(6).

160. *Id.* § 32902(f).

161. *See id.*

162. *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1195 (9th Cir. 2008).

serve energy (factor four).[163] The court decided that EPCA provides discretion to NHTSA on how to balance these statutory factors, "as long as NHTSA's balancing does not undermine the fundamental purpose of EPCA: energy conservation."[164]

NHTSA adopted an escalating approach in the new rule—the CAFE standards increase in stringency as the share of ZEVs in the total U.S. fleet increases.[165] This approach appears to appropriately balance the four statutory factors set out above (in particular, technological feasibility, economic practicability, and the need to conserve energy) and aligns with EPA's new rule to reduce tailpipe emissions (factor three).[166] EVs are technologically feasible, economically advantageous to automakers, and will contribute to national energy conservation goals, particularly in the reduction of oil use. These new rules are particularly important as EPA's authority to regulate stationary sources, such as power plants, has been constrained by the Supreme Court.[167]

Agencies can incentivize industry innovation by including technology-forcing elements in their rules when allowed by their statutory mandate. In 2013, the D.C. Circuit assessed EPA's technology-forcing regulations in the context of biofuels.[168] The Clean Air Act prescribes renewable fuel standards that EPA must promulgate.[169] While its statutory mandate under the Act is broad, the court (including then-Circuit Judge Kavanaugh) assessed this mandate in the context of the specific provision at issue, which required that EPA base its estimate of mandated cellulosic biofuel volumes in line with the Energy Information Agency's projections.[170] EPA failed to do this, and the court held that an agency "may base a standard or mandate on future technology when there exists a rational connection between the regulatory target and the presumed innovation."[171] Innovation-minded regulations are acceptable, particularly where government pressure joins forces with industry specialization and competence.[172]

In the context of both EPA and NHTSA rules, the technology for EVs is available, and automakers are both collaborating with the agencies and willing to invest in the new technology. EPA, in fact, reduced its battery cost estimates

163. *Id.* at 1181.

164. *Id.* at 1195 (remanding rule back to NHTSA as the agency's failure to monetize the benefits of carbon emissions reductions was arbitrary and capricious).

165. Corporate Average Fuel Economy Standards for Model Years 2024–2026, 87 Fed. Reg. 25,710, 25,720 (May 2, 2022) (to be codified at 49 C.F.R. pts. 531, 533, 536, 537).

166. *Id.* at 25,722.

167. *See* West Virginia v. EPA, 142 S. Ct. 2587, 2595 (2022).

168. Am. Petroleum Inst. v. EPA, 706 F.3d 474, 475 (D.C. Cir. 2013).

169. 42 U.S.C. § 7545(o).

170. *Id.* § 7545(o)(7)(D)(i).

171. *Am. Petroleum Inst.*, 706 F.3d at 480.

172. *Id.*

in consultation with industry.[173] With both rules, it seems that the incentives of both the government and industry are aligned. There should not be issues on judicial review with the major questions doctrine as these are non-ancillary statutory provisions, regularly exercised by both EPA and NHTSA.[174] These rules are likely to usher in an even swifter transition to EVs. However, neither rule includes explicit justice mandates nor considers the negative consequences increased EV sales may have for tribal communities if domestic mining for critical minerals increases, as these considerations are not part of the statutory mandates of these two agencies. These rules, however, will have distributed benefits for communities of color, particularly highway-adjacent communities, which have historically borne the brunt of transportation-based emissions. However, there have not been equivalent regulatory updates to mining regulations, meaning the shift to domestic mining, which will accompany the EV transition, is likely to be harmful to many tribes.

B. The 1872 General Mining Act: A Settler-Colonial Approach

The 1872 General Mining Act was passed during a period of exploration and exploitation of the American West. The removal of lands from tribal sovereignty by the federal government was often inspired by the government's desire to attract settlers to occupy and mine the land for minerals and other resources.[175] The term "settler-colonialism," which was coined in literature with Patrick Wolfe's article in 2006, focuses on permanent occupation of a territory and the removal of Indigenous people.[176] Comments submitted in 2020 by the Nez Perce Tribe regarding the Stibnite gold project illustrate this extractive and exploitative history, including the egregious and lasting role of mining in the Tribe's history of hardship and loss.[177] Mining befouled "pristine waters and sacred places."[178] The comment also documents the history of the U.S. Government in effectively prioritizing mining rights over tribal treaty rights by not enforcing tribal treaty obligations but instead unilaterally establishing "new"

173. Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards, 86 Fed. Reg. 74,434, 74,478 (Dec. 30, 2021) (to be codified at 40 C.F.R. pts. 86, 600).

174. *But see* Petition Submitted by States of Texas, Arkansas, Indiana, Kentucky, Louisiana, Mississippi, Montana, Nebraska, Ohio, South Carolina, and Utah for Judicial Review of the NHTSA Rule, Texas v. Nat'l Highway Traffic Safety Admin., No. 22-01144 (D.C. Cir. June 30, 2022).

175. Mills & Nie, *supra* note 117, at 57–73; Letter from Nez Perce Tribal Executive Council (Oct. 27, 2020) *in* COMMENTS ON THE STIBNITE GOLD PROJECT DRAFT EIS, 1–5 [hereinafter Nez Perce Comment Letter].

176. Anne Bonds & Joshua Inwood, *Beyond White Privilege: Geographies of White Supremacy and Settler Colonialism,* 40 PROGRESS HUM. GEOGRAPHY 715, 716 (2016).

177. Nez Perce Comment Letter, *supra* note 175, at 2.

178. *Id.*

treaties that effectively removed lands from tribal management and making them available for industrial activities such as mining.[179]

A recent U.S. Government Accountability Office ("GAO") report on federal land management confirms the federal government's historical preference for mining activities on land previously occupied by tribes—even in violation of existing treaties.[180] The federal government facilitated mining on or near tribal lands or on public lands where tribes had reserved rights and resources.[181] An early example given is of mining prospectors trespassing on Nez Perce land in Idaho in 1860 in violation of rights reserved by the 1855 Treaty.[182] Instead of enforcing the treaty rights and removing the trespassers, the U.S. Government reduced the scope of land allocated to the Tribe by 90%, making that land available instead for exploitation and extraction.[183] Mining and its regulation are intimately connected with the removal of tribes from their land and the occupation of that land by federal agencies pursuant to a settler-colonial approach.

The General Mining Act regulates the mining of locatable minerals (minerals not covered by other mining laws), which includes hardrock minerals and metals such as gold, silver, copper, uranium, lithium, as well as critical minerals.[184] Approximately 97% of the 748 authorized hardrock mining operations on federal lands are subject to the locatable system under the General Mining Act.[185] BLM and USFS are responsible for managing locatable or hardrock mining activities on federal land.[186] Each agency has a separate but similar regu-

179. *Id.* For a history of the federal government's evolving relationship with tribes, see FLETCHER, *supra* note 10.

180. U.S. GOV'T ACCOUNTABILITY OFF., GAO-21-299, FEDERAL LAND MANAGEMENT: KEY DIFFERENCES AND STAKEHOLDER VIEWS OF THE FEDERAL SYSTEMS USED TO MANAGE HARDROCK MINING (2021).

181. *Id.* at 6.

182. Treaty of 1855, Nez Perce Tribe–U.S., art. III, June 11, 1855, 12 Stat. 957.

183. U.S. GOV'T ACCOUNTABILITY OFF., *supra* note 180.

184. Press Release, U.S. Dep't Interior, Interior Department Launches Interagency Working Group on Mining Reform (Feb. 22, 2022), https://perma.cc/VTQ9-EZYH. There are two main statutes that removed minerals from the purview of the General Mining Act and therefore govern mining of minerals other than those regulated by the General Mining Act. The Mineral Leasing Act of 1920 removed minerals such as coal, phosphate, and sodium from the General Mining Act locatable minerals system to a leasing system. Pub. L. No. 66-146, 41 Stat. 437 (codified as amended in scattered sections of 30 U.S.C.). The Materials Act of 1947 removed common minerals such as sand and gravel to a salable mineral system. 30 U.S.C. §§ 601–604. Tribes retain the right to develop or allow others to develop mineral resources on their lands, but lands where they maintain only reserved rights are managed by BLM and USFS in relation to mineral mining. *See* Mills & Nie, *supra* note 117, at 57; BRANDON S. TRACY, CONG. RSCH. SERV., R46278, POLICY TOPICS AND BACKGROUND RELATED TO MINING ON FEDERAL LANDS 6–7 (2020).

185. U.S. GOV'T ACCOUNTABILITY OFF., *supra* note 180.

186. BLM is responsible for managing approximately 247 million surface acres and the USFS approximately 193 million surface acres; BLM manages approximately 700 million subsurface acres of the federal mineral estate. U.S. GOV'T ACCOUNTABILITY OFF., GAO-16-165,

latory program requiring a mining plan of operations prior to approval of the project,[187] and each agency will often require an environmental impact statement be provided under the National Environmental Policy Act ("NEPA").[188]

BLM has some discretion under FLPMA to regulate mining, although this discretion has not been robustly exercised. Both BLM and USFS reported that they rarely deny approval for a mining plan of operations ("MPO") on federal land.[189] For example, the USFS reported to the GAO that it cannot deny a "reasonable plan" of operation under its regulations for locatable minerals as long as the proponent of the project agreed with agency mitigation plans.[190] In a recent Ninth Circuit case, the USFS alleged that it had limited regulatory authority to deny an MPO.[191] The court disagreed, stating that the USFS had no basis for assuming that the MPO included a valid mining claim and the USFS' approval of the MPO was arbitrary and capricious, as no valuable minerals had been claimed.[192]

The USFS has adopted a very narrow approach to its existing regulatory authority and rarely denies a mining plan.[193] BLM has adopted a similarly narrow approach to its regulatory authority. BLM stated to the GAO that it does not have the discretion to deny or reject mining operations on federal land, except to the extent they result in unnecessary or undue degradation of public lands, but the last time the BLM denied a mining plan was in 2001.[194] Both agencies interpret their regulatory authority narrowly, in part due to the outdated nature of the General Mining Act, but also due to a culture of preferring mining claims over tribal reserved rights to land.

The GAO reported two main challenges facing BLM and USFS in reviewing mining plans: the low quality of information provided by applicants and the agencies' own limited resources allotted to hardrock mining programs.[195] While the two agencies are collaborating with other agencies, neither BLM nor USFS are using their existing authority to collect mining fees as

---

HARDROCK MINING: BLM AND FOREST SERVICE HAVE TAKEN SOME ACTIONS TO EXPEDITE THE MINE PLAN REVIEW PROCESS BUT COULD DO MORE 1 & n.4 (2016).

187. *See* 43 U.S.C. § 1732 (BLM); 36 C.F.R. § 228 (1981) (USFS). For example, the requirement of the USFS is to ensure all mining operations are conducted where feasible so as to "minimize adverse environmental impacts on National Forest System surface resources." *Id.* § 228.8.

188. National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321–32, 4333–47 (requiring an environmental assessment for major federal projects).

189. *See* U.S. GOV'T ACCOUNTABILITY OFF., *supra* note 180.

190. *Id.*

191. Ctr. For Biological Diversity v. U.S. Fish & Wildlife Serv., 33 F.4th 1202, 1212–13 (9th Cir. 2022).

192. *Id.*

193. *See* U.S. GOV'T ACCOUNTABILITY OFF., *supra* note 180.

