

ELECTRIC VEHICLE INCENTIVES IN THE BUILD BACK BETTER ACT: Provisions Will Save Consumers Money, Boost U.S. Manufacturing, And Protect Public Health

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STRONG INCENTIVES FOR PASSENGER ELECTRIC VEHICLES ARE IMPORTANT FOR MARKET TRANSFORMATION

Transportation is the largest source of greenhouse gas (GHG) emissions in the country, contributing 29 percent of all emissions in 2019 and those emissions are rising, unlike the electricity sector. Annual transportation emissions [grew 22.9 percent](#) between 1990 and 2019—the largest growth in annual emissions from any sector. Vehicle electrification presents a near-term opportunity for decarbonizing this sector, as driving an electric vehicle (EV) charged from any grid in the United States is [now cleaner](#) than driving a gas-powered vehicle.

According to [Energy Innovation modeling](#), EV incentives in the Build Back Better Act (BBB) would have a critical impact on climate and air pollution by inducing rapid market transformation, which will also benefit those [most impacted by transportation pollution](#). Along with a clean grid, rapid electrification of passenger vehicles and medium- and heavy-duty trucks would prevent 150,000 pollution-related deaths and save consumers [\\$2.7 trillion by 2050](#).

Many EVs [already cost less to own](#) than fossil fueled counterparts over the vehicle's life, and [upfront cost parity for passenger vehicles is expected by the mid-2020s](#). Yet, higher up-front costs of new EVs remain a barrier for many consumers. Strong incentives would reduce purchase costs for consumers, while meeting President Biden's goal of reducing 2030 passenger vehicle emissions 60 percent from 2020 levels.

Studies show tax credits [accelerate market advances](#) and technology adoption to reduce GHG emissions, while [influencing consumer decisions](#). Furthermore, the BBB tax credits will enable the adoption of stronger vehicle standards that will set the U.S. on a path to 60 percent reductions in emissions from the transportation sector, as outlined in [President Biden's Executive Order](#).

The proposed tax credits for passenger vehicles in the BBB are as follows:

- \$12,500 max incentive per passenger vehicle, combining:
 - \$4,000 base for qualified EVs
 - \$3,500 for vehicles purchased before January 2027
 - \$4,500 for vehicles with final assembly in the U.S. at a union facility
 - \$500 for vehicles manufactured with no less than 50 percent domestic content in component parts and battery cells are manufactured within the U.S.

As proposed, the credit may not apply to vehicles over max suggested retail price of \$80,000 for vans, SUVs, and pickup trucks or \$55,000 for all other vehicles. These provisions are designed to reach more people, including those with low- to moderate-incomes, bolster domestic manufacturing, and support widespread EV adoption.

A REASONABLE INCOME CAP WILL MAXIMIZE THE MARKET IMPACT OF THE INCENTIVES

The proposed income cap is designed to ensure the EV tax incentive is available to as many people as possible, while excluding high-income individuals and households that are far less likely to need an incentive to motivate their purchase decisions. Moderate earners, on the other hand, still face financial barriers to purchasing EVs. The inclusion of a reasonable cap based on gross income (now \$250,000 for individuals, \$375,000 for head of household, and \$500,000 for joint) is designed to capture middle- and moderate-income earners, while reflecting the [large variation in costs of living](#) throughout the U.S. However, the income cap should not be reduced any further beyond the current proposed limits, lest middle- and moderate-income earners be left out.

Additional BBB provisions ensure the incentives can be used by consumers for whom the purchase price differential between an EV and a gas-powered vehicle is a determining factor (e.g., capping the vehicle value and limiting the incentive to 50 percent of the total vehicle price). A [University of California, Davis study](#) documented the efficacy of EV tax incentives for middle- and moderate-income earners, finding federal tax credits are one of the most important incentives for owners of moderately-priced EVs.

HEAVY-DUTY VEHICLE TAX CREDITS ARE A CRITICAL PART OF THE POLICY PACKAGE

Medium- and heavy-duty vehicles are disproportionately responsible for [air pollution in low-income communities and communities of color](#) across the nation. Heavy-duty trucks are the largest contributor of [mobile source NOx emissions](#) and emit [36 percent of roadway particulate emissions](#). Medium- and heavy-duty vehicles make up only [4 percent of vehicles](#) on the road, but contribute [24 percent of GHG emissions](#) from transportation, and consume [26 percent of national fuel use](#). These costs are high: The U.S. pays [\\$58 billion annually](#) in air pollution-related damages from diesel trucking. Reducing emissions from these vehicles is critical for protecting the [health and well-being](#) of [communities near roadways](#).

Electrifying heavy-duty trucks presents an opportunity for significant action to protect the climate and improve air quality while targeting a low percentage of total vehicles. The BBB offers a 30 percent tax credit for electric heavy-duty vehicles (and 15 percent for hydrogen fuel cell vehicles), which can also be applied to owned or leased vehicles. Tax exempt entities can receive an elective payment in lieu of the tax credit. In addition to the tax credits, the BBB wisely includes funding for various U.S. EPA grant programs aimed at supporting the replacement of eligible vehicles with EVs, funding EV infrastructure, providing workforce development and training, providing technical support for the adoption and deployment of EVs, and targeting support for underserved communities and those impacted by transportation pollution.

