In the slow lane: EV demand in the US

JATO

01

Foreword

Attempts by OEMs across the globe to overcome the dual impact of the COVID-19 pandemic and semiconductor shortages of recent years have had a significant impact on the evolution of the global electric car market.

Over the last couple of years, there has been a concerted effort from manufacturers across the industry to focus their production lines on electric vehicles (EVs), in an attempt to keep their factories running and national regulators happy.

Battery electric vehicles (BEVs) are now centre stage. Public incentives, increased availability in dealerships, and the range of deals on offer have meant that – since 2022 in particular – it has become easier in many markets to acquire a brand-new electric car than a traditional ICE (internal combustion engine) vehicle.

Governments across the world are placing even greater pressure on OEMs to accelerate the shift from ICE production to cleaner mobility solutions, creating an undeniable platform for the growth of the electric car market.

Between 2019 and 2023, global sales of BEVs increased almost seven-fold, soaring from 1.6% to 11.2% of global light vehicle (LV) sales, despite the challenges facing the industry. By contrast, global LV sales in 2023, across all segments, remained consistent with 2019 levels.

Felipe Munoz
Global Analyst, JATO Dynamics

China has been the main driver of this growth, accounting for more than half of global demand for BEVs, while Europe follows in second place with 22% of global demand. Interestingly, the United States (US) – the world's second-largest market for LVs – still only accounts for 12% of global BEV sales.

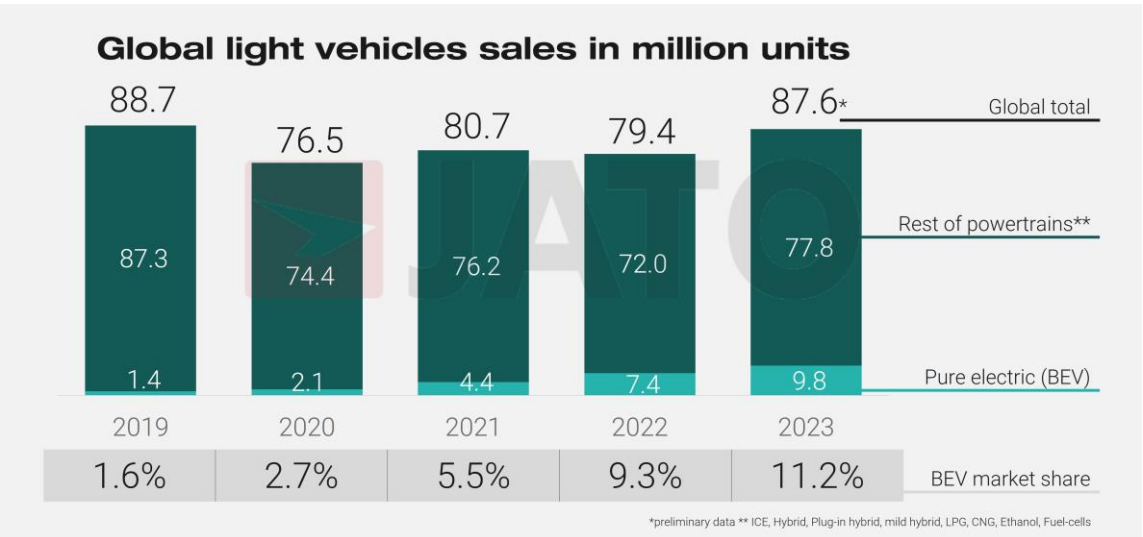
This report analyses the factors contributing to the lower level of EV adoption in the US compared to other markets. It considers why the US appears to be more reluctant to embrace the shift to electrification than its European and Chinese counterparts, and how the nation's transition to electric could play out over the long term.

