Policy Brief Focus: Mobility

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Introduction

This policy brief is part of an RMI series focused on federal government action that can move the United States closer to limiting warming to 1.5°C, build a sustainable economy, and create lasting, quality jobs. For the US transportation sector to be 1.5°C-aligned we need 70 million passenger EVs on the road by 2030 and a 20% reduction in vehicle miles traveled per capita. Built from RMI's existing work and thorough knowledge of the supply and demand-side market barriers preventing wide-scale adoption of electric vehicles, the featured ideas below will accelerate adoption and result in significant near-term emissions reductions and other benefits. RMI is available to provide more detailed support to policymakers to further develop these ideas. All policy briefs in the series can be found here.

IDEA #1: Set an Ambitious National Vision for Transportation Electrification

- **Agencies and committees:** Department of Transportation (DOT), Department of Energy (DOE), House Committee on Energy & Commerce—Subcommittee on Energy, House Committee on Transportation and Infrastructure—Subcommittee on Highways and Transit, Senate Committee on Environment and Public Works—Subcommittee on Transportation and Infrastructure, Senate Committee on Energy & Natural Resources—Subcommittee on Energy, House Select Committee on the Climate Crisis
- **Recommended action:**
  - As former President Obama did in 2010 during his State of the Union, President Biden should publicly set an ambitious national target of 70 million passenger EVs on the road by 2030 and 100% EV market share by 2035, putting America on track to be 1.5°C-aligned. Additionally, he should set targets to install 300,000 DC fast chargers and 200,000 Level 2 chargers by 2030.
  - Congress can provide additional funding to programs such as the Congestion Mitigation and Air Quality (CMAQ) program, which supports EV infrastructure projects. The Federal Highway Administration's (FHWA) alternative fuel corridor could be used as a guide to focus funding on where new EV charging stations are most needed.
  - DOE and DOT can facilitate convenings of relevant congressional subcommittees, automakers, utilities, and state and local governments to identify how the federal government can best incentivize the market and break down barriers to achieve these targets (e.g., increase EV tax credits).
- **Authority:** Setting goals that are not tied to mandates does not require authorization. Congress could fund EV infrastructure upgrades using existing programs but would need to pass new legislation to increase funding.
- **Opportunity:** When the Obama Administration set its ambitious target of 1 million EVs by 2015 the goal felt lofty at the time. Now a decade later we are proposing increasing this goal 70-fold. This is certainly ambitious but is also needed to meet the moment. Transportation is the largest contributor to US greenhouse gas (GHG) emissions, accounting for nearly 30% of national emissions.[1] With EVs representing 2% of new vehicle sales, the US EV market is far from being on track to meeting emission goals. The country is in urgent need of a national EV vision with clear targets and perceptible action. Luckily, with an 85% battery cost reduction and the number of EV models increasing 9-fold since 2010, the EV market has come a long way since the last time we set a national EV target.[2] Costs are expected to continue to decrease with projections that by 2025 the average electric car in the United States will be cheaper than a comparable gasoline-powered car.[3]
- **Benefits:** Setting this goal would help accelerate EV adoption in the United States by providing much needed strategical direction and instilling confidence in the EV market, which will also motivate private investment. When Obama set his target, automakers responded with investment and commensurate production plans. It also spurred leading state and local governments to publicly announce commitments to electrify their vehicle fleets.[4] This commitment to the EV market would create new American jobs in the automotive, battery, and charging infrastructure manufacturing sectors that otherwise risk being lost offshore as China and other countries invest heavily to leapfrog the United States in EV technology development and manufacturing. Further, increasing EV penetration would provide public health benefits through improved air quality.