194. *Id.*

195. U.S. GOV'T ACCOUNTABILITY OFF., *supra* note 186, at 21.

authorized by law.[196] Low staffing numbers in field offices paired with a lack of expertise, agency funding, infrastructure, training, and computer technology have hampered agency oversight of the industry.[197] The GAO also reported intra-agency conflict, where BLM resource officials disagreed with BLM mining and mineral officers on the environmental effects of proposed mining.[198] The GAO report recommended better intra- and interagency coordination, as well as improved consultation with tribes.[199] Overall, the GAO found that both BLM and USFS were failing to appropriately balance competing regulatory authorities, preferring mining claims over environmental priorities.[200] This *laissez-faire* approach by agencies to mineral mining has led to significant levels of pollution.[201] The hardrock mining industry has been identified as the nation's largest toxic polluter, with over 500,000 abandoned mines in the country and with an estimated cleanup cost of $50 billion.[202]

The approach of the General Mining Act, combined with a historical preference for allowing mining claims by the agencies themselves, is indicative of a settler-colonial approach to regulation and land management. The term "settler-colonialism" has been built upon by a number of Indigenous scholars.[203] Settler colonialism focuses on permanent occupation of a territory and the removal of Indigenous people.[204] It is based on ecological domination that leads to environmental injustice against Indigenous people.[205] Using an Anishinaabe intellectual framework,[206] Kyle Whyte characterizes settler colonialism as a

196. *Id.* at 29.

197. *Id.* at 22.

198. *Id.* at 31–32.

199. *Id.* at 31.

200. *Id.* at 22–23; *see also* U.S. Gov't Accountability Off., *supra* note 180 (stating agency preferences for mining over other environmental interests).

201. *See* Nw. Mining Ass'n v. Babbit, 5 F. Supp. 2d 9, 11 (D.D.C. 1998) (discussing hardrock mining's environmental consequences).

202. *Toxic Release Inventory National Analysis: Metal Mining*, EPA (Mar. 2022), https://perma.cc/592Y-VQVP; *EPA: National Cost of Leaking-Mine Cleanup Could Surpass $50 Billion*, CBS News (Aug. 13, 2015), https://perma.cc/9SEH-25SV; U.S. Gov't Accountability Off, GAO-20-238, Abandoned Hardrock Mines: Information on Number of Mines, Expenditures, and Factors that Limit Efforts to Address Hazards 16–17 (2020) (identifying approximately 140,000 abandoned hardrock features from USFS, BLM, National Park Service, and EPA, with an estimated 390,000 more abandoned hardrock mine features on federal land not yet identified in agency databases).

203. For an overview of scholarship in this area, see Aimee Carrillo Rowe & Eve Tuck, *Settler Colonialism and Cultural Studies: Ongoing Settlement, Cultural Production and Resistance,* 17 Cultural Stud. 3 (2017).

204. Bonds & Inwood, *supra* note 176, at 716.

205. Kyle Whyte, *Settler Colonialism, Ecology, and Environmental Injustice,* 9 Env't & Soc'y 125, 125 (2018).

206. This framework combines the intellectual tradition of interdependent relationships, systems of responsibilities, and migration. *Id.* at 126.

complex social process where one society seeks to permanently move on to the territory of another, doing violence to the collective continuation of Indigenous societies.[207] It is a land-based process and structure where Indigenous communities are removed and used as labor sources, and laws, regulations, and privatization of land convert land to a for-profit enterprise using extractive industries.[208] It purges cultural and religious significance from the land and focuses instead on privatization and profitability of the land.[209]

The General Mining Act and the agencies' approach to mining claims illustrates this mentality—the regulatory structure originally provided unrestricted access, royalty-free, to lands open to mining, and the protections that now exist are not well enforced by BLM and USFS. The General Mining Act originally provided that "all valuable mineral deposits in lands belonging to the United States . . . shall be free and open to exploration and purchase . . . ."[210] Millions of acres of federal land have now been withdrawn from availability of mining claims under the General Mining Act, which now applies primarily to BLM land and USFS land which has not been withdrawn.[211] The Act provides for a "unique form of property,"[212] allowing citizens the right to enter federal public lands that have not been withdrawn, stake a claim, and obtain exclusive rights to extract minerals without acquiring title to the land itself.[213]

In 1976, Congress enacted FLPMA,[214] which amended the General Mining Act to give the Department of the Interior authority to prevent unnecessary or undue degradation ("UUD") of public lands.[215] FLPMA established standards that BLM administers to regulate hardrock mining activities on federal lands open to mining, although these standards have not been robustly enforced.[216] There are likely to be many more claims for domestic mining of criti-

207. *Id.* at 134–35.

208. Bonds & Inwood, *supra* note 176, at 720–21, 725 (noting the relationship between white supremacy assumptions of ownership of land involved in the standoff with federal agencies by Cliven Bundy and his subsequent interview with the New York Times where he questioned whether Black people would be better off as slaves); *see also* Laura A. Bray, *Settler Colonialism and Rural Environmental Injustice: Water Inequality in the Navajo Nation,* 86 RURAL SOCIO. 586 (2021) (connecting settler colonial theory to water inequality in the Navajo Nation).

209. Bonds & Inwood, *supra* note 176, at 721–22.

210. 30 U.S.C. § 22.

211. 43 U.S.C. § 1714.

212. Best v. Humboldt Placer Mining Co., 371 U.S. 334, 335 (1963).

213. Min. Pol'y Ctr. v. Norton, 292 F. Supp. 2d 30, 32 (D.D.C. 2003) (citing Union Oil Co. v. Smith, 249 U.S. 337, 348–49 (1919)).

214. 43 U.S.C. § 1732(b) (authorizing the BLM Administrator "to take any action necessary to prevent unnecessary or undue degradation of the [public] lands . . .").

215. *See infra* Part III.B.

216. *Id.*

cal minerals, partly as a result of the EV transition, meaning many tribes will be subject to more environmental pollution from these activities.[217]

Rapid increases in domestic mining for critical minerals, without parallel robust environmental and cultural protections afforded to tribal communities, have the potential to further displace and dispossess tribes.[218] Tribes are often, on the one hand, prototypical EJ communities: they have historically borne disproportionate burdens associated with energy production and for fossil fuels in particular.[219] They are also uniquely vulnerable to climate change, which will affect their health and well-being, as well as their cultural and natural resources.[220] While the harms from the fossil fuel industry are very real, access to fossil fuel resources have led to economic benefits for some tribes from the development of those resources.[221] Withdrawing the economic advantages of fossil fuel industries while adding new harms from domestic mining for minerals would impose a heavy burden on these communities for the clean energy transition, including the EV transition.

Tribes also differ from other EJ communities in several ways. They are sovereigns, with distinct and unique independent political status, although their sovereignty has changed over time due to interactions with the federal government.[222] Tribes have unique relationships with the land, including historical management of resources, and cultural and spiritual associations with the land.[223] Tribes are both racialized and political communities.[224]

Considering the renewed focus on domestic mining in the United States, it is imperative that these communities and their environmentally sensitive, sacred, and culturally important areas and landscapes be protected. Since it is unclear whether Congress will agree to update the General Mining Act to provide environmental protections, BLM should promulgate new regulations which update the UUD rule, and the USFS should update its mining regulations to ensure a more even balance of environmental protections, including further protections to tribes. Sacred and culturally significant areas are particularly important to tribes, as recent litigation regarding proposed lithium mining in Nevada illustrates.[225]

---

217. Elizabeth Kronk Warner, Kathy Lynn & Kyle Whyte, *Changing Consultation*, 54 U.C. DAVIS L. REV. 1127, 1130–32 (2020).
218. *Indigenous Leadership in Emerging Green Economies*, *supra* note 18.
219. Eisenberg & Kronk Warner, *supra* note 69, at 283.
220. Kronk Warner et al., *supra* note 217, at 1130–32.
221. Laurie Stone, *Native Energy: From Fossil Fuels Below to Renewables Above*, ROCKY MOUNTAIN INST. (July 22, 2014), https://perma.cc/EX8K-PVCP.
222. Elizabeth Kronk Warner & Heather Tanana, *Indian Country Post-McGirt: Implications for Traditional Energy Development and Beyond*, 45 HARV. ENVTL. L. REV. 249, 253–54 (2021).
223. *Id.* at 286–87; Kronk Warner et al., *supra* note 217, at 1130.
224. *See* Eisenberg & Kronk Warner, *supra* note 69, at 287.
225. While the Peehee Mu'huh or Thacker Pass litigation revolves around lithium, the most well-known critical mineral in the EV transition, there are a number of minerals and mining

C. Peehee Mu'huh or Thacker Pass Litigation

The largest lithium-clay deposit in the United States is at Peehee Mu'huh,[226] or Thacker Pass, Nevada. Two tribes, the Fort McDermitt Paiute and Shoshone Tribe, as well as a nonprofit organization, the People of Red Mountain, oppose lithium mining there, as it will take place near sacred sites including ancestral burial grounds.[227] The Fort McDermitt Paiute and Shoshone Tribe are also concerned about contamination of scarce water resources.[228] Lithium Americas Corp., a lithium mining company based in the United States and Argentina, is planning a thousand-acre site for open lithium mining, a thousand-acre facility for hazardous material, and a sulfuric acid plant to produce the acid which will be used to leach the lithium from the clay deposits.[229] The mining plan for Peehee Mu'huh was issued under the Trump Administration, under a scaled-back NEPA, which accelerated the issuances of permits and reduced environmental protections.[230]

Edward Bartell, a local cattle rancher, initiated the suit, which alleges that BLM's Environmental Impact Statement ("EIS") for the project was flawed, and in particular underestimated the project's effects on groundwater and streams.[231] Bartell was joined by various conservation groups that alleged BLM ignored numerous environmental impacts, including groundwater contamination and harm to the greater sage-grouse.[232] Nearby Indigenous communities—namely, the Paiute Tribe, Reno-Sparks Indian Colony, as well as the People of the Red Mountain, intervened in the lawsuit in the summer of 2021.[233] The intervenors assert that they will endure irreparable harm as a result of the pro-

---

claims that have been litigated, including around antimony, and concerns raised by the Nez Perce regarding such a mining project in Idaho. *See generally* Jack Healy & Mike Baker, *As Miners Chase Clean-Energy Minerals, Tribes Fear a Repeat of the Past*, N.Y. TIMES (Dec. 27, 2021), https://perma.cc/2TBM-2ZDA.

226. The traditional Paiute name for Thacker Pass means "rotten moon," which refers to the history of the Paiute-Shoshone massacre that took place there, where bodies were left unburied and rotten in a part of the pass shaped like a moon. For the cultural and spiritual importance of this site, together with its history, see *Thacker Pass*, RED ROAD TO DC, https://perma.cc/XX4F-RWKE.

227. Manuel Rodeiro, *Mining Thacker Pass: Environmental Justice and the Demands of Green Energy*, 16 ENV'T JUST. 91, 91 (2023).

228. *Id.*

229. Price, *supra* note 107, at 20.

230. The Biden-Harris Administration is proposing to reverse these amendments to NEPA and potentially adding new protections, focused on EJ communities. *See* NEPA Implementing Regulations Revisions, 87 Fed. Reg. 23,453 (Apr. 20, 2022).

231. Complaint at 2–6, Bartell Ranch, LLC, v. McCullough, No. 3:21-cv-00080 (D. Nev. Feb. 11, 2021); *see also* Rodeiro, *supra* note 227, at 91.

232. Western Watersheds Project v. Bureau of Land Mgmt., No. 3:21-cv-00103, 2021 WL 3779147, at *2–4 (D. Nev. July 23, 2021).

233. Bartell Ranch LLC v. McCullough, 558 F. Supp. 3d 974, 974 (D. Nev. 2021).

ject.[234] The harms claimed are both procedural in terms of lack of consultation as well as substantive harms to sacred and cultural sites if the mining goes ahead.[235] Lithium Americas recently agreed to a community benefit agreement with the Fort McDermitt Paiute and Shoshone Tribe, including the construction of a community center, job training, support for cultural education and preservation, and a framework for continued collaboration.[236]

As illustrated by this litigation, a new minerals rush that does not prioritize the interests of tribes and other EJ communities could repeat the tragic legacy of settler-colonial exploitation of tribal lands and communities. It is important that environmental justice principles are applied to agency action to protect EJ communities, including tribes, from harm but also to provide these communities with benefits. Under the Biden-Harris Administration, agencies have been tasked with redressing environmental and racial injustice pursuant to several recent executive orders. Several agencies involved in the EV transition have developed policies and plans to attempt to correct historic injustices.