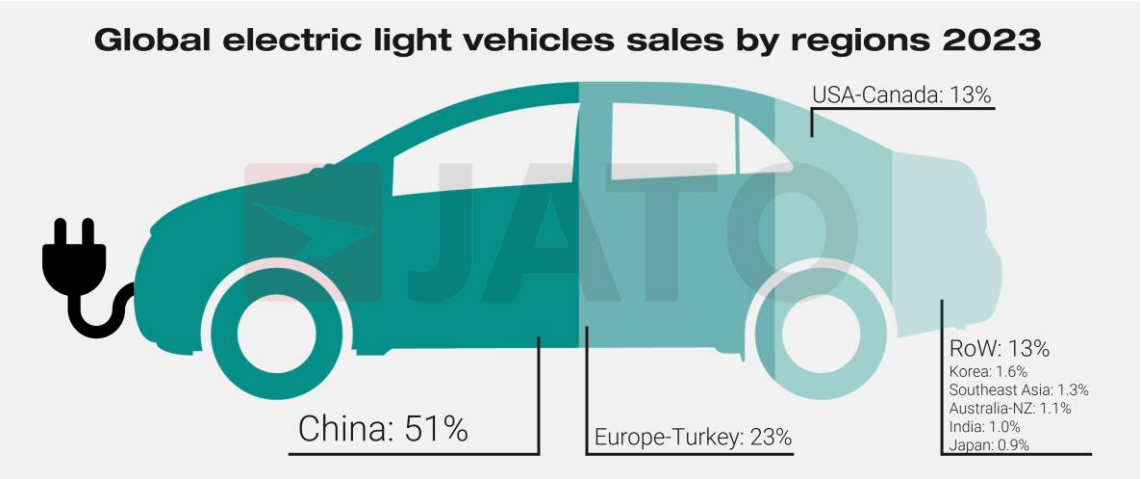
02 US against the world

Although the first cars were manufactured in Europe, they truly became a product for the masses in the United States. The US held its position as the world's largest LV market until 2009, when it was surpassed by China as the latter recorded remarkable economic and population growth.

Today, the US automotive market is larger than the whole of Europe combined; more dynamic than other mature markets such as Japan, Europe, South Korea and Australia; and continues to outsell markets with significant populations like India, Indonesia, Brazil and Japan. Yet, despite huge demand for a wide range of vehicles within the country, EV adoption has stalled.

In 2023, BEV sales in the US totalled 1.17 million units out of a total market of 15.58 million. While sales increased by more than half (53%) – allowing the segment's overall market share to jump from 5.5% in 2022 to 7.5% last year – the BEV market in the US continues to lag behind Europe and China. In Europe, BEVs represented 16% of total passenger vehicle registrations; however, there is significant variation across regions. In Scandinavia, BEVs now account for 46% of vehicle registrations, but this figure falls to 19% in Central and Northern Europe. In China, BEVs now represent 23% of total passenger car sales.

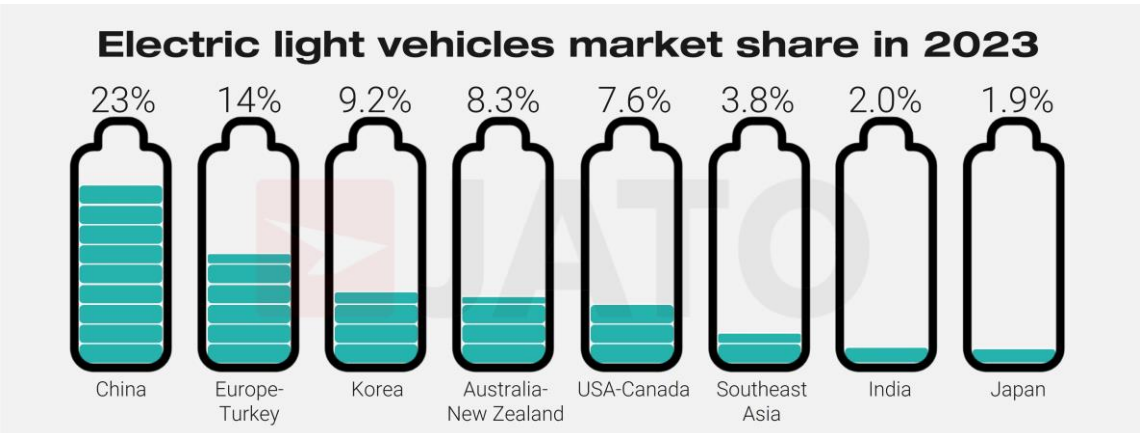




The EV market in the US is more closely aligned with that of Australia, where BEVs – including light commercial vehicles – have a 7.5% market share, alongside Canada (8.3%) and South Korea (9.2%). The country is outpacing Japan – where BEVs account for just 1.9% of the overall market; however, it trails markets including New Zealand (15%), Israel (18%) and Thailand (10%).

To summarise, the US automotive market is ahead in terms of ICE vehicles but behind the curve when it comes to BEV adoption. What is behind this trend, and why is a market – known as a centre of automotive production and consumption – lagging behind other, less mature markets?

The price of gasoline, typically lower in the US compared to other regions such as Europe, may be one potential answer. Similarly, the political landscape – in which electrification has become a polarising issue – may be another. However, neither of these factors alone explain why the shift to electrification is taking place at a significantly slower rate in the US.

