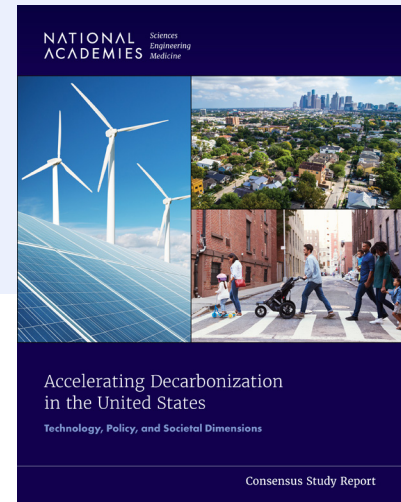


Accelerating Decarbonization in the United States

Technology, Policy, and Societal Dimensions



TRANSPORTATION TO POWER A JUST TRANSITION

Addressing climate change is essential and possible, and it offers a host of benefits—from better public health to improved economic opportunity. To avoid the worst consequences of climate change and reach the nation’s interim goal of 50 percent emissions reduction by 2030 and the ultimate goal of net zero by 2050, it is critical to pursue all opportunities for decarbonization.

The National Academies of Sciences, Engineering, and Medicine have released a comprehensive report with sector-by-sector recommendations to guide policymakers on decarbonizing the U.S. economy over the next decade and beyond. The report addresses the technical and societal elements of this necessary energy transition while providing actionable steps toward achieving deep decarbonization. Learn more and download the report at <https://nationalacademies.org/decarbonization-report>.

One of the sectors with the greatest decarbonization potential is **transportation**. Transport accounts for 29 percent of total greenhouse gas (GHG) emissions and is the largest source of emissions and the second-greatest contributor of illness and death resulting from air pollution in the United States. At the same time, the sector is seeing an increase in clean transportation options. Falling costs of electric vehicles (EVs) have made possible the technology, market, policy, and regulatory conditions that are electrifying—and thereby decarbonizing—personal vehicle and freight transportation, the main contributors to transportation GHG emissions.

KEY RECOMMENDATIONS

By balancing societal, environmental, and economic considerations, the nation can enable an energy transition that benefits everyone. For a full list of findings and recommendations, download the report at <https://nationalacademies.org/decarbonization-report>.

NECESSARY ACTIONS	ANTICIPATED RESULTS
<p>Given the dominance of motor vehicles for personal travel and freight, the federal government should accelerate EV adoption by requiring 100 percent zero-emission light-duty vehicle sales by 2035 and for medium- and heavy-duty vehicle sales by 2045. The federal government should also continue to institute supportive policies, including funding charging infrastructure deployment.</p>	
<p>State governments should adopt California’s vehicle emissions standards as allowed by the Clean Air Act and deploy charging infrastructure.</p>	<p><i>Affordable energy</i></p> <p><i>A strong economy</i></p>
<p>The Department of Energy and the National Science Foundation should focus research and development investments on improving battery design and performance, as well as developing and producing net-zero carbon liquid fuels, especially for aviation.</p>	<p><i>Protection from extreme weather</i></p> <p><i>Healthy, empowered communities</i></p>
<p>Low-income and historically marginalized communities currently burdened by emissions from vehicles on nearby roadways are likely to reap the greatest benefit from emissions reductions as a result of vehicle electrification. However, state and local governments should improve equity in the ability to own and use EVs through policies to support EV purchases by low-income households, equitable distribution of chargers, and expansion of transit options for those who are unable to afford or do not need personal vehicles.</p>	

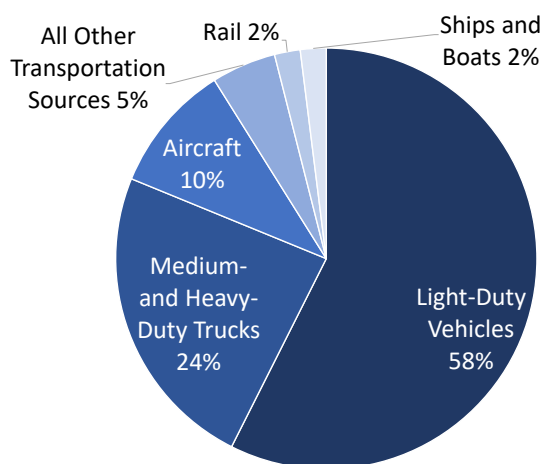


FIGURE 1 Share of transportation GHG emissions by source.

SOURCE: Environmental Protection Agency. 2021. "Fast Facts: U.S. Transportation Sector Greenhouse Gas Emissions 1990–2019." EPA-420-F-21-076. <https://nepis.epa.gov/Exec/QueryPDF.cgi?Dockey=P1013NR3.pdf>.

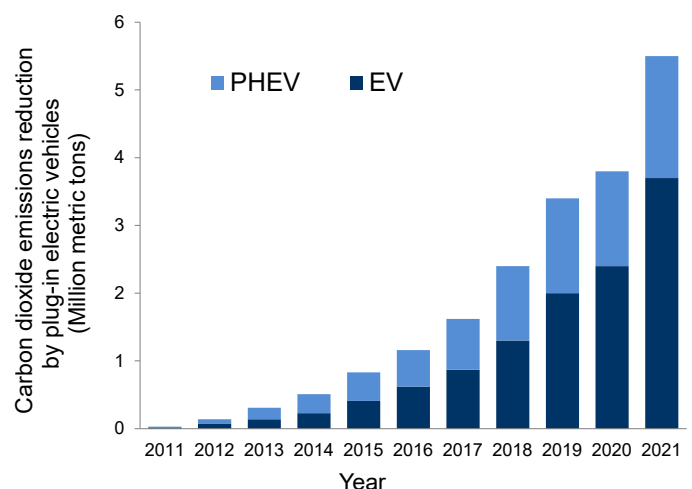


FIGURE 2 Carbon dioxide emissions reduction by plug-in EVs 2011–2021.

SOURCE: Adapted from Gohlke, D., Y. Zhou, X. Wu, and C. Courtney. 2022. "Assessment of Light-Duty Plug-in Electric Vehicles in the United States, 2010–2021." ANL-22/71, 1898424, 178584. <https://doi.org/10.2172/1898424>.

COMMITTEE ON ACCELERATING DECARBONIZATION IN THE UNITED STATES: TECHNOLOGY, POLICY, AND SOCIETAL DIMENSIONS

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FOR MORE INFORMATION

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