D. Agencies and Environmental Justice

The first Executive Order ("E.O.") on environmental justice, E.O. 12,898, was ushered in by the Clinton Administration.[237] It focused on the environmental and human health effects of federal policies on minority and low-income communities,[238] directing executive agencies to identify where their policies or actions had a disproportionately high impact on these communities[239] and to develop strategies to address environmental injustice and promote nondiscrimination in federal programs that affect health and the environment.[240]

Despite its wide application, agencies have struggled to fully implement environmental justice concerns into daily agency operations.[241] Part of this struggle may be due to a lack of centralized administrative enforcement mechanisms for the Executive Order.[242] After the Executive Order, tribal land contin-

234. Chris Aadland, *Green Energy's Hidden Costs Spark Opposition,* INDIAN COUNTRY TODAY (Apr. 7, 2022), https://perma.cc/V7EE-8XHA.

235. *Id.*

236. *Lithium Americas Signs Community Benefits Agreement with Fort McDermitt Pauite and Shoshone Tribe*, GLOBENEWSWIRE (Oct. 20, 2022), https://perma.cc/T35J-JCVQ.

237. Exec. Order No. 12,898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, 59 Fed. Reg. 7,629 (Feb. 16, 1994).

238. *Id.* at 7,629.

239. *Id.*

240. *Id.* at 7,630.

241. *See* Richard L. Revesz, *Regulation and Distribution,* 93 N.Y.U L. REV. 1489, 1535 (2018).

242. *Id.* at 1541–42, 1567 (attributing the differential implementation of E.O. 12,898 by agencies with the robust implementation of Executive Order 12,866 on cost benefit analysis and the successful implementation of the latter to the built-in enforcement mechanisms of the Office

ued to be exploited, with tribal communities experiencing high levels of pollution and contamination as a result.[243] In a 2001 study of agency adoption of E.O. 12,898, seven years after the Executive Order was published, very few agencies had embedded environmental justice activities.[244] A 2021 study, based on interviews from agency staff from 2011 to 2019, documents a number of constraints that persist at federal and state agencies when attempting to implement EJ-related rules, plans, and policies.[245] Professor Jill Harrison identified some of these obstacles as a lack of agency resources and EJ expertise but also a perceived lack of regulatory authority for agencies to pursue EJ initiatives.[246] For example, at EPA, which arguably has the most experience in implementing EJ, EPA rule-writers stated that EJ analyses were rarely done, and consideration of EJ in EPA guidance documents was considered to be voluntary.[247]

Some obstacles were more pernicious. For example, Harrison documented that some agency staff considered environmental justice as just a "fad," which would dissipate on a change of administration, or not part of the mission of the agency.[248] Other agency staff claimed that the agency should be ideologically neutral and therefore not focus on issues of race or income, that racism was a thing of the past, or that the pursuit of EJ was reverse racism.[249] President Trump exacerbated this attitude within agencies with an Executive Order in 2020 that prohibited agencies or federal grant recipients from using "divisive concepts" such as race, which would, according to the Executive Order, lead to race or sex stereotyping or scapegoating.[250]

Despite these hurdles, the EJ movement is here to stay, partly due to the national reckoning with racial discrimination, but also due to the disparate impacts of COVID and climate change on communities of color.[251] Some agencies have prioritized environmental justice, such as the Department of Energy

---

of Information and Regulatory Affairs. However, there is no similar enforcement mechanism for E.O. 12,898).

243. Kronk Warner & Tanana, *supra* note 222, at 252.

244. Denis Binder et al., *A Survey of Federal Agency Response to President Clinton's Executive Order No. 12,898 on Environmental Justice*, 31 ENV'T L. REP. 11133, 11135 (2001).

245. *See generally* JILL HARRISON, FROM THE INSIDE OUT: THE FIGHT FOR ENVIRONMENTAL JUSTICE WITHIN GOVERNMENT AGENCIES (2021) (providing clear examples of other obstacles to enshrining environmental justice within federal and state agencies, such as resistance by agency staff).

246. *Id.* at 35, 44–45.

247. *Id.* at 44–45.

248. *Id.* at 86 (also referencing an EPA memo to EJ staff rejecting their report about racial environmental inequality by asserting that the agency "does ecology, not sociology").

249. *Id.* at 92, 107.

250. Exec. Order No. 13,950, 85 Fed. Reg. 60,683 (Sept. 20, 2020) (subsequently revoked by Exec. Order No. 13,985 (Jan. 20, 2021)).

251. Clifford J. Villa, *No "Box to Be Checked": Environmental Justice in Modern Legal Practice*, N.Y.U. ENV'T L.J. 157, 158 (2022).

and the Department of Transportation, making EJ a "flagship initiative," at least in terms of their overt policies.[252] After an initial burst of activity after the publication of E.O. 12,898, flagging levels of commitment at the highest levels of the agency—the Secretary or Administrator—still stymied agency implementation.[253] President Biden has appointed EJ advocates and racially diverse appointees at the highest levels of agencies, including at EPA, the Council on Environmental Quality, and BLM.[254] The Biden-Harris Administration also issued new executive orders that focus on environmental and racial justice and formed an interagency working group to update the General Mining Act.[255] The working group was tasked with ensuring that legislative updates did not replicate the old era of exploitative extraction.[256] The working group held its first external stakeholder consultation on May 10, 2022,[257] and issued a request for information on amending the Act on May 30, 2022.[258] The agency plans to hold virtual and in-person listening sessions as well.[259]

Despite these efforts, agencies have struggled to fully embed environmental justice into their plans and policies. Agencies are not entirely to blame for their poor history of advancing environmental and racial justice. Administrative law itself may have racial blind spots. In a recent article, Professors Christina Ceballos, David Engstrom, and Daniel Ho argue that the Administrative Procedure Act not only erased race from its purview but that modern administrative law was constructed around this erasure.[260] Administrative law has thus excised differential treatment by race from its domain and instead focused on procedural "hard look" review.[261]

Most administrative law scholarship similarly omits an assessment or critique of administrative law from an environmental justice or racial justice ap-

252. Binder et al., *supra* note 244, at 11144–47.

253. *Id.* at 11149.

254. Alana Wise, *Biden Pledged Historic Cabinet Diversity. Here's How His Nominees Stack Up*, NPR (Feb. 5, 2021), https://perma.cc/AA3L-HZZC.

255. *See generally* Press Release, U.S. Dep't Interior, Department of Interior-led Interagency Working Group on Mining Regulations, Laws, and Permitting (Feb. 22, 2022), https://perma.cc/ZUE8-9DC7.

256. *See id.*

257. Press Release, White House, Readout of the White House's First Stakeholder Convening on Mining Reform (May 11, 2022), https://perma.cc/SY76-QZTD.

258. Request for Information to Inform Interagency Working Group on Mining Regulations, Laws, and Permitting, 87 Fed. Reg. 18,811 (Mar. 31, 2022).

259. Press Release, U.S. Dep't Interior, Mining Reform Interagency Group to Hold Public Listening Sessions, Extends Comment Period to Gather Feedback for Reforming Mining Law (July 13, 2022), https://perma.cc/LUK9-E6E2.

260. Christina Isabel Ceballos, David Freeman Engstrom & Daniel E. Ho, *Disparate Limbo: How Administrative Law Erased Antidiscrimination*, 131 YALE L.J. 370, 376 (2021).

261. *Id.* at 376.

proach.[262] Professor Bernard Bell argues that most administrative law scholarship appears to be color-blind.[263] He provides an alternative account of the administrative state—being one that has failed to live up to its responsibilities to counteract those who wield private power and failed to protect vulnerable members of society.[264] Recent scholarship has started to highlight the environmental and racial injustices facilitated by current approaches to administrative law.[265] Agencies are heeding the call for racial and environmental justice and engaging in justice-oriented transitions.

Advancing climate, environmental, and racial justice is a priority for the Biden-Harris Administration. Several executive orders mandate a justice- and equity-based transition within federal executive agencies and require federal agencies to adopt a whole-of-government approach to the climate and racial justice crises.[266] Executive Order 13,990 addresses environmental and economic justice and focuses the administration's effort on investing and building a clean energy economy that creates well-paying union jobs for disadvantaged communities.[267] Executive Order 14,008 mandates that agencies "make achieving environmental justice part of their missions by developing programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate-related, and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts."[268]

The Biden-Harris Administration is also focused on racial justice. Executive Order 13,985 on Advancing Racial Equity is based on a systemic approach to racial injustice and requires agencies to "recognize and work to redress inequities in their policies and programs that serve as barriers to equal opportu-

262. *Id.* at 378 (stating that racism is often "glossed over" in scholarship and teaching on administrative law).

263. Bernard Bell, *Race and Administrative Law,* YALE NOTICE & COMMENT (Aug. 10, 2020), https://perma.cc/35KW-VCXM.

264. *Id.*

265. *See, e.g.*, Ceballos et al., *supra* note 260; Olatunde C.A. Johnson, *Overreach and Innovation in Equity Regulation,* 66 DUKE L.J. 1771 (2017); Tani, *supra* note 13; Blake Emerson, *The Claims of Official Reason: Administrative Guidance on Social Inclusion,* 128 YALE L.J. 2122 (2019); JACK LIENKE ET AL., INST. POL'Y INTEGRITY, MAKING REGULATIONS FAIR: HOW COST-BENEFIT ANALYSIS CAN PROMOTE EQUITY AND ADVANCE ENVIRONMENTAL JUSTICE (2021).

266. Exec. Order No. 14,008, On Tackling the Climate Crisis at Home and Abroad, 86 Fed. Reg. 7,619 (Jan. 27, 2021); Exec. Order No. 13,985, On Advancing Racial Equity and Support for Underserved Communities Through the Federal Government, 86 Fed. Reg. 7,009 (Jan. 20, 2021).

267. Exec. Order No. 13,990, Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis, 86 Fed. Reg. 7,037 (Jan. 20, 2021).

268. *See* Exec. Order No. 14,008, On Tackling the Climate Crisis at Home and Abroad, 86 Fed. Reg. 7,619 (Jan. 27, 2021).

nity."[269] E.O. 13,985 directs the White House Domestic Policy Council to coordinate efforts to "embed equity principles, policies, and approaches across the Federal Government."[270] The E.O. requires that heads of each agency consult with the director of the U.S. Office of Management and Budget to select certain agency programs and policies for a review and assessment that will determine if there are any accessibility barriers for underserved communities.[271]

E.O. 13,985 requires that agencies produce an equity action plan for addressing any barriers to (i) full and equal participation in enrollment and access to benefits and services of federal programs and (ii) full and equal participation in agency procurement and contracting opportunities.[272] Agencies are tasked with consulting with members of historically underrepresented communities and evaluating opportunities to increase coordination, communication, and engagement with community-based organizations and civil rights organizations.[273]

The Executive Order on Advancing Racial Equity recognizes and documents existing barriers established by current agency systems and policies and asks agencies to undertake an assessment of how they can reduce these barriers.[274] These presidential initiatives mandate not only procedural justice but also a reallocation of benefits, specifically through the Justice40 initiative,[275] to communities historically and actively excluded from benefits by prior federal policies such as redlining, highway siting, and mining.[276] The executive orders adopt both distributive and corrective justice approaches. They recognize the intersection between racial, environmental, and economic justice and adopt a social justice approach. They are important instruments that can serve to align agency action with environmental justice.

Executive orders are potent yet potentially fragile instruments.[277] They are powerful tools available to the White House to direct agencies, with no formal

269. Exec. Order No. 13,985, On Advancing Racial Equity and Support for Underserved Communities Through the Federal Government, 86 Fed. Reg. 7,009 (Jan. 25, 2021).

270. *Id.* at 7,010.

271. *Id.*

272. *Id.*

273. *Id.* at 7,011.

274. *Id.* at 7,010.