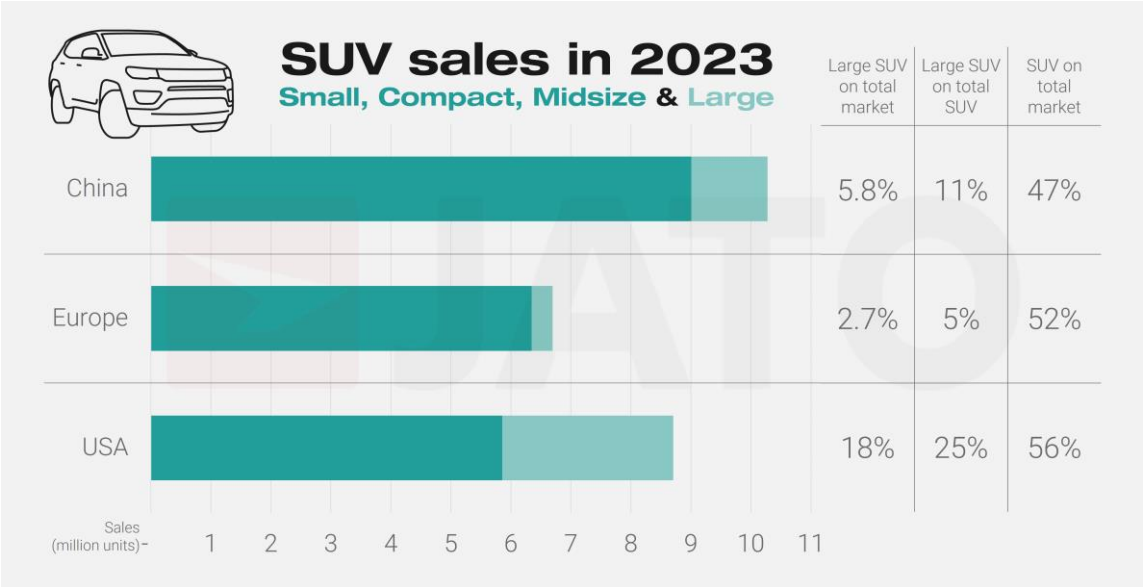


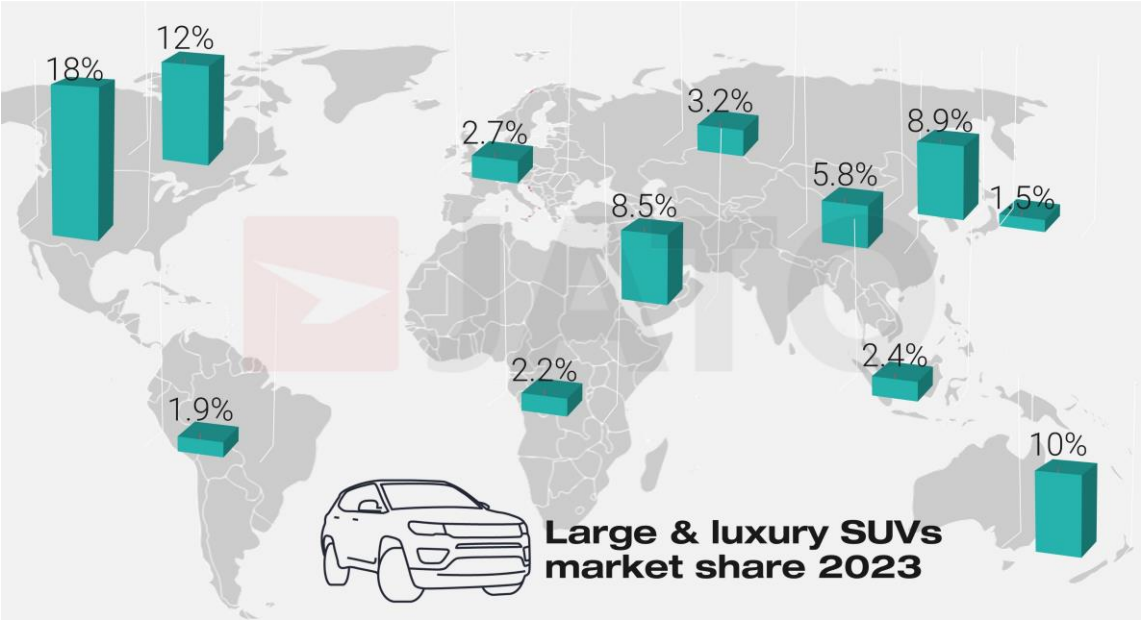
03 Petrol-head society

As the birthplace of the sports utility vehicle (SUV) and the pick-up truck, consumers in America have always had a strong desire for large interior spaces. This preference, combined with the need to transport significant cargo loads, has contributed to the unwavering popularity of these vehicles, while the sheer scale of the country has also seen America's automotive industry produce large sedans, pony cars, and multi-purpose vehicles (MPVs).

With most American cities less than 300 years old, many roads have seen exponential expansion since the arrival of the first cars over a century ago. This comes in sharp contrast to Europe, where the cities are typically much older and roads far smaller, meaning these vehicles have not experienced the same demand.

