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The EV leapfrog – how emerging markets are driving a global EV boom

Growth in emerging markets has turbocharged global EV sales in 2025, with over a quarter of new cars sold being electric. New markets are rapidly switching to EVs, joining Europe and China in reaching high shares, and leapfrogging legacy auto markets in the process.

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About

This report examines the latest changes in the global EV landscape in 2025, analysing available monthly data for 60 countries which made up over 97% of global EV sales in 2024. It focuses on the passenger car market and, where possible, uses data for the first ten months of the year to compare across countries in a standardised way. It shows how several emerging markets are rapidly reaching high EV sales shares, overtaking the shares reached in advanced economies. It also highlights the enabling policies that have driven this transformation and shows how battery electric vehicles are able to significantly reduce demand for fossil fuels.

Summary

Ember's analysis of available national data through 2025 reveals an exciting trend as emerging markets increasingly turn to electric vehicles (EVs), seeing strategic benefits in embracing electrified alternatives for road transport.

- **The global race is on.** 39 countries have reached an EV sales share larger than 10% in 2025, a third of which are outside Europe. In 2019, there were only four countries that had reached this milestone, all within Europe. Notably, China reached over 50% EV sales share for the first time this year. Between January and October 2025, EVs have made up over a quarter of global new car sales, up from less than 3% in 2019.

- **ASEAN emerges as a new leader in EV adoption.** Viet Nam has doubled its EV sales share since 2024 to reach close to 40% in 2025, overtaking the UK and the EU for EV sales penetration. Thailand has exceeded 20% EV sales share for the first time so far this year, up from 1% in 2019. Singapore, Thailand and Viet Nam have all reached higher battery electric vehicle sales shares than the EU average.

- **Emerging markets are overtaking advanced economies like the US and Japan.** India, Mexico and Brazil now have a higher EV sales share than Japan, while Indonesia's EV sales share has reached 15% this year, overtaking the US for EV penetration.

- **Chinese EV exports are finding new markets outside the OECD.** Since July 2023, non-OECD markets have been responsible for all the growth in Chinese EV exports, with Mexico, Brazil, UAE and Indonesia emerging as top destinations in 2025.

This is a major turning point. In 2025, the centre of gravity has moved. Emerging markets are no longer catching up, they are leading the shift to electric mobility. These countries see the strategic advantages of EVs, from cleaner air to reduced fossil fuel imports.

The assumption that EV growth will stall outside Europe and China is already outdated. Emerging markets will shape the future of the global car market. The choices made now on charging infrastructure and early support will determine how fast this momentum continues.

Euan Graham
Electricity and Data Analyst, Ember

The EV race has gone global

Over a quarter of new car sales this year have been electric. Adoption is now being driven by a broad range of countries, with several emerging economies now leaders in transport electrification.

New milestones as more countries reach high EV shares

Electric vehicle sales have shown strong year on year growth in 2025, reaching over a quarter of total new car sales so far this year. The main difference this year is that as legacy auto markets roll back policies to support EVs, emerging markets are overtaking them.

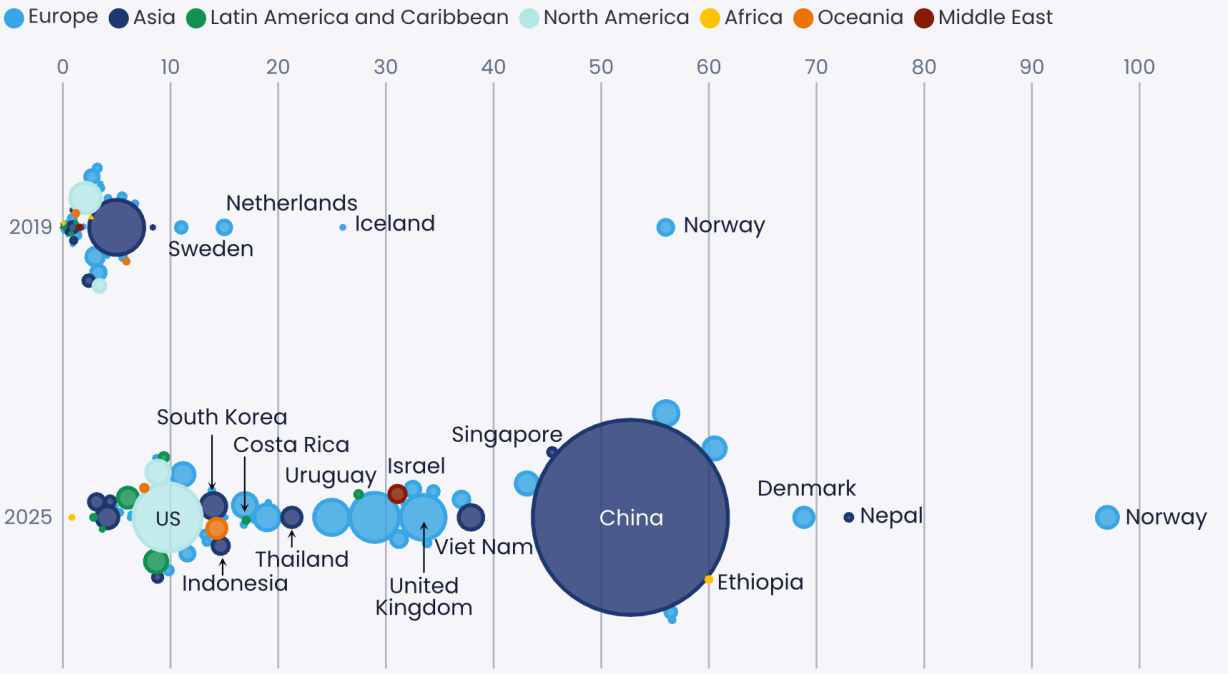
More markets reaching higher shares outside Europe