275. Shalanda Baker, Brenda Mallory & Gina McCarthy, *Briefing Room: The Path to Achieving Justice40*, WHITE HOUSE (July 20, 2021), https://perma.cc/235T-VMNJ. The Justice40 initiative is a goal of the federal government that 40% of the overall benefits of certain federal investments flow to disadvantaged communities that are marginalized, underserved, and overburdened by pollution. *See Justice40 Initiative,* U.S. DEP'T ENERGY, https://perma.cc/N374-GBX9. These investments include investments in climate change, clean energy and energy efficiency, clean transit, affordable and sustainable housing, training and workforce development, remediation and reduction of legacy pollution, and the development of critical clean water and wastewater infrastructure. *Id.*

276. Shalanda Baker et al., *supra* note 275.

277. Jessica Bulman-Pozen, *Administrative States: Beyond Presidential Administration,* 98 TEX. L. REV. 265, 271 (2019).

prescribed process, to align agency agendas to the President's policy directives.[278] However, they are subject to amendment or revocation by a new administration, and so they are impermanent.[279] Despite their fragility, executive orders can have legally binding effects, especially if their authority stems from acts of Congress or the Constitution itself.[280] Executive Order 12,898 on environmental justice has endured across both Democratic and Republican administrations.[281] There have been recent cases that authorize, and even require, agencies to act in line with E.O. 12,898 and conduct appropriate EJ analyses when considering permits or approval of projects that would affect EJ communities.[282]

While executive orders preclude private rights of judicial review, in the context of E.O. 12,898, several recent cases have required agencies to consider environmental justice factors when exercising their statutory discretion, particularly if the agency chooses to conduct an EJ analysis under NEPA and if its EJ analysis is flawed or inadequate. In *Communities Against Runway Expansion v. Federal Aviation Administration*,[283] plaintiffs argued the Federal Aviation Administration ("FAA") should have conducted a better environmental justice analysis under NEPA.[284] The D.C. Circuit, while acknowledging that the Executive Order did not create a private right to judicial review, allowed the agency's EJ analysis to be subject to arbitrary and capricious review.[285] In *Hausrath v. U.S. Department of the Air Force*,[286] the Idaho District Court found the agency's EJ analysis to be too cursory and found the agency had failed to take a "hard look" at the potential disruptions to local communities from the training

278. ABIGAIL A. GRABER, CONG. RSCH. SERV., R46738, EXECUTIVE ORDERS: AN INTRODUCTION 1 & n.2 (2021) (highlighting that presidential directives can come in various forms, including memoranda, proclamations, press releases, phone calls, as well as executive orders, which are usually recorded in the Federal Register).

279. *Id.* at 2.

280. *See generally* Adam J. White, *Executive Order as Lawful Limits on Agency Policymaking Discretion,* 93 NOTRE DAME L. REV. 1569 (2018) (charting the history of the use of executive orders by presidents).

281. Revesz, *supra* note 241, at 1535–42 (suggesting that while E.O. 12,898 has not been revoked, and so has persisted across administrations, its implementation and enforcement has been inconsistent).

282. *See, e.g.*, Cmtys. Against Runway Expansion, Inc. v. Fed. Aviation Admin., 355 F.3d 678, 688–89 (D.C. Cir. 2004); Hausrath v. U.S. Dep't Air Force, 491 F. Supp. 3d 770, 795 (D. Idaho 2020); Friends Buckingham v. State Air Pollution Control Bd., 947 F.3d 68, 92 (4th Cir. 2020); Vecinos para el Bienestar de la Comunidad Costera v. FERC, 6 F.4th 1321, 1330 (D.C. Cir. 2021).

283. 355 F.3d 678 (D.C. Cir. 2004).

284. *Id.* at 688–89 (disagreeing with the plaintiffs and finding that the FAA's methodology was reasonable and adequately explained).

285. *Id.* at 689.

286. 491 F. Supp. 3d 770 (D. Idaho 2020).

flights.[287] In *Friends of Buckingham v. Virginia Air Pollution Control Board*,[288] the Fourth Circuit vacated and remanded the permit issued by the Virginia Air Pollution Control Board under the Clean Air Act due to its poor EJ analysis, stating explicitly that EJ is "not merely a box to be checked" by agencies.[289] In *Vecinos Para el Bienestar de la Comunidad Costera v. Federal Energy Regulatory Commission*,[290] local communities challenged the Federal Energy Regulatory Commission's ("FERC") permits due to a failure by the agency to conduct an adequate EJ analysis.[291] The D.C. Circuit found that FERC's limitation of its EJ analysis to a two-mile radius around the proposed project area was arbitrary and remanded the decision back to the agency to consider whether the projects would in fact have a disproportionate impact on minority and low-income communities.[292] Where BLM chooses to conduct an EJ analysis on any proposed new mining project, these recent cases may require that the analysis use appropriate methodologies and fully consider EJ communities, including tribes. Agencies involved in the EV transition have developed policies and plans to further embed environmental justice in their work.

E. Emerging Justice Transitions in Agencies

Federal agencies are increasingly taking on the anti-discrimination project by actively promulgating regulations and guidance documents to advance inclusion through "inclusive regulation."[293] These rules and guidance documents emphasize participation, problem-solving, and solution-based approaches.[294]

Agencies, due in part to President Biden's executive orders, have started to engage more actively with discriminatory treatment. This is occurring through both internal organization and the development of agency plans. For example, the Department of Agriculture ("USDA") appointed a fifteen-member independent equity commission, which is charged with evaluating USDA programs and services and will recommend how the agency can reduce barriers for accessing them.[295] The establishment of the commission is an attempt to address and redress past harm by the agency—to fill the racial inequity gap the agency itself

287. *Id.* at 795–800.

288. 947 F.3d 68 (4th Cir. 2020).

289. *Id.* at 92.

290. 6 F.4th 1321 (D.C. Cir. 2021).

291. *Id.* at 1325.

292. *Id.* at 1330–32.

293. Johnson, *supra* note 265, at 1771.

294. *See id.* at 1777–1802, 1804 (noting that these approaches can have downsides by diffusing implementation away from the federal government and are second-best approaches to regulation); *see also* Emerson, *supra* note 265 (documenting the emergence of social inclusion guidance documents under the Obama Administration).

295. *Advancing Equity at USDA,* U.S. DEP'T AGRICULTURE, https://perma.cc/8GRP-X48K.

facilitated.[296] The Department of Energy established the Office of Economic Impact and Diversity, which fosters education in science, technology, engineering, and mathematics and works directly with Historically Black Colleges and Universities.[297] It is also tasked with implementing the Justice40 initiative and has developed eight priority areas.[298]

Pursuant to Executive Order 13,985 on Advancing Racial Equity, executive agencies must develop equity action plans.[299] The three agencies involved in the EV transition (the Department of the Interior, Department of Transportation, and EPA) have all published plans. The Department of the Interior's Plan, published on April 14, 2022, is explicit about its past history of racial injustice.[300] The plan states that "[t]he Department is leaning into its moral and legal responsibilities to tribes by honoring sovereignty and reckoning with the Department's role in the history of injustice and marginalization of Indigenous people."[301]

The action plan highlights four priority action areas: building on the Department's data strategies to collect equity-related data; heightening awareness of opportunities to address structural barriers that hinder participation of underserved communities in procurement opportunities; improving access and awareness of tribal discretionary grant funding; and increasing opportunities to access public lands for historically underserved and disadvantaged communities.[302] The agency published an improved tribal consultation plan in August 2021, which weaves tribal input into the Department's decision-making processes and established a Diversity, Equity, Inclusion, and Accessibility Council to ensure equity is embedded in the long-term culture of the Department.[303] The agency is also partnering with the Department of Transportation to implement the Infrastructure Investments and Jobs Act[304] and entered into a memorandum of understanding ("MOU") with the Department of Transportation on November 17, 2021, to improve transportation access to national parks

296. Vann R. Newkirk II, *The Great Land Robbery: The Shameful Story of How 1 Million Black Families Have Been Ripped from Their Farms*, ATLANTIC (Sept. 29, 2019), https://perma.cc/GJR4-EBLJ. The USDA equity commission's website notes that the commission is tasked with helping the agency objectively confront the "hard reality of past discrimination." *Advancing Equity at USDA*, *supra* note 295.

297. *Office of Economic Impact and Diversity,* U.S. DEP'T ENERGY, https://perma.cc/49T7-RBE7.

298. *Justice40 Initiative,* U.S. DEP'T ENERGY, https://perma.cc/N374-GBX9.

299. Exec. Order No. 13,985, On Advancing Racial Equity and Support for Underserved Communities Through the Federal Government, 86 Fed. Reg. 7,009, 7,010 (Jan. 25, 2021).

300. U.S. DEP'T INTERIOR, *supra* note 120.

301. *Id.* at 1.

302. *Id.* at 2.

303. *Id.* at 4.

304. 23 U.S.C. § 101.

and public lands.[305] This plan illustrates emerging informal coordination mechanisms between at least two agencies involved in the EV transition.

The Department of Transportation's Equity Action Plan has four focus areas: wealth creation via technical assistance and procurement; programmatic enforcement of Title VI; technical assistance centers; and expanding access through the rollout of a national transportation cost-burden measure.[306] This final measure is designed to reduce transit deserts and reduce travel costs for low-income households.[307] The Department established an Equity Leadership Team, consisting of thirty senior leaders from across the Department and an Equity Task Force.[308]

EPA's Equity Action Plan outlines six priority actions on which the agency plans to focus: developing a framework to assess cumulative impacts of EPA decisions on underserved populations; building the capacity for environmental justice communities to provide their experience and implement projects; increasing its internal capacity to engage with relevant communities; strengthening EPA's civil rights compliance and enforcement; integrating community science into EPA decision-making; and creating more equitable procurement and contracting practices.[309] The plan has three objectives: promote environmental justice at the federal, tribal, state, and local levels; embed environmental justice into EPA programs and policies; and strengthen civil rights enforcement in environmental justice communities.[310]

While these action plans are laudable, like some executive orders, they are unlikely to be durable across different administrations. The transition to EVs will require multi-faceted actions and activities by agencies. Entrenching environmental justice within agencies also requires cultural shifts within the agencies, which may be particularly acute if a culture of acquiescence around mining plans has been entrenched in BLM and USFS. These developments can be aided by implementation of agency equity plans, but more work must be done by agencies to ensure the transition to EVs is equitable. Part III articulates principles of environmental justice that can guide agency action, as well as concrete recommendations to further embed environmental justice in the EV transition.

305. U.S. Dep't Interior, *supra* note 120, at 4.

306. U.S. Dep't Transportation, Equity Action Plan 3 (2022), https://perma.cc/6TBN-CLZV.

307. *Id.* at 10.

308. *Id.* at 4.

309. EPA, Exec. Order No. 13985 Equity Action Plan 3 (2022), https://perma.cc/78JD-4Y4G.

310. *Id.*

III. Agency Action on EVs: Justice-Oriented Opportunities

Agencies have a poor history of implementing environmental justice initiatives, but the executive orders and agency plans outlined above can help agencies do a better job around environmental justice issues. However, these existing plans are not sufficient, and agencies must do more. BLM and USFS should update their mining regulations. Updated mining regulations would better embed environmental justice initiatives within the agency, adhere to the agencies' equity action plans, and align with the Kuehn-Baker taxonomy articulated below.[311] The Kuehn-Baker taxonomy could ensure a more holistic approach to equity and justice is achieved through equity plans. Agencies should also collaborate with each other and with EJ communities. In particular, co-management arrangements should be instituted by agencies with tribes. Agencies should also foster and encourage economic opportunities, specifically around microgrids for EV charging, and market and technological developments that focus on EJ communities.

It is unclear whether amendments recommended to the General Mining Act will attract bipartisan support.[312] If they do not, the General Mining Act will remain outdated. But BLM and USFS can and should update their mining regulations, and, at the very least, BLM should repromulgate regulations it originally issued during the Clinton Administration in 2000.[313] Updated regulations would provide increased protection for tribes, particularly for sacred and culturally important areas, including those situated off-reservation.[314] New regulations could provide for co-management structures with tribes for off-reservation areas. Updated regulations would also mean domestic mining activities would adhere more closely to the Kuehn-Baker taxonomy of environmental justice principles. New regulations would also help to redress the imbalance of sacrifices involved in the transition to EVs.

311. *See infra* Part III.A.