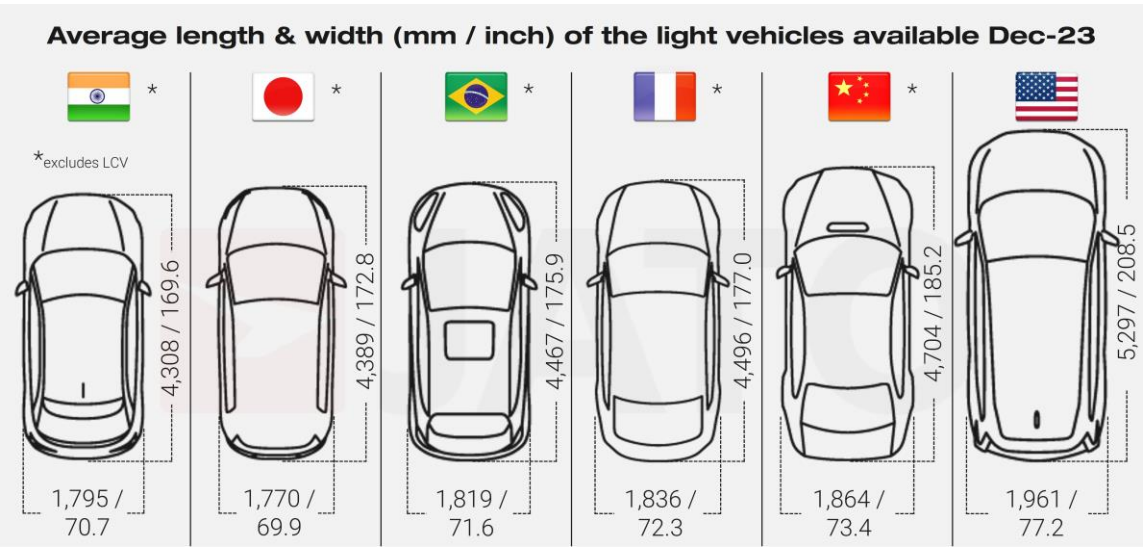
According to JATO Dynamics data, SUVs accounted for 56% of total LV sales in the US in 2023, while pick-up trucks accounted for 18%. Large and luxury SUVs accounted for one fourth of these sales, totalling 3.13 million units. By comparison, 10.3 million SUVs were sold in China in 2023, of which just 1.33 million were large and luxury models. In Europe, this figure drops significantly to just 352,000 units – accounting for only 5% of the segment's total.





This trend is even more prevalent when looking at the registrations data for pick-up trucks. Global sales of these vehicles – which include popular models like the Ford F-Series, Ram 1500 and Chevrolet Silverado – totalled 2.36 million units in 2022 with 1.97 million sold in the US, accounting for 83% of the global total. Canada closely follows the US in preference for these vehicles, with global market share for the country amounting to 13%.

Vast domestic energy resources and an economy traditionally geared towards oil and gas mean that American consumers have been able to access these larger vehicles without significant concerns about how energy prices might impact on



their household expenditure. This is an important factor when considering the fuel requirements of these vehicles. In 2023, the average weights of an SUV and pick-up truck was 4,969lbs (2,254kg) and 5,840lbs (2,649kg), respectively – in contrast, the average weight of a small hatchback in France was 2,522lbs (1,144kg). While these factors have allowed this segment of the vehicle market to boom, they have also contributed to a culture of ICE dependence, with some drivers reluctant to shift away from what they see as the 'traditional' way of driving.

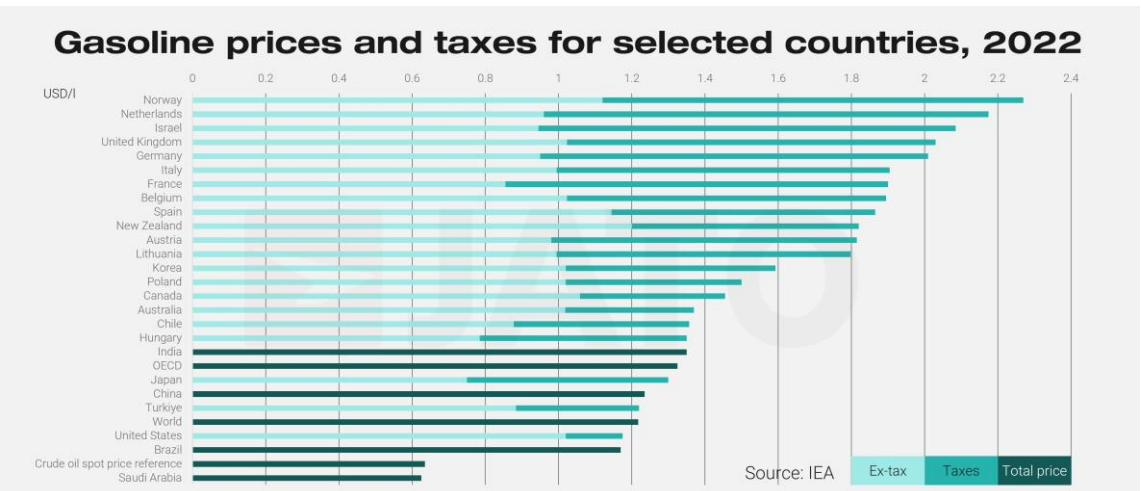
Taking Europe as an example, the situation differs significantly. The region's dependence on foreign energy imports, exposed in the post-War era; the rise of global oil prices that followed in the 1970s; and the size of the continent's roads have all served to reinforce the need for smaller vehicles. These factors are emulated in the size of the vehicles designed by brands such as Fiat, Mini, Citroen, Renault and Volkswagen, for whom urban mobility has been front of mind.