In 2019, there were four countries with an EV sales share above 10% - all of them within Europe. Fast forward to 2025, and the landscape has shifted drastically. 39 countries have had an EV share larger than 10% so far in 2025, 12 of which are outside Europe.

The race to 100% EV sales is well underway

EV share of new passenger car sales (%)

Bubble sizes are relative to total EV sales



Source: IEA (2019 data), Ember analysis of publicly available national data for Jan-Oct 2025.
EVs include plug-in hybrid electric vehicles and battery electric vehicles. Sales figures in 2025 are an estimate assuming the same year-on-year change seen so far in 2025 continues until the end of the year. For Ethiopia and Nepal, 2024 data is used as more recent annual data is not publicly available.

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China is set to exceed 50% EV share for the first time in 2025. The country is on track to make up close to two thirds of global EV sales for the second year in a row, cementing its place as the largest global EV market. Data for 2025 reflects how other countries are seeking to replicate China's strategic focus, and access the benefits electrified transport can provide.

Emerging markets are leapfrogging to high shares

Across regions, we are now seeing multiple emerging markets surpassing advanced economies in their EV sales share. While the market share of EVs in countries such as Japan and the US has remained at the same level for the last two years, a radical transformation has been underway, from Southeast Asia to Latin America.

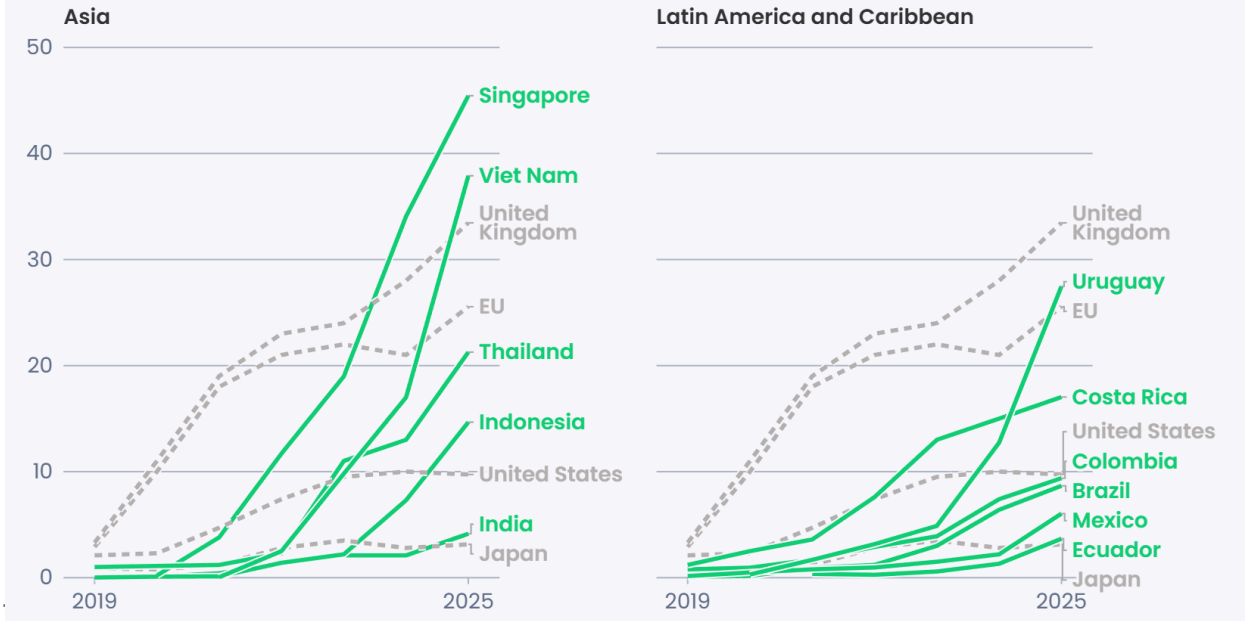
Several ASEAN countries now have among the highest EV sales penetration of any country in the world. Close to 40% of Viet Nam's new car sales this year have been EVs, almost all of them battery electric vehicles made by local manufacturer VinFast. It is now gaining ground on regional leader Singapore, where the EV sales share has exceeded 40% of new car sales so far in 2025.

