

How the Inflation Reduction Act Could Fuel a Surge in Electric Vehicle Manufacturing in the U.S.

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- The clean energy and climate law incentivizes domestic manufacturing of electric vehicles (EVs).
- Vehicle manufacturers announced billions of dollars of investment in new EV supply chain manufacturing capacity in the U.S.



In August, President Biden signed the Inflation Reduction Act (IRA) into law. The legislation will infuse an estimated \$369 billion of federal funds into the economy to accelerate the clean energy transition and mitigate climate-related impacts.

Unlike previous attempts at federal climate policy, the IRA mostly uses “carrots” to incentivize the manufacturing and adoption of clean energy solutions, rather than “sticks” to punish businesses and consumers for their greenhouse gas emissions.

Climate Policy “Carrots” in the Inflation Reduction Act

- Tax credits...
 - for clean energy investment.
 - for consumers who buy appliances.
 - to increase U.S. manufacturing of solar, wind, and batteries.
 - for electric vehicles assembled in North America.
- Removes manufacture-specific electric vehicle tax caps.
- Offers grants and loans to deploy and install clean energy and energy efficiency solutions across sectors.

The IRA provides financial incentives, such as tax credits, deductions, grants, and financing assistance, to encourage private investments that exceed the government's contribution. Early analysis suggests this will happen many times over. Global financial services firm Credit Suisse estimates federal spending could be greater than \$800 billion because most IRA tax credits are uncapped. This federal investment could be met by nearly one trillion dollars of private co-investment.¹

¹ Credit Suisse, “US Inflation Reduction Act: A Tipping Point on Climate Action,” September 28, 2022.

Upside scenarios for total investment could be extremely high in clean technology manufacturing.

The Congressional Budget Office (CBO) estimates the federal cost of the IRA's manufacturing incentives will be \$37 billion. However, analysts expect the federal cost will be \$220 billion higher than the CBO estimate because the private sector will intensely pursue these incentives with \$265 billion of expected private investment in manufacturing capacity.² This phenomenon is already visible in EVs and battery supply chains. In 2022, companies announced \$13 billion of investment in U.S.-based EV manufacturing and \$24 billion of investment in battery supply chains.³ The Dallas Federal Reserve recently reported that this investment is expected to increase U.S.-based lithium-ion battery production capacity 12 times between 2021 and 2031.⁴

The surge in EV and battery supply chain investment can be attributed to a few different elements.

The IRA offers significant incentives to build new manufacturing capacity for certain technologies in the United States. It expands and enhances the 48C Advanced Energy Project manufacturer's credit. Under these allocations, a company can receive a tax credit worth up to 30% of the initial investment made to build a new – or expand an existing – manufacturing facility that produces clean energy technologies. This includes EVs and their components, as well as the critical minerals that are essential to the production of batteries.

Alternatively, manufacturers can elect to use the new 45X Production Tax Credit, under which a manufacturer is paid a specific tax credit amount tied to the per unit production of the clean energy technology. Battery components (though not vehicles themselves) are eligible for this tax credit. For example, a facility that produces battery cells can receive a tax credit worth \$35 multiplied by the capacity of such battery cell (expressed on a kWh basis).

These incentives are on top of the \$7 billion the Department of Energy was appropriated through last year's bipartisan Infrastructure Investment and Jobs Act to directly fund battery and critical mineral supply chains in the U.S.⁵ The first series of those awards was announced in October, with \$2.8 billion awarded to 20 companies.⁶ Five awardees will build new facilities in disadvantaged communities, and 15 in locations adjacent to disadvantaged communities. Importantly, the Department of Energy noted that these awards will leverage more than \$9 billion of private co-investment.

In addition to the financial incentives and direct funding to build EV and battery manufacturing capacity in the U.S., there are also important financial incentives targeting the purchasers of these EVs. However, these incentives are only awarded if the vehicle is primarily made in the U.S.

The IRA revamps and extends the tax credit awarded to EV buyers.

The prior \$7,500 tax credit was limited by manufacturer-specific caps. Once a manufacturer sold enough EVs to reach that cap of 200,000 vehicles, their EVs no longer qualified for the tax credit. This is why new Tesla purchases have not qualified for the full EV tax credit since 2018.⁷ The manufacturer-specific caps have been removed, there is a new credit for used EVs at \$4,000, and the tax credit can now be monetized directly at the point of sale to discount the purchase price.