312. U.S. Dep't Interior, *supra* note 96; Jael Holzman & Nick Sobczyk, *Bipartisan Forces Taking Aim at 1872 Mining Law*, E&E News (May 6, 2022), https://perma.cc/4CRH-FYG5; Ty Churchwell, *New Policies Are Needed for Critical Minerals Mining*, Am. Bar Ass'n (Jan. 3, 2023), https://perma.cc/LKF8-NQL9.

313. 43 C.F.R. § 3809.5(f) (2001).

314. Sacred sites are a narrow geographic area—for example, a burial ground. Sacred lands, or sacred landscapes, are broader terms which apply to larger geographic areas—for example, a hill or mountain where a burial ground is located. Many sacred sites, lands, or landscapes are geographically located off of Indian reservations, and therefore tribes have weaker rights to restrict development there. For example, the Religious Freedom Restoration Act of 1993, Pub. L. No. 103-141, 107 Stat. 1488 (1993), provides few protections for Indian religious practices and areas. *See* Navajo Nation v. U.S. Forest Serv., 535 F.3d 1058 (9th Cir. 2008).

A. Principles of Environmental Justice: The Kuehn-Baker Taxonomy

Robert Kuehn articulated a four-part categorization of environmental justice principles in 2000.[315] These four categorizations include distributive justice (the equitable allocation of benefits and burdens), procedural justice (allowing fair access to process), corrective justice (addressing issues of past harms), and social justice.[316] Procedural justice is the best-known of the four, but distributive and corrective justice have been less well absorbed into agency plans, policies, and actions.[317] Distributive justice is related to equal treatment—advocating for equal protection for all and it may favor a particular group in order to address historic inequities.[318] Corrective justice also advocates for remedying harm and encompasses redistributive justice but also restorative justice.[319] The fourth category, social justice, places environmental justice in its larger context of racial, social, and economic justice, illustrating the broader, systemic causes of environmental injustice.[320]

Then-professor Shalanda Baker added to this four-part taxonomy by adding a fifth element in the context of energy justice—centering the voices of marginalized communities.[321] Baker argues that regulatory efforts should focus on how to reduce the multitude of burdens placed on marginalized communities but also proactively provide for their social and economic inclusion in clean energy policy.[322] Together, these five environmental justice principles are referred to here as the Kuehn-Baker taxonomy.

While recent rules promulgated by EPA and NHTSA may provide for the reduction of harms through reduced tailpipe and GHG emissions, they do not proactively provide for procedural, corrective, social justice, or the centering of marginalized voices in the transition to EVs. Climate change, environmental justice, and racial justice are systemic and complex regulatory problems,[323] and

315. Robert Kuehn, *A Taxonomy of EJ*, 30 Env't L. Rep. 10681 (2000).

316. *Id.* at 10681.

317. Jack Lienke et al., *supra* note 265, at i–ii; Revesz, *supra* note 241, at 1490 (noting that distributional issues have been relegated outside of agency rules to tax and spend policies).

318. Sumudu Anopama Atapattu, *Justice for Small Island Nations: Intersections of Equity, Human Rights, and Environmental Justice, in* Climate Justice: Case Studies in Global and Regional Governance Challenges 299, 307 (Randall S. Abate ed., 2016).

319. *Id.* at 309.

320. Kuehn, *supra* note 315, at 10698.

321. Shalanda Baker, Revolutionary Power: An Activist's Guide to the Energy Transition 31 (2021).

322. *Id.*

323. Barry E. Hill, Environmental Justice: Legal Theory and Practice 2 (4th ed. 2018).

they are intertwined.[324] The Kuehn-Baker taxonomy would lead to a more systemic, justice-oriented approach by agencies, including BLM and USFS. The Kuehn-Baker taxonomy is applied in recommendations articulated in the following sections.

B. Updating the BLM and USFS Regulations

FLPMA amended the General Mining Act. One of FLPMA's purposes is to balance two vital interests: the need for domestic sources of minerals and mitigation of environmental consequences of hardrock mining.[325] FLPMA establishes that it is the policy of the United States that "public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values."[326] FLPMA also provides that public lands be managed, by BLM, on the basis of multiple use and sustained yield.[327]

Multiple use is defined as "management of the public lands . . . so that they are utilized in the combination that will best meet the present and future needs of the American people," and includes "a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources."[328] Sustained yield is defined as "the achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the public lands consistent with multiple use."[329]

The Secretary of the Interior is obligated, under the Act and with public involvement, to develop land use plans, coordinate with land use planning and management programs of and for tribes, and use and observe the principles of multiple use and sustained yield.[330] The Secretary is also required to consider several factors, including present and potential uses of the land,[331] the relative scarcity of the values involved,[332] and long-term benefits to the public weighed against short-term benefits.[333]

---

324. Uma Outka, *Environmental Justice Issues in Sustainable Development: Environmental Justice in the Renewable Energy Transition,* 19 J. ENV'T & SUSTAINABILITY L. 60, 68–69 (2012); Eisenberg & Kronk Warner, *supra* note 69, at 283.

325. Min. Pol'y Ctr. v. Norton, 292 F. Supp. 2d 30, 33 (D.D.C. 2003).

326. 43 U.S.C. § 1701(a)(8).

327. *Id.* § 1701(c)(13).

328. *Id.* § 1702(c).

329. *Id.* § 1702(h).

330. *Id.* §§ 1712(a), (c)(1).

331. *Id.* § 1712(c)(5).

332. *Id.* § 1712(c)(6).

333. *Id.* § 1712(c)(7).

The statutory mandate is therefore broad. It provides the Secretary of the Interior with the authority, by regulation or otherwise, to take any action necessary to prevent unnecessary or undue degradation of public lands.[334] The UUD standard remains undefined in FLPMA. An operator conducting mining operations, which would result in more than casual use, must submit a plan of operations, which BLM must approve before beginning mining projects.[335]

BLM issued regulations in 1980 ("1980 regulations") to implement FLPMA.[336] The 1980 regulations established procedures to prevent UUD from operations authorized by the General Mining Act and defined UUD against a prudent operator standard.[337] UUD is defined in the 1980 regulations as including (1) a surface disturbance greater than that which would normally result when an activity is being conducted by a prudent operator; (2) failure to comply with applicable environmental protection statutes and regulations; and (3) failure to initiate and complete reasonable mitigation measures, including reclamation.[338]

During the Clinton Administration, the Department of the Interior revised the 1980 regulations.[339] Congress recognized the revised regulations to be consistent with National Research Council's assessment of the adequacy of state and federal hardrock mining requirements.[340] The Clinton Administration replaced the 1980 regulations with a new, more restrictive UUD standard in 2000 ("2000 regulations"), known as the "substantial irreparable harm" test.[341] In the 2000 regulations, BLM stated it would deny a mining permit if operations would result in substantial irreparable harm to a significant scientific, cultural, or environmental resource that could not be effectively mitigated.[342] This test was more stringent than the prudent operator standard included in the 1980 regulations. It shifted the perspective of the potential harm from the operator to

334. *Id.* § 1732(b).

335. 43 C.F.R. §§ 3809.11, 3809.5 ("'Casual use' means activities ordinarily resulting in no or negligible disturbance of the public lands or resources.").

336. Surface Management of Public Lands Under U.S. Mining Laws, 45 Fed. Reg. 78,902 (Nov. 26, 1980).

337. *Id.* at 78,910 (UUD being defined as "surface disturbance greater than what would normally result when an activity is being accomplished by a prudent operator in usual, customary, and proficient operations of similar character and taking into consideration the effects of operations on other resources and land uses. . . .").

338. *Id.*

339. Mining Claims Under the General Mining Laws; Surface Management, 65 Fed. Reg. 69,998 (Nov. 21, 2000).

340. Omnibus Consolidated and Emergency Supplemental Appropriations Act of 1999, Pub. L. No. 105-277, 112 Stat. 2681 (1998) (codified in scattered sections of the U.S.C.).

341. Mining Claims Under the General Mining Laws; Surface Management, 65 Fed. Reg. at 70,000.

342. *Id.* at 70,016.

the land. This substantial irreparable harm standard was more protective of sacred and cultural sites, which may not be capable of remediation.

Under the 2000 regulations, a mining permit could also be refused if the site was unsuitable for mining due to its environmental sensitivity or cultural importance.[343] The Clinton Administration also promulgated Executive Order 13,007 regarding Indian Sacred Sites.[344] E.O. 13,007 instructed executive agencies managing federal lands to accommodate access to ceremonial use of Native sacred sites and to avoid adversely affecting the physical integrity of such sites.[345] The preamble to the 2000 regulations expressly references E.O. 13,007, stating that BLM will approve plans of mining operations if the agency decision complied with E.O. 13,007.[346]

The George W. Bush Administration withdrew the 2000 regulations and replaced them with new regulations in 2001 ("2001 regulations") after the Solicitor for the Department of the Interior issued a legal opinion concluding that the 2000 regulations were *ultra vires*.[347] The 2001 regulations withdrew the substantial irreparable harm standard and reverted to a test closer to the "prudent operator" standard from the original 1980 regulations.[348] The 2001 regulations were challenged in 2003.[349]

In *Mineral Policy Center v. Norton*,[350] the D.C. District Court held that the Interior Solicitor's opinion was incorrect and misconstrued the clear mandate of FLPMA.[351] It held that FLPMA in fact vested the Secretary of the Interior with the authority, and even obligation, to disapprove of an otherwise permissible mining operation because although necessary for mining, it would unduly harm or degrade public land.[352] However, the court deferred to the agency's

343. *Id.*

344. Exec. Order No. 13,007, 61 Fed. Reg. 26,771 (May 24, 1996).

345. *Id.*

346. Mining Claims Under the General Mining Laws; Surface Management, 65 Fed. Reg. at 70,013.

347. Mining Claims Under the General Mining Laws; Surface Management, 66 Fed. Reg. 54,834, 54,837–38 (Oct. 30, 2001) (codified at 43 C.F.R. pt. 3800). Meaning "beyond the powers," *ultra vires* is understood to mean an action that is unauthorized—beyond the scope of power allowed or granted by law or by a corporate charter. *Ultra Vires*, BLACK'S LAW DICTIONARY (11th ed. 2019).

348. *Id.* at 54,837.

349. Min. Pol'y Ctr. v. Norton, 292 F. Supp. 2d 30 (D.D.C. 2003).

350. *Id.* at 30.

351. *Id.*

352. *Id.* at 42 (finding that the Solicitor misconstrued the clear mandate of FLPMA, which vests the Secretary of the Interior with the authority and the obligation to disapprove of an otherwise permissible mining operation because, though necessary for mining, it would unduly harm or degrade the public land).

interpretation of FLPMA.[353] The court also held that BLM could protect public lands from any UUD by exercising its discretion on a case-by-case basis.[354]

According to *Mineral Policy Center*, BLM retains its discretion to refuse mining permits where the project would lead to UUD, but this discretion has not been robustly exercised.[355] As set out above, however, both BLM and USFS believe they have constrained regulatory authority to deny mining plans submitted by mining operators.[356] To ensure procedural and distributive justice to tribes, BLM should at the very least repromulgate its 2000 rule, which included the substantial irreparable harm definition.[357] *Mineral Policy Center* provides strong judicial support for the legitimacy of the 2000 regulations and the appropriateness of the substantial irreparable harm definition of UUD.

Once cultural or religious sites are degraded, it is hard to remediate them. The very act of degrading them also negatively affects tribal communities.[358] Professor Rebecca Tsosie has argued that as "Indigenous cultures are 'place-based,' the destruction of the place jeopardizes the cultural existence" of the tribe itself.[359] The 2000 rule would provide a more specific standard for BLM and hopefully lead to more robust protection of sacred and cultural resources from mining operations. Repromulgating the 2000 rule would also protect environmentally sensitive, sacred, and culturally important sites that are off reservation, where tribes have more limited authority.