04 Price at the pump

The wealth of natural resources in the US has a direct impact on the cost of fuel. Despite reaching record highs in recent years [(1)], the price of fuel in the US remains far lower than in many other countries where government policy aimed at protecting the environment results in high fuel taxation. In France, for example, the average price of a gallon of gasoline stood at US$7.50 as of February 2024, compared to just US$3.49 in the US [(2)]. Due to the comparatively low cost of running an ICE vehicle in the US, there is currently no strong financial incentive to encourage consumers to make the switch to electric.

"Why would the driver of Ford Explorer V6 3.0 ST 4WD decide to shift to an electric SUV, if gasoline prices remain stable and the country's charging infrastructure fails to satisfy their charging needs?" asked Felipe Munoz, Global Analyst at JATO Dynamics.

High retail prices for BEVs compared to ICE models is another barrier to widespread adoption. As commented by Michael Kasuba, Global Head of Analytics at JATO Dynamics: "Currently, many EV models available in the US are priced from $40,000 upwards. With overall vehicle prices trending higher in recent years, the lack of affordable options may also be impacting younger buyers, who might be more inclined to purchase an EV. OEMs have been cutting the prices of their electric models to combat waning demand."

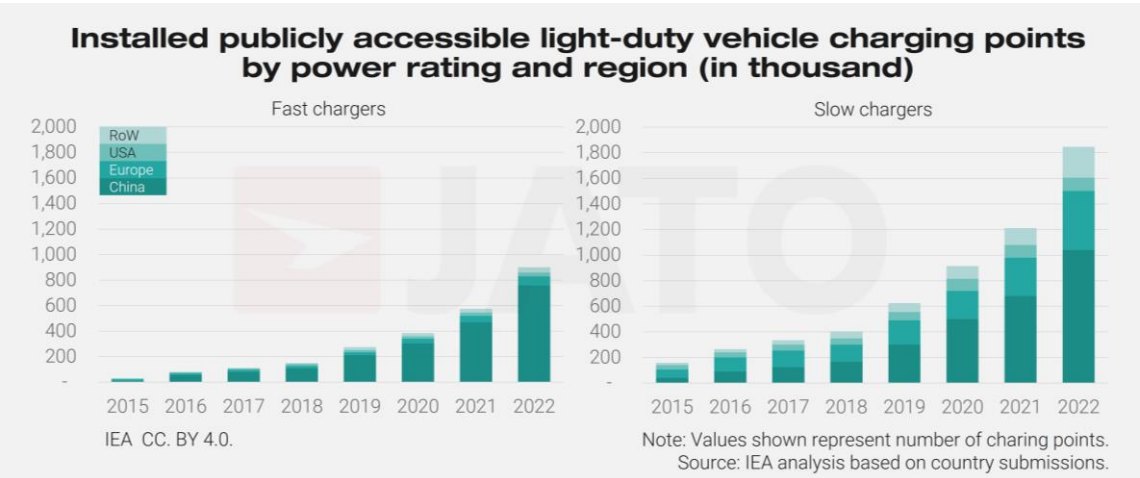


In addition to the financial implications of making the switch to an EV, there is also the question of practicality. According to Anthony Puhl, A&R Analyst at JATO Dynamics: "low gas prices are only one part of the puzzle, with infrastructure and the perception of range also playing a huge part." While the number of publicly accessible charging points increased by around 55% globally between 2015 and 2022, deployment has been led by China and Europe [3].

At present, home charging currently satisfies most of the total charging demand, but wider adoption hinges upon the deployment of convenient and accessible public chargers. At the end of 2022, the inventory of slow chargers in China totalled more than one million. Europe followed with 460,000 slow chargers, marking a 50% surge from the previous year [4]. By contrast, the US saw a mere 9% increase in in 2022 – the lowest growth rate among other major markets [5].