Both countries now have higher levels of EV sales penetration than the UK (33%) and the EU (26%). The rise in EV sales across the region has been meteoric - even as recently as 2021, Viet Nam had an EV sales share of less than 0.05%.

Legacy auto markets are being overtaken as new EV markets begin to take off

EV share of new passenger car sales (%)

Grey lines show EV sales shares in select advanced economies for comparison



Source: IEA (to 2024), available national data for Jan-Oct 2025
EVs includes plug-in hybrid electric vehicles and battery electric vehicles.

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Thailand has reached 20% EV sales share and has sold more EVs than EU frontrunner Denmark in the first ten months of 2025. And in Indonesia, EVs have made up 15% of new car sales, surpassing the EV sales share in the United States for the first time.

In Latin America, Uruguay has emerged as a new frontrunner, with EVs making up 27% of new car sales, roughly level with the EU. Costa Rica has reached a sales share of 17% so far this year. Meanwhile, Mexico, Colombia and Brazil continue to show steady growth, and now have a higher EV sales penetration than Japan, where the EV sales share remains around the 3% level it has been at since 2022. For Brazil and Colombia, the EV sales share is now approaching 10%.

In Europe, Türkiye has seen rapid growth in EV sales in 2025, with the share of new car sales reaching 17% - almost all of which are battery electric vehicles (BEVs). The country has overtaken Belgium to become the fourth largest BEV market in Europe by sales volume.

Beyond this, there are several countries which have enacted ambitious policies to incentivise EV adoption, but which don't publish regular monthly sales data. Ethiopia has banned the import of internal combustion engine (ICE) vehicles since 2024, with official data indicating the EV sales share rose to 60% that year. In Nepal, EVs made up 76% of new car sales in 2024.

A new strategic focus delivering benefits

Supportive policies enable markets to leapfrog to high EV shares

Rapid increases in EV sales have been helped by the introduction of new policy support mechanisms, as many emerging markets increasingly view EVs as a strategic priority. Electric vehicles offer routes for countries to reduce fossil fuel imports, build new industries and improve air quality.

For some countries, embracing electric vehicles brings the possibility of drawing investment in new industries and creating jobs. Türkiye has introduced tax cuts for new electric vehicles, and made efforts to draw foreign investment in EV manufacturing, including a new BYD manufacturing plant. Indonesia introduced reduced VAT on EV sales for cars which met a certain threshold of local content requirement in 2023. It also temporarily reduced import tariffs for manufacturers who committed to open manufacturing facilities in the country by 2026. As of May 2025, seven EV manufacturers had committed to setting up facilities, as well as Chinese battery manufacturer CATL. Vietnamese EV manufacturer VinFast initially built scale by selling direct to affiliate ride-hailing companies and building its own charging network, before successfully pivoting to the consumer market. So far this year, three quarters of the company's sales have been direct to consumers, with their flagship VF 3 being the best-selling car in Viet Nam this year. The World Bank has estimated that the EV industry could create 6.5 million jobs in Viet Nam by 2050.

In other countries, it provides the opportunity to reduce fossil fuel imports and boost air quality. Nepal and Ethiopia, countries with major hydropower generation capacity and a high degree of reliance on imported fossil fuels, have both taken rapid steps to incentivise higher rates of adoption - with Ethiopia banning the import of ICE vehicles since 2024. Viet Nam announced a renewed push towards clean transportation in March 2025, including the implementation of low emissions zones in cities, in order to combat intense air pollution. The country ranks in the top ten countries in Asia for air pollution.

These commitments stand in contrast to the markets such as the US and Canada, where incentives have been rolled back in 2025. As part of the 'Big beautiful bill', the Trump administration has removed the federal EV tax credit, coming into effect in October 2025. In Canada, allocated funding for the country's iZEV program ran dry, and the program has been halted since January 2025.