Alternatively, BLM could expand the rule to institute more stringent requirements for mining in off-reservation areas that are culturally important or where tribes have reserved rights. Sacred sites are narrow geographical areas that arguably do not include larger sacred and culturally important landscapes, such as mountains or rivers.[360] While the 2000 regulations were an improvement on the 1980 regulations, they potentially did not go far enough to protect sensitive and culturally important areas for tribal communities.[361] The substantial irreparable harm rule could be strengthened and expanded by BLM to include a more stringent test of "irreparable harm" for environmentally sensitive and culturally important areas. Such an expanded version of the rule should be

353. *Id.* at 45 (noting that it was an "extremely close" call whether the court would defer to the agency's interpretation of FLPMA in the 2001 Regulations).

354. *Id.* at 44–45, 47.

355. *See supra* Part II.B.

356. *Id.*; U.S. Gov't Accountability Off., *supra* note 180.

357. Mining Claims Under the General Mining Laws; Surface Management, 65 Fed. Reg. 69,998, 70,000 (Nov. 21, 2000).

358. *See supra* Part II.B.

359. Rebecca Tsosie, *Indigenous Sustainability and Resilience to Climate Extremes: Traditional Knowledge and the Systems of Survival*, 51 Conn. L. Rev. 1009, 1028–29 (2019).

360. *See* U.S. Dep't Transportation, *supra* note 306.

361. *See* Exec. Order No. 13,007, 61 Fed. Reg. 26,771, 26,771–72 (May 29, 1996) (defining sacred sites as a specific, discrete, narrowly delineated location on federal land as opposed to a broader approach which would include larger sacred and culturally important landscapes).

included in new USFS regulations to ensure that environmentally sensitive and culturally important land and sacred areas and landscapes (not just sacred sites) are protected, as well as resources where tribes have reserved rights. This wider definition would also better protect areas not located on reservations.

In the preamble to the 2001 regulations, BLM acknowledged that tribes favored keeping the substantial irreparable harm definition out of a concern for the impact of mining on cultural resources.[362] These resources are clearly a concern for tribes today, given the proposed increase of mining operations in or near tribal land.[363] Where these sacred and cultural sites are outside of a reservation, tribes will have far less control over the land, and therefore repromulgating the 2000 rule and issuing new rules with a similar test in USFS regulations would, at the very least, provide clearer authority to both BLM and USFS to protect such areas from mining which may cause irreparable harm. New rules would attempt to address the imbalance and burdens that the transition to EVs is likely to bring to tribes.

Updating mining rules by including co-management provisions for tribes would ensure that the transition to EVs simultaneously provides more distributive justice to tribes and reduces the burdens that existing transportation practices impose on them. *Mineral Policy Center* provides judicial support for BLM to at least repromulgate the 2000 rule and implement the substantial irreparable harm rule.[364] Even if new BLM regulations were litigated, the BLM's existing statutory authority is broad and unlikely to fall foul of the major questions doctrine. In *West Virginia v. EPA*, the major questions doctrine was characterized as a claim to unheralded power by an agency which represents a transformation of its regulatory authority based on an ancillary statutory provision.[365] The BLM's discretion under the UUD standard is certainly not an ancillary provision—the UUD standard is central to the operation of FLPMA.

New mining regulations can help agencies move away from a settler-colonial mentality and better ensure environmental justice. Professor Angela Riley has documented the international movement of Indigenous peoples for nation states to "decolonize" laws, structures, and institutions that negatively impact them, with a growing emphasis on the importance of Indigenous cultural prop-

362. Centers for Medicare & Medicaid Services, 66 Fed. Reg. 54,820, 54,837–38 (Sept. 2, 2020). BLM's response was that these areas could be protected without the substantial irreparable harm definition but instead using FLPMA's existing authority, such as establishing areas of critical environmental concern ("ACECs"). *Id.* For an overview of ACECs' potential, see Michael C. Blumm & Gregory A. Allen, *30 by 30, Areas of Critical Environmental Concern, and Tribal Cultural Lands*, 52 ENV'T L. REP. 10366 (2022).

363. *See Indigenous Leadership in Emerging Green Economies*, *supra* note 18; U.S. DEP'T INTERIOR, *supra* note 96.

364. Min. Pol'y Ctr. v. Norton, 292 F. Supp. 2d 30, 45 n.18 (D.D.C. 2003).

365. West Virginia v. EPA, 142 S. Ct. 2587, 2593 (2022) (characterizing section 111(d) of the Clean Air Act as ancillary on the basis that the EPA had only used it a handful of times).

erty.[366] Updated mining regulations could better protect tribal cultural property. The Biden-Harris Administration, through successive justice-oriented executive orders, has directed agencies to address environmental and racial injustice, and updating mining rules would better adhere to those executive mandates.

However, updated rules by themselves would not ensure that tribes receive the benefit of the other four principles of environmental justice in the Kuehn-Baker taxonomy—procedural, corrective, and social justice, and the centering of their voices in the transition to EVs. In order to fully implement executive orders on environmental and racial justice, agencies should also collaborate and coordinate with each other, as well as with EJ communities, including tribal communities, to better execute these justice mandates.

C. Interagency Coordination

Agency coordination is based on the idea that agencies should work together to solve complex public policy problems.[367] Complex regulatory problems often overlap across the jurisdictions of multiple agencies.[368] Agencies' justice-related efforts are well suited to coordination and cooperation mechanisms in the absence of explicit congressional mandates. Environmental and racial injustice are systemic issues and often need cross-agency coordination to identify and address them. Issues affecting tribes in particular may cross state borders and may require coordination across multiple governments and agencies.[369]

However, agency coordination is not easy or "magical."[370] It can involve turf wars, lack of trust, and culture clashes and can fuel unproductive conflict.[371] Agencies can simply, as a matter of course, observe what another agency is doing and adjust their actions accordingly.[372] Agencies can also share information and data with each other. Informal coordination can also be more explicit, based on conversations, shared practices, and unwritten agreements between agencies.[373] Informal exchanges can also supplement more formal coordination mechanisms.[374] An interagency MOU is the most common instrument of coor-

366. Angela R. Riley, *The Ascension of Indigenous Cultural Property Law*, 121 MICH. L. REV. 75, 128 (2022) (separating cultural property into five categories: cultural preservation, burial sites and funerary objects and their repatriation, sacred sites and ceremonial places, intangible property, and data sovereignty).

367. Blaine G. Saito, *Agency Coordination and Opportunity Zones,* 48 FORDHAM URB. L.J. 1203, 1212 (2021).

368. *Id.* at 1211–12.

369. Kronk Warner et al., *supra* note 217, at 1132.

370. Saito, *supra* note 367, at 1215.

371. *Id.*

372. *See id.* at 1220–23.

373. *See id.*

374. *See id.*

dination.[375] These agreements are flexible and largely unregulated. They can assign responsibilities for specific tasks, establish procedures, and bind agencies to mutual commitments.[376] They can also simply act as information-sharing devices. While informal coordination and cooperation arrangements are second-best to regulation or even guidance documents, their main advantage is that they are unreviewable by courts.[377]

Interagency coordination can supplement and help ensure smooth and integrated implementation of any new BLM and USFS mining rules and ensure cooperative relationships across the various agencies involved in the EV transition. MOUs are negotiated on a voluntary basis, and where agencies are interested in justice-oriented transitions, they have the flexibility and discretion to engage with other agencies to coordinate action and enhance expertise.

EPA and NHTSA will track the manufacture of EVs and the implementation of their proposed regulations by industry.[378] They will maintain strong relationships with the car industry and therefore can anticipate where the batteries for EVs are being or will be sourced, where EVs are being sold, and the affordability and benefits of EVs for specific communities. They can share this information and these trends with BLM, USFS, the Bureau of Indian Affairs ("BIA"), and the Department of Energy, which can then anticipate how and when the ramp up of domestic mining will contribute to the manufacture of batteries. All these agencies could coordinate on investments in market-based and technological advancements.[379]

Of course, there are multiple downsides to this approach. Agency MOUs can fall into disfavor upon a change in administration. They are voluntary, so agencies can choose not to enter into one.[380] Despite the limitations of agency coordination, coordination between BLM, USFS, BIA, the Department of Energy, EPA, and NHTSA could be useful in ensuring more systemic approaches to ensuring justice in the transition to EVs. A new institutional structure, established by the White House, similar to the Office of Information and Regulatory Affairs ("OIRA") but for environmental justice initiatives, would further cement interagency coordination around environmental justice principles. Professor Richard Revesz notes it was the structure and coordinating efforts ex-

375. Jody Freeman & Jim Rossi, *Agency Coordination in Shared Regulatory Space*, 125 HARV. L. REV. 1131, 1161 (2012).

376. *Id.*

377. *Id.*

378. *See generally* PRODUCT INFORMATION CATALOG AND VEHICLE LISTING, NAT'L HIGHWAY TRAFFIC SAFETY ADMIN., https://perma.cc/E4EA-8L6Y.

379. *See infra* Part III.E; *see* DEP'T ENERGY, DEP'T TRANSPORTATION, EPA & DEP'T HOUS. & URB. DEV., THE U.S. NATIONAL BLUEPRINT FOR TRANSPORTATION DECARBONIZATION (2023), https://perma.cc/J5F9-4X2S (despite being an interagency effort, this report does not include the Department of the Interior or the Bureau of Indian Affairs).

380. Freeman & Rossi, *supra* note 375, at 1161.

erted by OIRA that cemented the practice of cost-benefit analysis from Executive Order 12,866, but this agency's review has focused on net benefits and not distributional consequences of agency rules.[381] He recommends a fundamental rethinking of the role of the executive branch on distributional matters, and the establishment of new institutional mechanisms to do this.[382] Ceballos, Engstrom, and Ho also recommend a new institutional approach to enshrining equity and civil rights into agency actions, with a NEPA-like civil rights law that would bind agencies by statute.[383] The authors suggest that OIRA could be refined to directly incorporate disparate impacts and distributional effects across populations.[384] Some type of institutional refinement of OIRA, or another EJ-focused executive branch structure, would ensure a more holistic assessment of the EJ consequences of agency rulemaking and ensure that issues of equity are on equal footing with cost-benefit analyses currently carried out by agencies.

Despite the lack of institutional structures focused on equity, there is evidence that agencies are taking justice-based presidential directives more seriously.[385] Executive orders and interagency coordination are helpful, but not perfect, tools, and the remaining sections recommend additional opportunities which may ease the justice implications of the EV transition.

D. Justice-Based Collaboration and Co-Management with Tribes

Agency collaboration with EJ communities and co-management with tribes can provide those communities with procedural justice. Providing leadership opportunities for EJ communities through true collaboration and co-management can address Baker's fifth principle—centering the voices of the marginalized.[386] While these suggested approaches remain second-best options to regulatory action, these avenues can still work to embed environmental justice in the EV transition.

---

381. *See* Revesz, *supra* note 241, at 1499.

382. *Id.* at 1500.

383. Ceballos et al., *supra* note 260, at 454.

384. *Id.* at 455.

385. *See, e.g.*, *Environmental Justice in Enforcement and Compliance Assurance*, EPA, https://perma.cc/L5RC-VA9M (describing EPA's Office of Enforcement and Compliance Assurance response to E.O. 13,985, directing enforcement staff to strengthen environmental justice considerations in the civil regulatory, criminal, and cleanup enforcement programs focused on environmental justice enforcement); *see also Advancing Equity at USDA,* U.S. DEP'T AGRICULTURE, https://perma.cc/NND9-58XT (describing the USDA's fifteen-member equity commission, established to evaluate USDA programs and services and to recommend how the agency can reduce barriers for accessing them in order to make changes so that USDA programs, services, and decisions reflect the values of equity and inclusion).