A similar trend can be seen in the deployment of publicly accessible fast chargers, particularly important in alleviating range anxiety among those embarking on long-distance journeys. China accounted for almost 90% of global growth in 2022 which brought the total stock in the country to 760,000. Europe saw a 55% increase compared with the previous year, bringing the total to more than 70,000. In the US, 6,300 fast chargers were installed in 2022, three quarters of which were Tesla Superchargers which brought the total stock to just 28,000 at the end of the year [6].

Looking at the number of EVs per charger, countries including China, Korea and the Netherlands have maintained a ratio of fewer than ten to one in recent years. However, in the US this ratio increases to around 24 to one. It is important to note that the optimal ratio differs depending on specific market conditions.



05 The role of policy and regulation

Another issue lies in how the US has responded to rising competition from China's automakers, many of which have ambitious global expansion plans of their own.

In 2022, global sales of cars produced by Chinese brands outside of their domestic market increased by 48% compared to the previous year. By comparison, sales of cars from Japanese and European brands fell by 7% and 8%, respectively, while sales from US brands increased by just 1%. Last year, China surpassed Japan as the world's largest vehicle exporter thanks to the remarkable growth of its BEV market, and data through November 2023 shows that Chinese carmakers exported 4.4 million vehicles, 400,000 units more than Japan.

In response to the growing influence of China's automakers, the US has taken steps in recent years to safeguard the future of its automotive industry. The Inflation Reduction Act (IRA), signed into law by the Biden administration, is one of the most visible attempts to ensure the continued domestic production of EVs and their components in the US. Its goal, from an automotive perspective, is to ensure that the US can compete with China as an EV production hub, while ensuring greater control over the supply of key components and raw materials.

While well-intended, the policy is putting America's automakers in a challenging position. By attempting to reduce the industry's dependence on China for both battery production and the supply of precious metals, the legislation is inadvertently making it more difficult for manufacturers such as Tesla, General Motors and Ford to expand domestic production due to supply chain constraints.

Michael Kasuba
Head of Analytics
JATO Dynamics

> "Despite plans to be prepared for the shift to electric, the latest moves by GM and Ford highlight that they are taking more of a wait and see approach"

Under the new legislation, to secure the US$7,500 tax credit available per vehicle, OEMs must source a certain portion of the raw materials for the battery from the US or another country with which it has a free trade agreement.

In 2023, carmakers had to source at least 40% of these raw materials from compliant countries; this figure has since increased to 50%.

The US has clear ambitions to cement itself as a major manufacturer of BEVs, built on a strong supply chain that sources its materials locally or from allied countries.

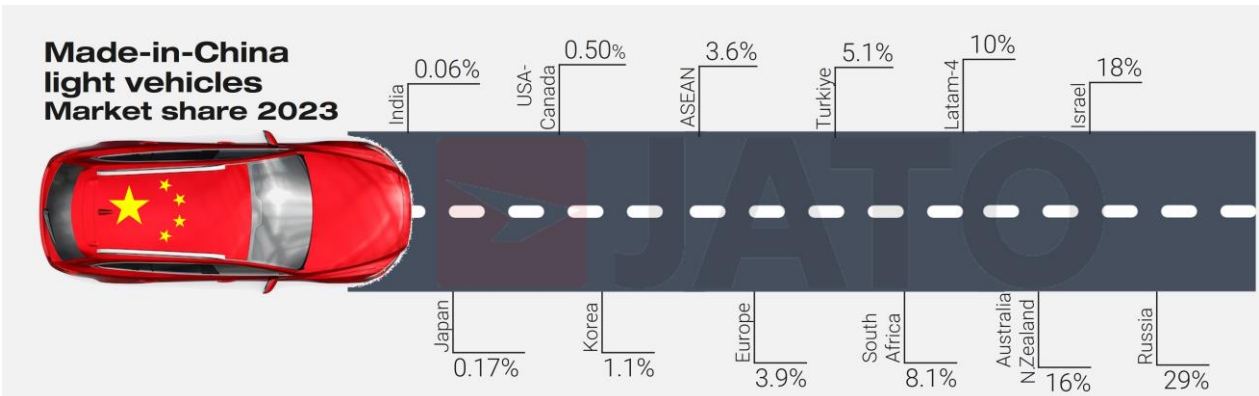
However, limited infrastructure and access to vital raw materials like precious metals, essential for battery production, mean the country is not currently equipped to respond to the upcoming explosion in BEV demand that is expected in the coming years.

06 Increasing competition from China

China is in a strong position due to two key factors: the size of its local market, which is helping finance its expansion goals, and the control it has over its battery supply chain. As commented by Mattias Gromark, Portfolio Manager at Atlant Fonder AB: "China's influence over materials for battery technology is greater than OPEC's influence over oil," [7].

More stringent regulation in regions like Europe is giving the upper hand and a competitive price advantage to carmakers that have control over their own battery supply. While efforts to curb emissions in line with environmental targets have created problems for European automakers and those importing vehicles from countries like South Korea, Japan and the US, it has created a window of opportunity for Chinese companies such as BYD, Geely, SAIC Motor, Chery and Great Wall.

