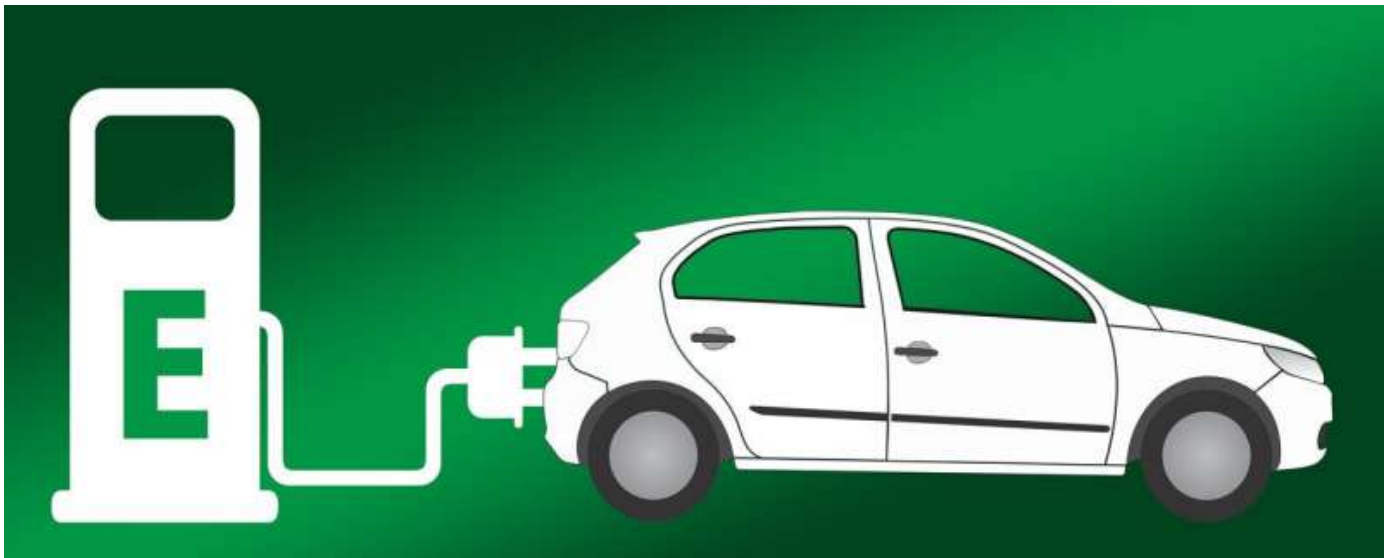


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# The practical path to America's electric vehicle transition

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Last week, with the leaders of America's auto industry and the United Auto Workers by his side, President Biden announced the goal that by 2030, half of America's new motor vehicles would be electric. This is an ambitious goal but necessary if our suburban-sprawl-based population is to meet our greenhouse gas reduction goals. America's pattern of land use development was built on personal transit, and we cannot meet our emission reduction responsibilities without electric vehicles powered by renewable energy. This will require federal subsidies for electric vehicles (EVs), at least until their sale price is lower than vehicles with internal combustion engines. When operation and maintenance are factored in, the actual price of electric vehicles is already lower than conventional vehicles. Unfortunately, the only price that matters to consumers is the price on the showroom sticker and so subsidies are needed to jump-start this market. In the wake of today's latest report from the UN's Intergovernmental Panel on Climate Change, the goal of decarbonizing our economy has once again been reinforced by our growing climate crisis. But greenhouse gas reduction in America requires a practical path to electrification.

In addition to subsidizing vehicles, there will also be funding for public charging stations, although I suspect that improved battery capacity and the self-interest of the convenience store industry will result in the conversion of many gasoline pumps to charging stations. As charging technology develops, the speed of charging will increase, but while the car is charging, there will be plenty of time to head into the store to buy a Slurpee. In other words, the demand for charging stations will elicit a private sector response. Moreover, while apartment dwellers like me will need public charging stations, most EV owners will live in suburban homes with garages or at least driveways and will charge their cars at home in the evening. They'll be their own charging stations. When battery range hits 500 miles, the need for public charging

stations will be reduced. Shopping center parking lots and garages will also install charging stations to make some money on their customers while they "shop and charge." In any case, to reassure EV owners, we'll need a mix of public and private charging stations.