386. BAKER, *supra* note 321, at 31.

An equitable and just EV transition should be a priority for agencies. To achieve this, the EV transition should prioritize and benefit EJ communities directly. EJ communities know which programs and projects will best serve their communities, so they should not just be consulted, but they should become collaborators with agencies in the EV transition. Meaningful involvement implies that engaged members of the public, including EJ communities, should have real opportunities to influence the final decisions that agencies make.[387] The nature of this collaboration will vary with each community and should be catered to the needs of each community. The voices of EJ communities should be central to the EV transition. Communities of color, low-income communities, and Indigenous communities should in fact be the architects of the new renewable energy system.[388]

Important indicators for effective consultation include consultations based on respect, mutual understanding, and common goals.[389] They should take place with each party on "equal footing," without a presumption that agencies will have the final word.[390] There are three essential elements of meaningful consultation with tribes: early and consistent tribal engagement, face-to-face interactions, and a deep understanding by federal officials of the cultural and land management practices of tribes.[391] In the context of tribes, consultation is not enough—agency consultation should be a bridge to co-management between agencies and tribes.[392]

While tribes are EJ communities, they are also sovereigns, and agencies have legal obligations to consult with them.[393] But the content of that consultation has often been lacking in detail in treaties, executive orders, and agency-tribal relationships.[394] Meaningful input and control by tribes can provide agencies with localized expertise but also partners in developing plans and policies.[395]

387. Villa, *supra* note 251, at 167.

388. BAKER, *supra* note 321, at 10.

389. Kronk Warner et al., *supra* note 217, at 1133.

390. *Id.* at 1179.

391. Michael C. Blumm & Lizzy Pennock, *Tribal Consultation: Toward Meaningful Collaboration with the Federal Government,* 33 COLO. ENV'T L.J. 1, 10 (2022).

392. *See* Mills & Nie, *supra* note 117, at 57.

393. Eisenberg & Kronk Warner, *supra* note 69, at 284; Blumm & Pennock, *supra* note 391, at 6 (noting that the government-to-government relationship arises out of the trust doctrine, as well as federal-tribal treaties, executive orders and statutes, the U.S. Constitution, and various Supreme Court opinions).

394. Kronk Warner et al., *supra* note 217, at 1150–51 (noting that tribal treaties do not speak to how consultations between tribes and other stakeholders should take place); Blumm & Pennock, *supra* note 391, at 4, 24 (noting that tribal calls for meaningful consultation or any consultation have often gone unheeded, and even newer executive orders on tribal consultation have failed to prescribe the requisite level of detail on what that consultation should look like).

395. *See* Eisenberg & Kronk Warner, *supra* note 69, at 285.

Deep ancestral and tribal connections to what are now federally managed public lands mean tribes should benefit from more than just consultation and collaboration but should become co-managers with federal agencies. Professors Monte Mills and Martin Nie provide several principles that can define this co-management relationship.[396] Tribes should be recognized as sovereign governments and legitimate structures should be established for tribal involvement, with meaningful integration of tribes early and often in decision-making, including the recognition and inclusion of tribal expertise, as well as a dispute resolution mechanism established in the case of disagreement.[397] Projects should be planned and developed in a manner that is consistent with tribal environmental ethics, allowing tribes the freedom to fully exercise their inherent authority[398] and taking into account all the aspects of development on their land—–including economic, health, social, and cultural impacts.[399] Riley explains that Western concepts of law are not expansive enough to fully protect Indigenous cultural property.[400] Tribal approaches to sacred and ceremonial sites often include broader ethics of stewardship and spiritual sustenance, which go beyond basic protectionist approaches.[401] These approaches can be very tribe-specific,[402] so co-management arrangements with agencies for off-reservation sites would be more appropriate arrangements for these areas.

There are already successful examples of tribal co-management structures in North America. The Bears Ears National Monument, for example, established via presidential proclamation an advisory committee and a commission, both of which include tribal elected officers.[403] As President Biden's proclamation, which reinstated the scope of President Obama's proclamation, illustrates, BLM is to "ensure that management decisions affecting the monument reflect the expertise and traditional and historical knowledge of Tribal Nations."[404] The committees are to provide recommendations and guidance on the development and implementation of management plans for the monument.[405] Professors Michael Blumm and Gregory Allen have referred to this management structure as one of the best existing models of a tribal co-management mechanism in relation to public land management.[406] In Canada, the British Columbia provincial government passed the Declaration on the Rights of Indigenous

396. Mills & Nie, *supra* note 117, at 55.
397. *Id.*
398. Eisenberg & Kronk Warner, *supra* note 69, at 287–88.
399. Kronk Warner & Tanana, *supra* note 222, at 260.
400. Riley, *supra* note 366, at 84–92.
401. *Id.* at 116–22.
402. *Id.* at 119.
403. Proclamation No. 9558, 82 Fed. Reg. 1,139, 1,144 (Jan. 5, 2017).
404. Proclamation No. 10285, 86 Fed. Reg. 57,321, 57,332 (Oct. 15, 2021).
405. *Id.*
406. Blumm & Allen, *supra* note 362, at 10373.

Peoples Act (2019) to align their laws with the United Nations Declaration of the Rights of Indigenous Peoples ("UNDRIP").[407] Section 7 allows the government to enter into a decision-making agreement with an Indigenous governing body to jointly exercise the statutory power of decision-making.[408]

Not all approaches to domestic mining have advocated for consultation or collaboration. For example, the 2013 National Strategic and Critical Minerals Production Act, introduced by Republican Congressman Mark Amodei, blamed community participation and environmental review for contributing to mineral supply chain disruptions.[409] In contrast to that approach, there have been calls from Indigenous leaders for Indigenous and other marginalized populations to be at the center of decision-making around mineral mining, as well as enshrining the rights of UNDRIP.[410]

UNDRIP is described as the most comprehensive international instrument on the rights of Indigenous peoples.[411] It establishes a universal framework of minimum standards for the survival, dignity, and well-being of Indigenous peoples.[412] It requires that nation states provide effective mechanisms for prevention or redress from any action which would deprive Indigenous people of their integrity, cultural values, or ethnic identity.[413] Article 11 provides Indigenous people with the right to practice and revitalize their customs and cultural traditions, and to maintain manifestations of them such as historical sites, artifacts, and ceremonies.[414] Nation states must provide redress, including restitution, developed in conjunction with Indigenous people for cultural, intellectual, spiritual, or religious property taken without their free, prior, and informed consent.[415] UNDRIP encapsulates important rights to Indigenous humanity

407. Declaration on the Rights of Indigenous Peoples Act, S.B.C. 2019, c 44 (Can.).

408. *Id.* § 7(1).

409. *See* National Strategic and Critical Minerals Production Act of 2013, H.R. 761, 113th Cong. §102(d)–(e) (2013) (proposing a time limit and schedule for agency review). *Compare* H.R. Rep. No. 113-138, at 6 (2013) (identifying a cumbersome permitting process and NEPA challenges as the single biggest impediment to accelerating domestic mining in the United States) *with id.* at 17 (expressing Senator Markey and Senator Holt's dissenting view that the Bill "threatens hunting, fishing, grazing and conservation by elevating mining above all other uses of our public lands").

410. *Indigenous Leadership in Emerging Green Economies*, *supra* note 18.

411. G.A. Res. 61/295, United Nations Declaration on the Rights of Indigenous Peoples (Sept. 13, 2007).

412. *Id.*

413. *Id.* art. 8(2)(a); s*ee also* Press Release, Am. C.L. Union, United States Endorses International Declaration on Indigenous Rights (Dec. 17, 2010), https://perma.cc/5SM6-UK9P (explaining that while originally voting against it, the United States now supports UNDRIP).

414. G.A. Res. 61/295, *supra* note 411, art. 11(1).

415. *Id.* art. 11(2).

and self-determination to allow for mutual dignity and influence but also to allow for the distribution of mutual competencies and diversify knowledge.[416]

Federal agencies have national legal obligations to consult with tribes, and they have benefits to gain from a partnership of collaboration and co-management. Agencies such as BLM and USFS could include some of the principles of UNDRIP in their relationships with tribes. The UNDRIP principles surrounding cultural, intellectual, spiritual, or religious property and free, prior, and informed consent will be particularly important around mining claims.[417] Collaboration and co-management with tribes, based on the principles of UNDRIP, will not only reduce litigation, such as at Peehee Mu'huh, but foster collaborative relationships that provide opportunities for tribes to benefit from domestic mining where it is appropriate and beneficial to tribes.

BLM and USFS could also encourage, through an updated rule, nominations by tribes of sacred and culturally important areas, particularly where those are located off-reservation. The agencies could also design co-management structures which include tribal governments.[418] These co-management relationships can develop iterative approaches to environmental justice. This type of co-management relationship is particularly important as domestic mining ramps up and cultural and sacred sites are at increased risk.[419] Collaborative co-management structures could ensure these areas are managed in accordance with tribal environmental ethics and respect tribal sovereignty. Collaboration and co-management, however, is not a panacea for tribes or EJ communities more broadly, and difficult tradeoffs may have to be made. But collaboration and co-management can also identify mutually beneficial outcomes where they exist. Part of these beneficial outcomes could be addressing economic inequity in EJ communities.

E. Increased Economic Equity to EJ Communities

Furthering economic justice in the EV transition can address the third and fourth elements in Kuehn's taxonomy: corrective and social justice.[420] Economic inequality is often a marker of EJ communities; environmental burdens bring

416. James (Sa'ke'j) Youngblood Henderson, *The Art of Braiding Indigenous Peoples' Inherent Human Rights into the Law of Nation-States*, *in* CTR. FOR INT'L GOVERNANCE INNOVATION, UNDRIP IMPLEMENTATION: BRAIDING INTERNATIONAL, DOMESTIC AND INDIGENOUS LAWS 13 (2017).

417. G.A. Res. 61/295, *supra* note 411, arts. 3–4, 8(2)(a), 10.

418. Blumm & Allen, *supra* note 362, at 10372 (providing the Bears Ears Commission as an example of successful collaboration with tribal governments).

419. *Indigenous Leadership in Emerging Green Economies*, *supra* note 18.

420. Kuehn, *supra* note 315, at 10693–10702.

economic burdens with them.[421] Addressing economic inequity can be a form of corrective justice for these communities, while also looking at EJ in its larger social context, therefore addressing racial and economic injustice.[422] EJ communities have been subjected to disproportionate impacts due to the fossil fuel economy.[423] Jobs associated with the renewable energy economy are important benefits to which communities of color and low-income communities need access.[424] EJ communities also spend a disproportionately high percentage of their income on energy services.[425] The transition to renewable energy, including EVs, therefore has the potential to upend existing socioeconomic inequality and lead to structural change.[426] Enshrining economic justice within the transition to EVs will start to address corrective and social justice aims in Kuehn's taxonomy.[427]

The transition to EVs is likely to involve huge sums of investment in domestic manufacturing and infrastructure. The Infrastructure Investment and Jobs Act of 2021 ("IIJA")[428] provides a once-in-a-generation level of funding for federal and state infrastructure projects.[429] It provides billions of dollars of investments and includes dedicated funding for the promotion of EVs, and associated infrastructure such as charging stations.[430] IIJA Section 11401 establishes a grant program to "strategically deploy publicly accessible electric vehicle charging infrastructure, hydrogen fueling infrastructure, propane fueling infrastructure . . . and natural gas fueling infrastructure along with designated alter-

421. Carmen G. Gonzalez & Athena D. Mutua, *Mapping Racial Capitalism: Implications for Law*, 2 J.L. & POL. ECON. 127, 127–30 (2022) (identifying profit-making activities like exploitation, expropriation, and expulsion as an extraction of surplus, combined with race-making, which creates sacrifice zones, exposing vulnerable populations to exploitation).

422. BAKER, *supra* note 321, at 10–11.

423. Kronk Warner & Tanana, *supra* note 222, at 251–52; Kronk Warner et al., *supra* note 217, at 1130; Ann M. Eisenberg, *Just Transitions*, 92 S. CAL. L. REV. 273, 305 (2019) (illustrating that fossil fuel communities have also been sacrificed for private profit).

424. Outka, *supra* note 324, at 93.

425. *Id.*

426. BAKER, *supra* note 321, at 10.

427. *See, e.g.*, Rebecca Bratspies, *Decarceration with Decarbonization:* Renewable Rikers *and the Transition to Clean Power*, 13 SAN DIEGO J. CLIMATE & ENERGY L. 1 (2022) (discussing how New York's Renewable Rikers project can help communities "combine decarbonization with decarceration in order to build a more just and sustainable society"); *see also* Rebecca Bratspies, *Renewable Rikers: A Plan for Restorative Environmental Justice*, 66 LOY. L. REV. 371, 389 (2021) (discussing links between increased incarceration rates and the disproportionate siting of fossil-fuel-based peaker plants in EJ communities in New York City).