Energy Innovation's [modeling](#) finds the proposed 30 percent tax credits would lead to a 27 percent electric sales share for light- and medium-duty freight trucks and a 16 percent sales share for heavy-duty trucks by 2030, resulting in emissions reductions of 7 million metric tons (MMT) carbon dioxide equivalent (CO₂e). Under a more "Optimistic Deployment" scenario, which lifts constraints to increase deployment, the 30 percent tax credit boosts heavy-duty electric vehicle sales to 23 percent in 2030, resulting in 11 MMT CO₂e of emissions reductions.

Adequate incentives are needed to reduce financial and technological barriers for electrification of the most polluting vehicles. The [purchase cost differential](#) between electric and diesel heavy-duty vehicles can approach several hundred thousand dollars. However, EVs [win out](#) when looking at total cost of ownership and could save long-haul electric truck owners [\\$200,000 over the vehicle's lifetime](#). The [technology](#) for the majority of medium and heavy-duty EVs [is ready](#), though several vehicle classes still need range improvements to realize the full electrification benefits and see expanded market offerings. Strong and sustained policy incentives will create greater [market certainty](#) and increase model availability. Because of the slower stock turnover for these vehicles and the fact that technology will continue to scale and fall in cost, the potential for commercial vehicle tax credits is much greater in the long-term. An enduring tax incentive for heavy-duty EVs will motivate early market adopters and put the U.S. on track to swiftly decarbonize and clean up the trucking sector, addressing air pollution in frontline communities and saving truck owners [up to 50 percent](#) of total vehicle costs by 2030.

DOMESTIC MANUFACTURING INCENTIVES FOR EVS AND BATTERIES WILL CREATE U.S. JOBS AND ENSURE GLOBAL COMPETITIVENESS

EV manufacturing incentives in the U.S. are key to ensuring an equitable workforce transition. Automotive industry jobs, which are higher paying and benefit from a larger percentage of unionized workers relative to other sectors of the economy, [hinge on federal policy support for domestic EV manufacturing](#). Without this policy, the quality and availability of jobs for autoworkers may decline, due to [existing downward pressures impacting the industry](#). The proposed incentives for domestic manufacturing in the BBB (the *Domestic Manufacturing Conversion Grants* and the *Loans for Advanced Technology Vehicle Manufacturing*), combined with the grant programs and R&D funding allocated in the Infrastructure Investment and Jobs Act (IIJA), will counter these pressures and support stronger job growth and union jobs in the U.S.

An analysis by the University of California, Berkeley and Energy Innovation shows that achieving 100 percent EV sales in the U.S. by 2035 could create [2 million jobs in 2035](#), but this analysis does not capture the additional job impacts associated with increased domestic manufacturing – thus 2 million jobs is likely the floor of what's possible under a high EV deployment scenario.

Additionally, domestic manufacturing incentives would give the U.S. a much-needed opportunity to gain a foothold in the global EV market. The U.S. has lagged for years in EV manufacturing, and the gap is only getting wider. From 2010 through 2020, China [manufactured the largest proportion of EVs globally at 44 percent](#), while Europe produced 25 percent. The Chinese government spent [\\$60 billion](#) on the EV manufacturing industry between 2009 and 2017. Conversely, by 2020, the U.S. had manufactured only 18 percent of the global EV stock, a decrease from 20 percent in 2017. This lag is compounding the problem, as automakers are committing more money to EV manufacturing overseas as well as offering a wider variety of models in other countries.

As EVs continue to become more affordable and even cheaper than conventional vehicles, sales will shift quickly. If the U.S. does not rapidly scale up EV manufacturing and supply chains now, we will lose the opportunity for global leadership and forgo trillions of dollars in economic benefits and high-quality jobs.

THE ELECTRIC VEHICLE PROVISIONS IN THE IIJA AND THE BBB TARGET DISTINCT MARKET BARRIERS

There is no direct overlap between the [EV provisions in the IIJA](#) and the BBB. EV charging programs exist in both packages, but they serve different purposes. In the IIJA, EV charging programs are focused on building out charging corridors throughout the country, with the aim of enabling longer-distance travel along interstate highways. In most cases, the IIJA provides funding for other alternative fueling methods, not just EV charging. The funding would also go to support public-private partnerships and coordination between federal and state governments. The BBB, on the other hand, targets charging infrastructure within communities, aiming to create an equitable distribution for more routine use. This is particularly important for the [35 percent of Americans](#) who do not own their own home or who live in multi-unit dwellings and thus face barriers to at-home charging.

Specifically, the IIJA contains the Grants for Charging and Fueling Infrastructure program, which can be used for publicly accessible charging infrastructure or other alternative fueling infrastructure, including hydrogen and natural gas, and the National Electric Vehicle Formula Program, which is the only program within IIJA that limits eligibility to EV infrastructure and focuses on building out chargers along highway corridors. The BBB contains an expansion of the existing Alternative Fuel Refueling Property Credit (30C), which is a tax credit for EV charging infrastructure dedicated to public use; the Zero-Emission Vehicle Infrastructure Grants will fund EV charging and hydrogen fuel cell stations located in rural or underserved/disadvantaged communities; the Affordable Housing Access Program will make competitive grants to support charging access for affordable housing (among many other eligible transportation and mobility projects); and some additional funding to support the electrification of federal fleets and the needed charging infrastructure. Together, these programs are complementary and necessary to build out charging infrastructure at the levels required to support rapid transportation electrification.