Biden's announcement wedded his climate goals to the economic goal of leading the world's transition to electronic goals. As Coral Davenport reported in the *New York Times* last week:

"Without a radical change to the type of vehicles Americans drive, it will be impossible for Mr. Biden to meet his ambitious pledge to cut planet-warming emissions by 50 percent from 2005 levels by the end of this decade. Gasoline-powered cars and trucks are the largest single source of greenhouse gasses produced in the United States, accounting for 28 percent of the country's total carbon emissions. He also signed an executive order that calls for the government to try to ensure that half of all vehicles sold in the United States be electric by 2030."

There are many obstacles to implementing these goals, and a rapid technological transition of this scale is rare, although not unprecedented. The switch from landlines to cell phones and video discs to streaming video took place quite quickly. But these products are relatively simple compared to motor vehicles. Moreover, the requirement for subsidies and the impact on auto workers creates additional uncertainty. As Davenport observed:

"A rapid transition to electric cars and trucks faces several challenges. Experts say it will not be possible for electric vehicles to go from niche to mainstream without making electric charging stations as ubiquitous as corner gas stations. And while labor leaders attended the White House event and referred to Mr. Biden as "brother," they remain concerned about a wholesale shift to electric vehicles, which require fewer workers to assemble."

The transition to electric vehicles, the modernization of the electrical grid, and the transition to renewable energy are all major structural changes for a developed economy like ours that was built on fossil fuels. Ideological rhetoric and misguided political attacks on the energy industry will not do the difficult work of bringing this huge change into being. What is needed is a practical path and a public-private partnership tied to a critical and shared national mission.

We've used public policy to set and meet national goals. The best examples were World War II and the moon mission. A less well-known example was homeownership. After World War II, we set a national goal of promoting homeownership. We made mortgage interest and local property tax deductible on federal tax returns. We developed federally subsidized and administered mortgage insurance. We built the interstate highway system. All these public investments encouraged builders to develop land in the suburbs, people moved in, and with their sweat equity on weekends, small homes often became bigger and backyard barbeques became common. After several decades America transitioned from a nation of home renters to a nation of homeowners. It will take a similar degree of creativity, incentives, and private profit to rapidly transition away from fossil fuels.

What is thrilling about the Biden team's approach to climate policy is that they fully understand the complexity of the task and they know they must bring all the critical stakeholders to the table. Unions, management, national and local elected officials as well as community activists must all have a role and be given an ownership stake in the "firm." The EV will take a generation to displace fossil fuels. My next car will be electric, but my current one only has 20,000 miles on it. When I trade it in, someone will buy it and use it. That someone could be the government and they would then need to send it to the fossil fuel graveyard. If the government doesn't buy and retire my car, it will emit greenhouse gasses for at least a decade after I sell it.

Decarbonizing our economy requires that we sweat the details. We need to understand the supply chains that source our consumer economy and the waste stream of items we no longer use. We need to ensure the entire production process becomes carbon neutral. The environmental community is correct in asserting that the fossil fuel industry's economic interests can be hostile to the mitigation of climate change. But instead of vilifying an entire industry, we should be cherry-picking the industry leaders who can read the handwriting on the wall and know their survival requires that they pivot away from fossil fuels.

The auto industry is a good model here. They see the regulatory environment and consumer preferences moving toward EVs. Government assistance is needed to rapidly build this new market and to conduct the R & D needed to ensure that battery technology continues its rapid advance. But even without government, EVs are on the way. They are a technologically superior alternative to the internal combustion engine. But the practical path to EVs requires additional attention be paid to auto workers. While new auto factories will be even more robotic than current ones, the transition will cause a short-term increase in blue-collar jobs. In the long run, auto assembly line jobs will require a more educated workforce, and so the UAW and automakers should immediately begin the process of training their current workforce for the jobs of the future. It is vitally important that the transition to EVs not leave America's workers behind as roadkill of the new auto industry. The short-term burst of transition jobs provides us with an opportunity to do better than we did with the deindustrialization of the upper Midwest. Government must monitor employment issues and provide subsidies to facilitate training of the current workforce.

The Biden team is connecting the EV transition to goals in climate, battery research, job creation, competition with China and a growing economy. I believe that their strategy is sound. But the difficulty of moving from concept to reality needs to be clearly understood. This will not be easy. At some point, the momentum behind the electric vehicle will be irresistible. At that point, subsidies will need to be reduced, and private market forces will help complete the transition over time.

**More information:** *New York Times* article: [www.nytimes.com/2021/08/05/cli ... ight&pgtype=Homepage](https://www.nytimes.com/2021/08/05/climate/electric-vehicles.html)

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