428. Infrastructure Investment & Jobs Act, Pub. L. No. 117-58, 135 Stat. 429 (2021) (codified in scattered sections of the U.S.C.).

429. Press Release, White House, Biden Administration Releases Bipartisan Infrastructure Law Guidebook for State, Local, Tribal and Territorial Governments (Jan. 31, 2022), https://perma.cc/ZV7D-C4B2.

430. *Id.*

native fuel corridors . . . that will be accessible to all drivers of electric vehicles, hydrogen vehicles, propane vehicles, and natural gas vehicles."[431] IIJA accelerates investments in infrastructure, which will be key to the EV transition.

The Inflation Reduction Act of 2022 includes approximately $369 billion in energy security and climate change programs over the next decade.[432] It includes significant tax credits for the purchase of new and used EVs and economic incentives that benefit overburdened communities.[433] While tax credits are useful, they are not always appropriate for tribal communities not subject to federal income tax or low-income families who do not earn sufficient income to benefit from tax credits.[434] Even with tax credits, the cost of EVs is likely to remain out of reach for many EJ communities.

Other financial incentives that are more appropriate for EJ communities, in addition to tax credits, should be explored by policy makers. For example, in China, electric car subsidies have supported an expanded range of small car offerings.[435] Smaller EVs provide an affordable entry point for consumers.[436] EJ communities should not be priced out of the EV market. California's Clean Vehicle Rebate Program, for example, provides cash rebates to EJ communities from the purchase of an EV, which range from $1,000 to 7,500.[437] These rebates increase as the household income decreases.[438]

Grants and rebates for EJ communities should be prioritized in the transition to EVs. The Department of Transportation Equity Action Plan already identifies 31% of competitive and discretionary grant funding under the IIJA for the financial years 2022–2026 that should be invested in historically overburdened and underserved communities to ensure they reap the benefit of generational investments in infrastructure.[439] Agency grant funding is likely to increase under the Inflation Reduction Act. Discretionary grant funding is one area where agencies could apply and implement the principles of environmental justice. Economic ownership incentives for EJ communities and communities of color, particularly in EV charging stations, should be incentivized through

431. Infrastructure Investment & Jobs Act, Pub. L. No. 117-58, § 11401, 135 Stat. 429 (2021).
432. Press Release, U.S. Dep't Treasury, Treasury Announces Guidance on Inflation Reduction Act's Strong Labor Protections (Nov. 29, 2022), https://perma.cc/4PQ4-NBRA.
433. Inflation Reduction Act, Pub. L. 117-169, 136 Stat. 1818 (2022) (codified in scattered sections of 23, 26, 30, 42, and 43 U.S.C.).
434. Ben Reiter, *Expanding Renewable Energy Tax Credits to Tribal Governments: How Current Legislative Proposals Will Benefit Tribes and Their Members in Their Continued Efforts to Address Climate Change*, 46 Wm. & Mary L. Rev. 687, 693 (2022).
435. Joseph White, *China Has a 10,000 Euro Cost Advantage in Small EVs, Supplier Says*, Reuters (Jan. 5, 2023), https://perma.cc/PV2K-CD7Q.
436. Paoli & Gül, *supra* note 19.
437. *CRPV Overview Project*, California Clean Vehicle Rebate Project, https://perma.cc/REA8-T22Q.
438. *Id.*
439. U.S. Dep't Transportation, *supra* note 306, at 9.

this funding. One way to achieve this is through the use of community microgrids, which can be used as EV charging stations.[440]

Charging infrastructure has not kept pace with the sale of EVs. Approximately 500,000 public charging stations are needed by 2025.[441] Charging stations are particularly important in rural areas, where many tribes live. Fast charging station microgrids are miniature electric grids that can be connected to the traditional grid but can also stand alone as power sources if the grid fails.[442] Microgrids can provide local generation of electricity to power both EVs and local storage devices. They can serve as islands of power, providing economic investments to the local economy, serving thousands of customers, attracting investment, creating jobs, and keeping energy dollars within communities.[443] Microgrids could replace traditional gas stations for charging EVs, and they could be sited in EJ communities. Local ownership or subsidized use of community microgrids for EV charging could provide economic investments within underserved communities. They could also provide significant benefits for rural communities underserved by traditional energy and transportation infrastructure, such as tribal communities.

Grants and funding for distributed renewable energy for homes, along with EV charging stations, should also ease the significant energy burden borne by EJ communities. EVs could provide electricity stability mechanisms as well as backup energy sources.[444] EVs could provide dual benefits. They could act as a portable storage solution for renewables, while at the same time shaving peaks in electricity usage. Vehicle-to-grid services mean EVs could provide critical renewable energy storage solutions to store excess solar electricity and reduce peak demand on the grid, while also providing consumer benefits of reduced electricity bills.[445] EVs could improve the flexibility of power systems and facilitate variable renewable energy penetration by addressing the intermittency issue of renewables.[446]

EVs could also provide emergency power to homes during grid outages. Many EJ communities are located in climate-vulnerable and disaster-prone ar-

440. *How Microgrids Are Transforming EV Charging Infrastructure?*, GRIDSCAPE (Oct. 19, 2022), https://perma.cc/J7QP-ZY4N.

441. Jane Palmer, *Electric Vehicle Charging: First of a Kind National Lab Project Will Stimulate Fast Charging Station Microgrids*, IDAHO NAT'L LAB'Y (Apr. 8, 2021), https://perma.cc/TJG5-5KCA.

442. Jeff St. John, *EV-Charging Microgrids Are Worth More Than the Sum of Their Parts. Here's Why*, CANARY MEDIA (May 23, 2022), https://perma.cc/T2ZZ-F7S3.

443. *Community Microgrids*, CLEAN COAL, https://perma.cc/D6RS-MHAP.

444. *Id.*

445. *See id.*

446. Milovanoff et al., *supra* note 61, at 1104.

eas.[447] These communities are in need of reliable emergency power sources during and after disasters. EVs and community microgrids could provide flexible power sources and economic investment in EJ communities as well as disaster recovery mechanisms for these communities.

Tribes benefit from Tribal Energy Resource Agreements.[448] These agreements incentivize economic investment and promote tribal control over energy projects on tribal land.[449] They also support the national goal of energy conservation and increased use of renewable domestic energy sources.[450] BIA issued updated regulations in 2019, which made it easier for tribes to register a Tribal Energy Development Organization ("TEDO").[451] TEDOs could be used to own and develop microgrids paired with charging stations for EVs. Increased ownership of these installations can provide increased economic justice to these communities. In addition to increasing economic incentives, government funding should also support market and technological developments that move towards cleaner sources for EV batteries.

F. Market and Technological Developments

Market and technological solutions can provide both distributive and corrective justice to communities. Market and technological developments can also support agency action and can expedite some of the EV developments discussed above. Instituting a circular economy approach to prioritize recycling can mitigate some of the justice issues identified in the EV transition.[452] Many critical minerals can be recycled or extracted from other mining waste, but there is currently no market support for these activities.[453] In addition, batteries can be broken down and the minerals recycled. Mineral recycling could reduce demand for critical minerals by 25–40% but likely only by 2035 at the earliest.[454]

447. Press Release, EPA, Report Shows Disproportionate Impacts of Climate Change on Socially Vulnerable Populations in the United States (Sept. 2, 2021); *Climate Changes Health: Vulnerable Populations*, Am. Pub. Health Ass'n (2022), https://perma.cc/59J4-CM2S.

448. 25 U.S.C. § 3504 (updated by the Indian Tribal Energy Development and Self-Determination Act Amendments 2017 to allow tribes to enter into energy-related leases, business agreements, and rights-of-way without the approval of the Secretary of the Interior. Pub. L. No. 115-325, 132 Stat. 4445 (2018) (codified at 25 U.S.C. §§ 167, 3507).

449. *Tribal Energy Resource Agreements (TERAs)*, U.S. Dep't Interior Indian Affs., https://perma.cc/XKS7-LVKS.

450. *See National Action Plan for Energy Efficiency*, EPA (July 25, 2022), https://perma.cc/WXZ6-BNPY.

451. *Tribal Energy Resource Agreements (TERAs)*, *supra* note 449.

452. Earthworks, Just Minerals: Safeguarding Protections for Community Rights, Sacred Places, and Public Lands from the Unfounded Push for Mining Expansion 24–28 (2021), https://perma.cc/JV5W-9S75.

453. Only 5% of lithium is currently being recycled; recycling has its downsides, is currently expensive, and is also dirty and dangerous work. Graham et al., *supra* note 98, at 16–17.

454. *Id.* at 17.

New technologies, such as direct lithium extraction, which uses geothermal energy to extract lithium from brine, have zero carbon intensity, but are not commercially available yet.[455] Speeding up the development of new mining techniques by direct investments by government agencies as well as by industry into research should be a policy priority. Finding critical mineral replacements, as well as recycling, can all help reduce some of the injustices that may accompany the EV transition.

The Biden-Harris Administration is focused on these aims: recycling and developing new technologies that will replace lithium and other critical minerals in battery production. In 2022, the Department of Energy launched a $140 million program to develop a first-of-its-kind critical minerals facility, designed to turn mining waste into vital materials for use in clean energy technology.[456] The refinery will extract and separate critical minerals from unconventional sources, including legacy mining waste such as coal ash, acid mine drainage, and produced water from fracking.[457]

Suppliers and manufacturers can also play an important role. The Initiative for Responsible Mining Assurance ("IRMA") is a market-based certification scheme that requires audits and monitors environmental and social performance at mines.[458] EV manufacturers can verify IRMA certification for supply-chain compliance for EV batteries.[459] For example, Ford and BMW have directed their suppliers to only source from IRMA-certified mines.[460] Additionally, activists have urged Tesla to consider an Indigenous rights policy that must be followed by their suppliers in respect of their EV batteries.[461] While market and technological developments on their own are not sufficient, combined with strong agency action, they will be important components of the EV transition.

455. *Id.*

456. Press Release, Dep't Energy, DOE Launches $140 Million Program to Develop America's First-of-a-Kind Critical Minerals Refinery (Feb. 14, 2022), https://perma.cc/C5KZ-FK9M.

457. *Id.*

458. *See Approach*, Initiative for Responsible Mining Assurance, https://perma.cc/ZD6D-CDPE.

459. *Purchasing Companies*, Initiative for Responsible Mining Assurance, https://perma.cc/LR3R-YBL5.

460. Toby Hill, *BMW Is the First Carmaker to Join Responsible Mining Initiative*, GreenBiz (Jan. 14, 2020), https://perma.cc/ZY66-TDGN; Dominic Ellis, *Ford Joins IRMA and Accelerates into EV Responsible Mining*, Mining Digit. Mag. (Feb. 15, 2021), https://perma.cc/XG3Q-YXD6.

461. Jacob Holzman, *Tesla to Meet with Indigenous Activists as it Plots Future Supply Chain*, S&P Global (Sept. 30, 2020), https://perma.cc/8E9G-CTSX.

Conclusion

The EV transition will have contested justice implications. New rules issued by EPA and NHTSA benefit some EJ communities but could ultimately harm tribes. This regulatory imbalance should be redressed, at the very least, by new rules promulgated by BLM and USFS that would provide more protection for tribes, particularly for environmentally sensitive, sacred, and culturally important areas. While new regulations by EPA, NHTSA, and BLM would be important components of a just EV transition, environmental and racial justice are complex regulatory problems; these new rules may not do enough, on their own, to address all elements of environmental justice.

Agencies must do more. They can coordinate their actions. EJ communities can, and should, be centered in agency plans and policies—and tribes elevated to co-managers. Economic incentives and investments in technological developments could be directly targeted to benefit EJ communities. While administrative law does pose constraints to justice-oriented agency action, these constraints are not insurmountable. Agencies have both regulatory and nonregulatory options available to them. They should exercise all of these options to ensure that the transition to EVs is a just and equitable one.