IDEA #2: Create Federal Incentives to Increase US EV Manufacturing Capacity

- **Agencies and committees:** Senate Committee on Energy & Natural Resources—Subcommittee on Energy, House Committee on Energy & Commerce—Subcommittee on Energy, Department of Energy (DOE)
- **Recommended action:**
    - Incentivize capacity-building for American-made EV assembly and battery cell and pack production by introducing competitive grants for manufacturers to build, convert, or retool existing manufacturing sites (including engine and transmission plants).
    - This would also include incentives for building new or retooling existing infrastructure for battery refurbishment, recycling, and raw-material recovery to reduce dependence on imports.
    - This grant can be prioritized based on the development potential of economically distressed areas (such as rust-belt towns), nature of infrastructure being retooled (existing nonfunctional manufacturing or power plants), and volume of manufacturing capacity to be added.
- **Authority:** Legislative action would be required to pass these incentives into law and channel appropriate funding for the grant.
- **Opportunity:** The EV market is still at a nascent stage but this market is expected to grow exponentially.[5] EVs present a prime opportunity for countries to take the lead in global vehicle manufacturing—something China and Europe are positioned to take advantage of as the United States lags.[6] The American auto industry is one of national industrial imperative, with manufacturing of vehicles and parts contributing to over 3% of GDP in 2019.[7] Private investment cannot keep up with incentives and subsidies applied by other national governments to their automotive sectors, warranting federal involvement in ramping up American EV manufacturing. The federal government has tried to support EV manufacturing through the Advanced Technologies Vehicle Manufacturing Loan program, but it has been underutilized due to onerous paperwork and reporting obligations. And although the interest rate is competitive, OEMs can get low-interest loans elsewhere. Repurposing these dollars to a competitive grant program would attract more OEMs and boost manufacturing. Just as the Federal Aid Highway Act of 1956 provided stimulus, jobs, and transformed the US highway network, we need an infusion of funding to transform the American automotive industry into a major global player in EV and battery manufacturing.
- **Benefits:** Investment in EV manufacturing capacity creates employment in the near term through the retooling, building, or expansion of manufacturing facilities, while securing high-paying jobs in the future by ensuring the American automotive and technology-related sectors remain globally competitive. Stimulating national battery production would also reduce dependence on imports and help meet future demand for significant energy storage capacity for grid-scale applications over the next decade.

IDEA #3: Support Private and Public Electric Fleet Adoption

- **Agencies and committees:** General Services Administration (GSA), Department of Energy (DOE), Department of Transportation (DOT), Senate Committee on Energy & Natural Resources—Subcommittee on Energy, House Committee on Transportation and Infrastructure—Economic Development, Public Buildings, and Emergency Management, House Committee on Energy & Commerce—Subcommittee on Energy.
- **Recommended action:**
    - The GSA should formalize President Biden's recent promise made to electrify the federal fleet by building an EV requirement into their procurement guidelines and setting a target year to achieve this goal. To demonstrate federal leadership and help seed the market, we recommend setting this target year before the national EV target set in Idea 2.
    - The GSA purchases federal fleet vehicles directly through original equipment manufacturers (OEMs) at prices below invoice. DOE's Vehicle Technologies Office should coordinate bulk purchase programs for state and city governments to similarly bring down cost.
    - DOE's Vehicle Technology Office should expand their existing tools, technical education, and support programs for fleet managers and include additional technical assistance for unique private and public fleet vehicles that have different requirements than passenger vehicles (e.g., package delivery).[8]
    - Congress should create fleet EV purchase loans to cover higher upfront costs until EVs reach cost parity with ICE vehicles in the next few years.[9] Since the operating cost of EVs is generally lower than ICEs, with an estimated 50% lower repair and maintenance cost averaged over a typical vehicle life and 60% lower fuel cost, these loans can be paid back through operational savings.[10] These should be made available specifically for fleets that do not qualify for federal incentives. For example, public school and university bus fleets that don't qualify for the Low or No Emission grant program should be prioritized, as should city and state government passenger vehicle fleets that do not qualify for Qualified Plug-in Electric Vehicle Tax Credit.
- **Authority:** GSA is a mandatory source of supply for the purchase of all new non-tactical vehicles for executive agencies and the Department of Defense under Federal Property Management Regulation (FPMR). 41 CFR § 101-26.501. Congress would need to pass new legislation to finance EV purchase grants for public fleets.
- **Opportunity:** Private and public fleet vehicles present a prime opportunity for emissions reductions through electrification. The federal government operates 645,000 vehicles (with USPS being the largest fleet operator with 225,000 vehicles), and between local and state governments, utilities, police, taxi, business, and rental fleets there are over 8.1 million automobile and truck fleets in the United States.[11,12] Signalling demand certainty to auto and truck makers is critical in driving private investment into product development and manufacturing, seeding the market, and driving down soft costs. Capital constraints to cover higher upfront costs as well as limitations or lack of knowledge in addressing charging solutions are some of the main hurdles for fleet electrification today.
- **Benefits:** These approaches would provide the federal support required for private and public fleets to make electrification commitments and realize their targets. Further, it would provide the financial launchpad required to accelerate fleet electrification in public fleets until upfront cost parity with ICE vehicles is achieved and long-term operational savings of EVs are realized.