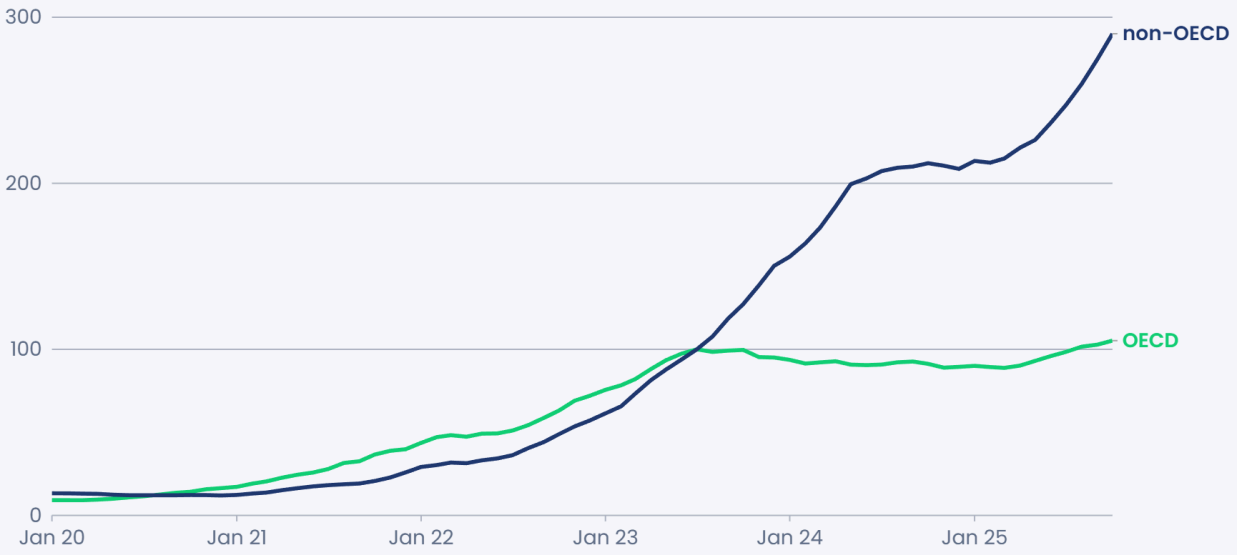
Chinese exports are meeting demand for EVs in new markets

Supportive policies have been complemented by the emergence of China as a globally dominant supplier of EVs, with emerging markets fast becoming top destinations for these vehicles.

In the last two years, almost all the growth in China's EV exports has come from markets outside of the OECD. The value of China's EV exports to non-OECD markets has almost tripled since July 2023 (+$16.2bn), while exports to OECD markets increased by around 5% (+$2.7bn).

Almost all the growth in Chinese EV exports in the last two years has come from non-OECD markets

Rolling twelve month sum of Chinese EV export value, indexed (Jul 2023 = 100)



Source: China Cleantech Exports Data Explorer, Ember
EVs include plug-in hybrid electric vehicles and battery electric vehicles.

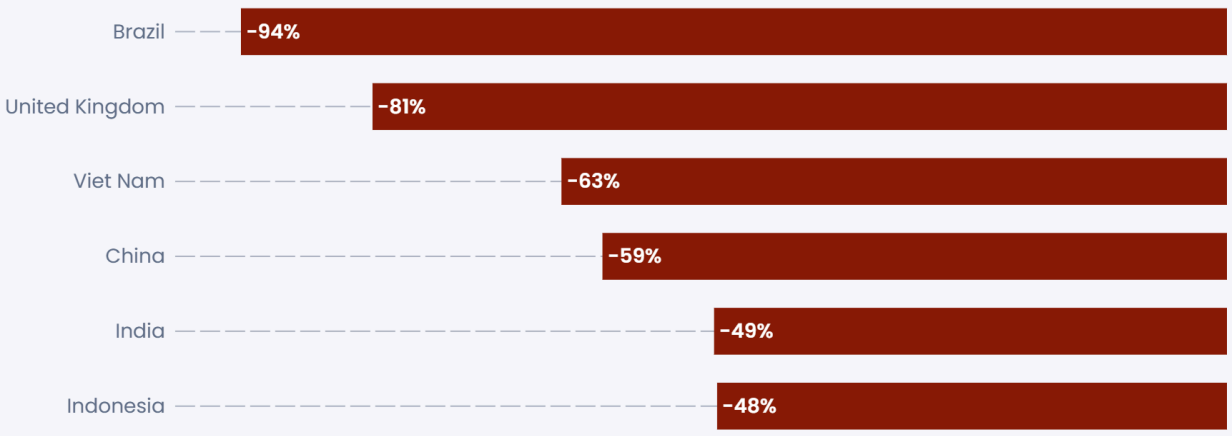
Beyond supplying the growth in exports, several emerging markets have become the largest destinations for Chinese EVs in absolute terms. Four of the ten largest value markets for Chinese EV exports so far in 2025 are outside of the OECD: Brazil, Mexico, United Arab Emirates and Indonesia.

