



## An Affordable Electric Vehicle—The \$25,000 Question

**Jack Barkenbus**, Vanderbilt University

The major question facing the automotive industry in the United States over the past decade was whether the country would begin a transition to electric vehicles, with major consequences for energy and the environment. With that question settled—in the affirmative—the major question for this decade becomes: will the transition bring along all Americans?

The initial answer to that question is not promising. There are a number of challenges, including the sizeable number of apartment dwellers who would find it difficult to home charge their vehicles, but chief among them is the price of electric vehicles. Despite expected technical progress, an affordable electric vehicle will not reach the market soon, and it's expected that major automakers will not prioritize its development due to market imperatives and global politics.

### The \$25,000 Question

The average transaction price for a new electric vehicle in February 2022 was \$60,054—a far cry from the roughly \$25,000 consumers pay for well-known gasoline-model sedans, such as the Toyota Corolla, Volkswagen Jetta, or the Nissan Sentra. Many Americans, already hesitant to purchase electric vehicles over fears of reliability and range, will find it impossible to meet this kind of price point—yet no viable alternatives for a reasonably-priced, new, electric vehicle exist.

Of course, in order for an electric vehicle to be produced for \$25,000, there first needs to be an automaker willing to invest in and create such a vehicle. Hopes were raised in 2020, when Tesla announced they intended to create an affordable electric vehicle within two to three years. But in 2022, it was revealed they had not yet begun this venture, and were unlikely to do so soon—they were simply most profitable in mid to high-end markets, which is why American legacy automakers Ford and General Motors are similarly aiming to create high-end electric vehicles.

Outside of the US, competitive market forces remain. South Korean automakers could produce a low-end product, but would prefer to go after the light-truck and SUV market that predominates in the U.S., thereby challenging Tesla's current hold on the electric vehicle market. Volkswagen, and other European brands, are making a similar calculation. Consequently, the only hope for producing a near-term, affordable, electric vehicle falls to nascent Chinese auto producers.

### Chinese Automakers

At the current time, highly-capable Chinese electric vehicle automakers, such as BYD, NIO, SAIC, Xpeng, and Geely, are largely content to serve the robust and burgeoning Chinese electric vehicle auto market. Of the 20 million electric vehicles now traversing roads globally, nearly half of them are on Chinese roads. Still, Chinese automakers are already exporting vehicles to Europe and beyond, and with no competition at the low end of the market in the U.S. it is only a matter of time before attention turns to the large, U.S. market. Crucially, according to the automotive consultant Michael Dunne, the imperative for Chinese companies seems to be to create a trusted brand and establish a foothold in foreign markets before turning towards generating profit. This is a strategy Japanese automakers used nearly half a century ago. Chinese exporters are said to be ready to lose money for ten years in order to establish the quality and brand of their product in the U.S.

The Chinese could have a “good enough” electric vehicle ready for the U.S. market by no later than mid-decade. Unfortunately, however, geopolitical issues will muddy the waters and make a Chinese solution to our conundrum difficult to attain. There is already a 27.5% tariff tacked onto the price of any Chinese vehicle

import today. Opposition from U.S. automakers can be expected, and ideological and international politics would be added to the debate—the relationship between the U.S. and China has been deteriorating for years, and forging a close relationship in the business of automotive manufacturing could prove challenging for American politicians.

## Why Hurry?

There may be questions over whether there is urgency in bringing the \$25,000 electric vehicle to market, given that there are several decent gasoline models at that price point. The case for urgency, nonetheless, is compelling. The purchase price of a vehicle is only a partial indication of total life-cycle costs, with fuel costs and maintenance obligations being more important. And it is here that electric vehicles shine, with operational costs typically 40-50% lower than gasoline models. The continued high costs of gasoline at \$4-\$6/ gallon would only highlight this dimension.

Modest income Americans should be the first, not the last, to benefit from electric vehicle savings, and having an electric vehicle on the market that they could reasonably afford could transform the automotive market and jumpstart electric vehicle ownership rates in the U.S.

## Conclusion

Ultimately, the \$25,000 question is not whether a \$25,000 electric vehicle can be produced for the American consumer this decade but rather is there the will in the country to do so. Western, Japanese and Korean automakers have little interest in doing so. Not all Chinese electric vehicle automakers have the will either, but a few will pounce if conditions are conducive to their introduction.

Though a Chinese electric vehicle would likely get caught up in global tensions, the opportunity to transition middle-class Americans to electric vehicles remain. There will be much to learn from how Chinese electric vehicle exports to Europe evolve. If the experience is positive, it could mean that public demand for an affordable electric vehicle will grow—meaning that the handling of relations between the U.S. and China on this issue may prove to be, in short, the \$25,000 question.