IDEA #4: Reduce Vehicle Miles Traveled through Policy, Funding Reform

- **Agencies and committees:** The U.S. Department of Transportation (USDOT), House Committee on Transportation and Infrastructure—Subcommittee on Highways and Transit, Senate Committee on Environment and Public Works—Subcommittee on Transportation and Infrastructure
- **Recommended action:**
    - Congress should reform or replace the federal gas tax to more accurately capture the environmental, economic, and social externalities associated with driving. It is estimated that the Highway Trust Fund has a deficit of $180 billion.[13] To make up this shortfall, Congress may consider a variety of options:
        - Replace the gas tax with an equitable vehicle miles travelled (VMT) fee, using on-board diagnostics or capturing odometer readings during routine maintenance or inspection tests.
        - Increase the gas tax and index it to inflation to prevent ongoing losses.
    - Congress should reauthorize the Fixing America's Surface Transportation (FAST) Act (P.L. 114-94, 2015) with a focus on public transit, access, and safety. Specifically, this should include the following reforms:
        - Consider Transportation for America's proposal to fund public transit and highways equally.[14]
        - Increase the apportionment of the Surface Transportation Block Grant (STBG) program and, within the program, increase the suballocation allocated for local governments. Additionally, increase the apportionment to the Congestion Mitigation and Air Quality (CMAQ) program.
        - Discontinue funding for highway expansions until the estimated $836 billion backlog of maintenance obligations is addressed.[15,16]
    - USDOT should direct state transportation departments (DOTs) and metropolitan planning organizations (MPOs) to measure and demonstrate progress toward the following performance measures:
        - Greenhouse gas emissions: Reinstate the Obama Administration's inclusion of GHG as a performance measure; require recipients to measure and mitigate GHG.
        - Accessibility: As proposed in the Moving Forward Act (H.R. 2, 2020), create a new performance measure that requires recipients of transportation funding to measure and prove how well their projects connect people to critical destinations, regardless of the mode of transportation.
    - USDOT should provide state DOTs and MPOs with technical support to update their measurement capabilities so they can accurately report the GHG and accessibility metric. For example, employing the use of geographic information systems (GIS) tools to measure and report access to jobs and critical services.
- **Authority:** Performance management requirements were first established through the Moving Ahead for Progress in the 21st Century (MAP-21) Act (P.L. 112-141, 2012) and reaffirmed in the FAST Act. Under these rules, state DOTs must establish targets related to a variety of highway performance measures and track their progress toward meeting those goals. When the FAST Act is reauthorized this year, it will already have a system in place for adopting new performance measures aimed at reducing emissions and improving access. The Connecting Opportunities through Mobility Metrics and Unlocking Transportation Efficiencies (COMMUTE) Act (S.654, 2019) called for the USDOT to develop or make available a data set for states and MPOs to improve transportation planning by measuring the level of access to key destinations.
- **Opportunity:** For decades, federal transportation funding has prioritized highway expansions and road projects aimed at moving personal vehicles across regions as freely as possible. Currently federal funding provides 80% of funding to highway projects, but only 50% of funding to transit projects.[17] This has resulted in massively overbuilt roadways that place the needs of drivers over pedestrians, cyclists, and users of public transit. Meanwhile, the United States is facing a need of $231.4 billion per year just to keep the road network in a state of good repair.[18] If the federal government implements the above policy recommendations, it will help reverse auto-centric transportation practices, reduce carbon emissions, and improve accessibility.
- **Benefits:** A focus on mitigating greenhouse gas emissions by reducing VMT and improving transit will level the playing field in transportation projects, allowing transit and alternative mobility projects to better compete for funding. This will directly benefit black, indigenous, and people of color communities that are four times more likely to commute by public transit and are exposed to much greater levels of pollution than white communities.[19] Further, for the lowest-earning 20% of communities that spend nearly 30% of their income on transportation, these reforms will ensure greater access to economic opportunity, education, and healthcare.[20] Finally, prioritizing transit will create 50 jobs per $1 million invested.[21]

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[4] "Obama Administration Announces New Actions To Accelerate The Deployment of Electrical Vehicles and Charging Infrastructure," Office of the Press Secretary, The White House, https://obamawhitehouse.archives.gov/the-press-office/2016/11/03/obama-administration-announces-new-actions-accelerate-deployment.
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