EVs are driving down fossil reliance

Due to their high levels of efficiency, electric vehicles are a powerful tool to reduce fossil fuel dependence. Whereas ICE vehicles waste around 80% of the energy in the fuel, EVs use close to 80% of the electricity they consume. This leads to large reductions in overall fossil fuel consumption even if a country's electricity supply is heavily dependent on fossil generation.

The efficiency of electric vehicles reduces fossil fuel use even in markets where electricity is produced from fossil fuels

Reduction in primary fossil fuel demand by switching from driving an ICE* vehicle to a battery electric vehicle, using each country's 2024 generation mix (%)



Source: Ember analysis, see methodology.
*Internal Combustion Engine. Analysis considers fossil fuel demand from operating a typical passenger car.

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In Brazil, due to its exceptionally clean electricity mix, battery electric vehicles (BEVs) deliver an estimated 90% reduction in fossil fuel demand compared to ICE vehicles, thanks to the low share of fossil fuels in the power mix.

But because an EV is roughly three times as efficient as an ICE vehicle, they always deliver savings. In Indonesia, they reduce fossil fuel demand by close to 50% compared to a typical ICE vehicle, despite an electricity mix dominated by fossil fuels.

Conclusion

The policy and consumer shift in emerging markets towards electric vehicles is a globally significant trend, bringing with it new leaders in transport electrification.

It is also set to have profound impacts on future oil demand, with emerging markets set to make up the majority of new car sales between now and 2050. The IEA's recently launched Current Policy Scenario (CPS), which envisages a world with continued high oil demand, hinges on the assumption that EV sales shares outside of China and Europe remain at 2024 levels. This assumption is already shown to be flawed.

Investment in charging infrastructure and policy mechanisms to support early adoption will be key in order for more markets to follow in the footsteps of these new leaders.

Supporting materials

About Ember

Ember is an independent energy think tank that aims to accelerate the clean energy transition with data and policy. Its vision is a clean, electrified energy system for all. It gathers, curates and analyses data on the global energy system, publishing this openly and accessibly. It uses data-driven insights to shift the conversation towards high impact policies and empower other advocates to do the same. Founded in 2008 as Sandbag, it formerly focused on analysing and reforming the EU carbon market, before rebranding as Ember in 2020. Its diverse team brings together energy analysts, data scientists, communicators and team-builders based around the world in over 20 countries, including Australia, Brazil, Colombia, Germany, India, Indonesia, Poland, South Africa, Türkiye, the UK and US.

Methodology

Ember analysed developments in the global passenger car EV market in 2025 using publicly available national data. This was primarily accessed through Robbie Andrew's data portal, which provides monthly data for many countries. For Latin American countries, data has been accessed via the Zero Emissions Mobility Observatory for Latin America (ZEMO), which standardises data from national sources. The only exception is Costa Rica due to lack of availability, where data has been taken from a national automobile association. Data for South Africa and Australia has been obtained from national automobile association data. For Viet Nam, where no single source of data is available, Ember combined data on Vietnamese passenger car sales from Hyundai, VinFast and the Vietnamese Automobile Association.

All 2025 data covers the period between January-October if available. For Mexico, Canada, Australia and South Africa data is only available up to September 2025. Ethiopia and Nepal do not provide monthly data, and so 2024 data is used from the Ethiopian Energy Outlook and import data for the FY 2024-25 is used for Nepal.

This report uses data from the IEA's EV data explorer where available as a source of historical data. In the case of Singapore and Uruguay, which are not included in the explorer, national data has been used. Publicly available national data was validated against IEA's data to ensure accuracy and consistency across sources.

Analysis on primary fossil fuel demand savings from driving a BEV car instead of an ICE car use typical assumptions for each vehicle. Assumed EV efficiency of 20 kWh/100km, ICE efficiency of 7.5 l/100km, and ICE vehicle fuel energy content of 10 kWh/l. It assumed charging an EV used the average grid electricity mix for each country in 2024. To convert to primary energy demand, the analysis assumed refining losses of 15%, coal plant efficiency of 35%, gas plant efficiency of 45%, and other fossil efficiency of 35%.

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