² Credit Suisse, "US Inflation Reduction Act: A Tipping Point on Climate Action," September 28, 2022

³ <https://www.whitehouse.gov/briefing-room/statements-releases/2022/09/14/fact-sheet-president-bidens-economic-plan-drives-americas-electric-vehicle-manufacturing-boom/>*

⁴ <https://www.dallasfed.org/research/economics/2022/1011>*

⁵ <https://www.whitehouse.gov/briefing-room/statements-releases/2022/10/19/fact-sheet-biden-harris-administration-driving-u-s-battery-manufacturing-and-good-paying-jobs/>*

⁶ <https://www.energy.gov/articles/biden-harris-administration-awards-28-billion-supercharge-us-manufacturing-batteries>*

⁷ <https://www.reuters.com/article/us-tesla-tax-credit/tesla-hits-200000-cars-meaning-lower-tax-credit-for-buyers-idUSKBN1K222F>*

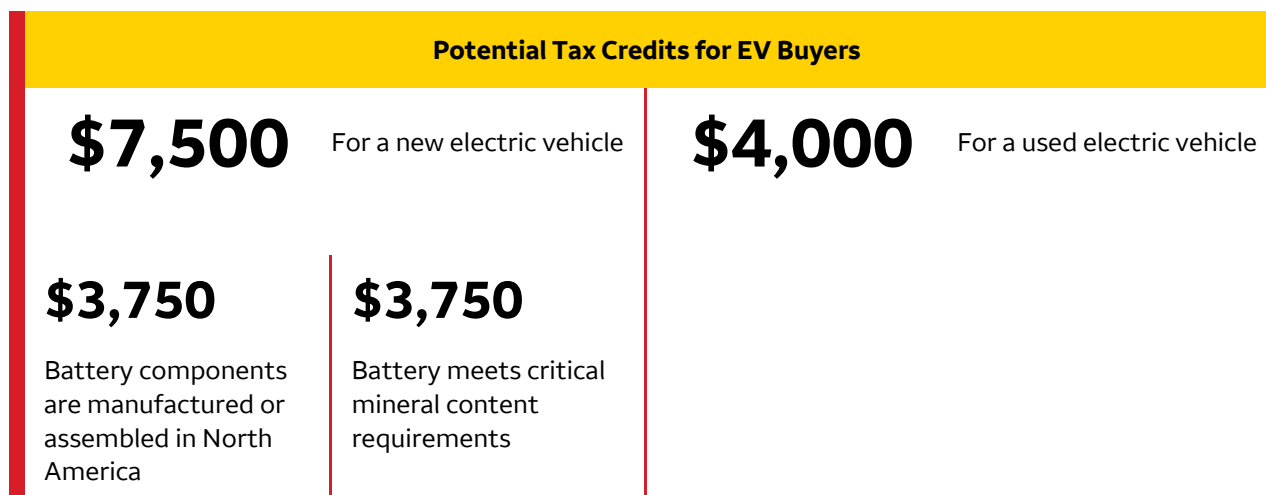
The most significant element of the revamped EV tax credit is the new set of domestic content requirements. Technically, the new \$7,500 tax credit is broken into two components – each worth \$3,750.

The first component is awarded if the vehicle’s battery meets critical mineral content requirements.

- Starting in 2023, at least 40% of the critical minerals within a battery cell must be extracted or processed in a country with which the U.S. has a free trade agreement or be recycled in North America.
- This requirement rises to and remains at 80% beginning in 2027.

The second component is awarded based on the percentage of the overall battery components manufactured or assembled in North America.

- Starting in 2023, the threshold will be set at 50%.
- This increases to 100% beginning in 2029.⁸



A vehicle can meet neither, one, or both requirements and be eligible for a tax credit of \$0, \$3,750, or \$7,500, respectively. If a vehicle manufacturer wants to sell its EVs in the U.S. and offer what is effectively a point-of-sale discount, it must rapidly build out and expand its U.S.-based manufacturing capacity and supply chain.

The IRA provides incentives up and down the supply chain to rapidly push investment, manufacturing, and job creation in the EV sector into the U.S. and away from competing economies. In case the purpose of this policy isn’t clear enough, the law explicitly states an EV that includes *any* battery component coming from a “foreign entity of concern” is wholly ineligible for the tax credit, even if it otherwise meets the component threshold requirements. This designation currently includes China, Venezuela, Russia, Iran, and others. As the International Energy Agency reported this summer, “Today’s battery supply chains are concentrated around China, which produces three-quarters of all lithium-ion batteries and is home to 70% of production capacity for cathodes and 85% of production capacity for anodes (both are key components of batteries).”⁹ Therefore, the IRA is viewed as industrial policy and foreign policy, as well as clean energy and climate policy.

We are likely at the forefront of a new wave of investment in clean tech manufacturing in the U.S. EVs are just one of several clean technologies, much like solar panels and wind turbines, that are targeted with similar incentives. Wells Fargo works with our clients to help finance their emissions reduction efforts, support science-based research on low-carbon solutions, and advocate for policies that enable client transactions.

⁸ <https://crsreports.congress.gov/product/pdf/R/R47202>*

⁹ <https://www.iea.org/reports/global-ev-outlook-2022/executive-summary>*

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