BEVs are a major part of China's long-term economic growth plans, and the country is leveraging all advantages to ensure the sustained growth of its automotive industry [8]. Comparatively lower labour costs are a key factor, with legacy carmakers depending on mature and expensive labour markets while also having to source battery parts directly from China. As observed by Michael Kasuba: "Competition from China, particularly around vehicle costs, puts its OEMs in a commanding position. Being able to sell a vehicle for $10,000 could have a huge impact on the market. The question will be quality and brand perception – and whether one or more of these brands can gain a foothold in the market and convince consumers in the US of their perceived quality."



07 BEVs and the battle for the White House

With the 2024 US presidential election taking place later in the year, China's advantage in the race for electrification – seen by some as a threat to America's automotive industry – is likely to become a key topic in the battle for the White House. "The introduction of Chinese-made BEVs to the North American market will depend on the political climate in the country, more than anything else," Puhl suggests.

With Nikki Haley exiting the 2024 presidential race in March, Donald Trump is the only Republican candidate left, teeing up a rematch with incumbent Joe Biden later in the year [9]. Mr. Trump has been a vocal critic of President Biden's green energy policies, arguing that such legislation will result in job losses across America's automotive heartland, with China already in a commanding position to dominate the market [10].

In addition to weak consumer demand, political uncertainty around the transition has prompted some American automakers to pause their electrification plans.

For example, GM is delaying production of the Chevrolet Equinox EV, Silverado EV and GMC Sierra EV at its Orion Assembly plant in Michigan. GM CEO Mary Barra told shareholders that the company is "moderating the acceleration of EV production in North America to protect pricing, adjust to slower near-term growth in demand, and implement engineering efficiency and other improvements". [12]

Only 11 of the 16 electric models presented by GM by December 2023 were available for sale, with four of the total range exclusive to the Chinese market. According to JATO Dynamics data for 52 markets around the world, BEVs made up just 3.5% of GM's global sales in 2023. Ford, the other major American automaker, offered four electric models (excluding vans) by December 2023, two of which were available in the US.

Global sales of Ford vehicles totalled 4.41 million units, of which only 116,000 units were fully electric. Over the course of the last year, Ford's electric vehicle business incurred a loss of nearly 4.7 billion and in October 2023, the US manufacturer announced that it would be postponing $12 billion in planned investment in new BEV manufacturing capacity. "Despite plans to be prepared for the shift to electric, the latest moves by GM and Ford highlight that they are taking more of a wait and see approach," Michael Kasuba notes.

BEV offer Dec 2023	General Motors				Ford	Tesla
	Chevrolet	Cadillac	Buick	GMC		
North America						
Europe						
China						
Total presented	6	4	3	3	4	5
Total available Dec-23	4	2	3	2	3	5

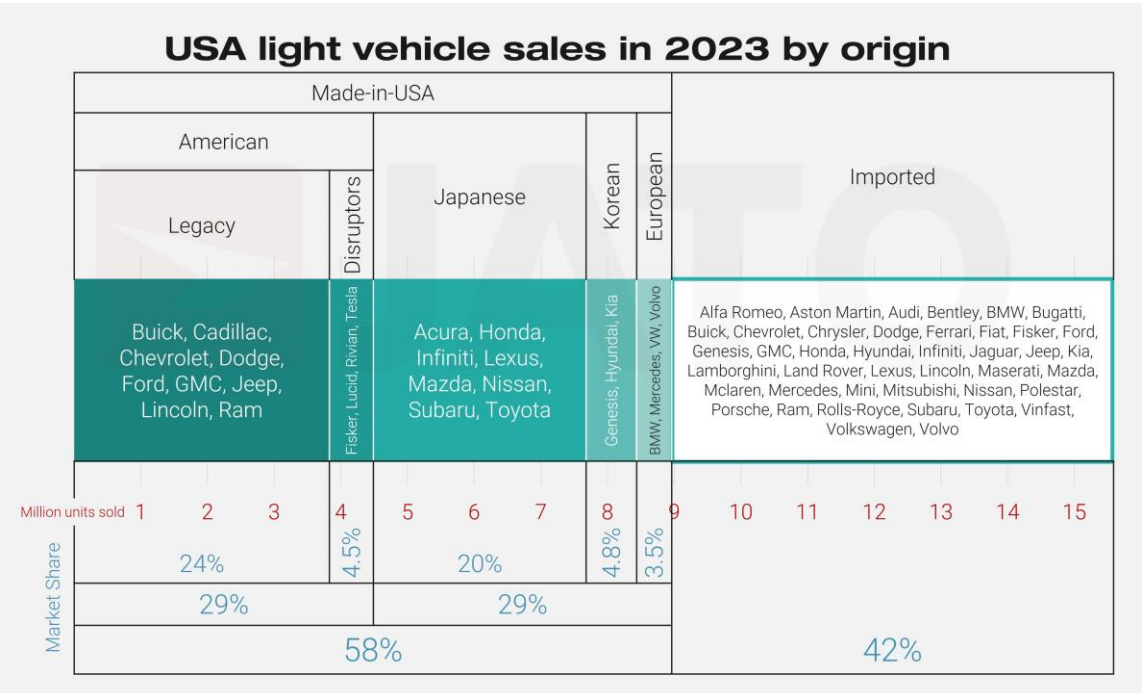
Not available by Dec-23; Excludes vans; Car images by IMAGIN.studio

08 Tesla, the exception to the rule

Tesla – the world's largest maker of BEVs – sold 1.81 million units in 2023, ahead of the 1.57 million units sold by China's BYD. The US accounted for 35% of its global sales, followed by China (34%) and Europe (20%). While Tesla is a clear success story, other US manufacturers are failing to keep pace.

Despite losing market share within the BEV segment as other players have entered the electrification race in recent years, Tesla remains the dominant force in the US by a considerable margin. For instance, Tesla accounted for 55% of all BEV sales in the country and sold more EVs than the 25 other brands in the market combined in 2023.

Puhl attributes Tesla's transformation from innovative disruptor to household name in the US to its marketing strategy: "Before Tesla's emergence, legacy marketing for BEVs and hybrid models centred around being green. Tesla focused more on the fun you can have with an EV. It has also gained market share over the past couple of years by cutting prices."



"Tesla's brand perception is also so strong because it is the first mass-produced OEM focused exclusively on EVs in the US," Kasuba added. "It is distinct in the market, whereas consumers may be having a hard time differentiating between the offerings of legacy firms."

Tesla's market share is notably higher in the US than in other regions; in Europe and China the company boasts 18% and 12% market share respectively. In other words, the growth in demand for BEVs in the US to date has been synonymous with the Tesla brand, and the recent introduction of the Cybertruck could see the company further strengthen its hold on the country's BEV market.

Tesla's leadership position means it will play a pivotal role in determining the direction of the country's automotive industry. Collaboration with the incoming administration will be critical to ensure regulation serves in the national interest without hurting America's domestic automotive industry. Furthermore, the proposed construction of a new Tesla Gigafactory in Mexico will make the California-based manufacturer a key voice in discussions related to supply chain challenges.

"The steps Tesla takes will not only determine its own fate but that of its competitors and the wider automotive industry in the US. To maintain its leadership position in the global automotive market, the US policy makers must ensure they embrace change by bringing all the major players round the negotiating table," Munoz commented.

09 Conclusion

The EV transition has both sympathisers and detractors in the US. For some, the potentially negative impact on employment rates in America's ICE automotive heartland outweigh the potential future benefits, while others are embracing the shift, considering it an essential step on the country's journey to decarbonisation.

As the world's second-largest light vehicle market, the US has a vital role to play in driving the global automotive industry to a more sustainable future. However, several significant hurdles must be addressed for widespread adoption to become a reality.

Regulation intended to protect US economic interests is creating challenges for manufacturers looking to reduce costs and deliver a more affordable offering to consumers. This, alongside the political backdrop in the country, is another obstacle for domestic automakers looking to encourage widespread adoption.

In addition to the political challenges, the US is something of a unique case due to its heritage and long-standing affinity with ICE vehicles. While the American government has a vital role to play in creating the conditions that will enable manufacturers to fulfil their EV ambitions, widespread adoption will hinge upon a mindset shift among consumers.

The upcoming presidential election could determine the direction of the next chapter in the country's journey towards electrification. Whatever the outcome, there is a clear need for collaboration and constructive debate if the challenges are to be addressed, and further polarisation will only add pains to this process.

Notes

(1) Forbes, $5 Milestone: Gas Prices Hit An All-Time National High
(2) GlobalPetrolPrices.com, Gasolines prices
(3) International Energy Agency, Global EV Outlook 2023, p. 44
(4) International Energy Agency, Global EV Outlook 2023, p. 43
(5) International Energy Agency, Global EV Outlook 2023, p. 44
(6) International Energy Agency, Global EV Outlook 2023, p. 44
(7) Bloomberg, Biden's EV Dreams Are a Nightmare for Tesla and the US Car Industry
(9) U.S. Department of Labor, Minimum Wage
(9) BBC News, Nikki Haley exits race but stops short of endorsing front-runner Donald Trump
(10) The Washington Post, Biden vs. Trump on electric vehicles and China's threat
(11) The Washington Post, Biden vs. Trump on electric vehicles and China's threat
(12) Wood Mackenzie, Bumps in the road for EVs

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