IMP

The Road Ahead: Global Automotive

Electrification, Geopolitics, and the Race

to Reinvent the Global Automotive Industry

Industry Intelligence White Paper

Automotive Intelligence | Electrification & EV Strategy | Geopolitics & Trade | AI & Technology

B2B INDUSTRY INTELLIGENCE | IMP INTERMEDIAPARTNERS

IMP InterMediaPartners | Industry Intelligence Series 2025

01 Executive Summary

The global automotive industry stands at a structural inflection point unlike any it has navigated before. The global automotive ecosystem — including vehicle sales, finance, aftersales, and digital services — exceeds $2.7 trillion annually. — projected to reach $3.26 trillion by 2030 — is being simultaneously remade by electrification, artificial intelligence, geopolitical fragmentation, and a fundamental redistribution of competitive power from West to East. The forces at work are not temporary disruptions. They are permanent reconfigurations of who makes cars, how they are made, where they are sold, and what they contain.

Electric vehicles passed a critical threshold in 2025: over a quarter of all new cars sold globally were electric. China exceeded 50% EV sales penetration domestically — becoming the first major market to do so — while exporting nearly two million units in the first eleven months of the year. BYD, a company that began manufacturing batteries in 1995, is now the world's largest producer of electric passenger cars by volume.

Against this backdrop, the United States has entered a period of deliberate policy-driven deceleration. Federal EV tax credits were eliminated in late 2025. The national charging infrastructure programme was frozen. 25% tariffs on all non-US-assembled vehicles were imposed, raising costs across the entire value chain and suppressing consumer demand. S&P; Global Mobility has revised its US BEV market share projection for 2030 downward from 40% to approximately 30%. The strategic window — once available — is narrowing rapidly.

Europe faces a different set of constraints: regulatory complexity, high energy costs, industrial incumbency in combustion technology, and the challenge of moving fast enough to meet climate targets while protecting employment in legacy supply chains. Chinese manufacturers, meanwhile, have developed new models in 20 months — half the time required by European incumbents — and are expanding production into Brazil, Hungary, Thailand, Mexico, and Indonesia, bypassing tariff barriers by building locally.

This paper covers the full landscape: the state of the industry, the EV race and who is winning it, Chinese competitive dominance, the transformative role of AI across the value chain, the environmental reality of both ICE and electric technologies, the extraordinary acoustic and quality-of-life transformation an all-EV urban environment would represent, the second life of the battery, the structural risk to the US industry, the challenges in emerging markets, and what it all means for the B2B ecosystem that serves automotive manufacturers and suppliers globally.

$2.75T	20.7M	>50%	4.6M NEVs
Global Automotive Market 2025	Global EV Sales 2025 (+20% YoY)	China EV penetration of new car sales 2025	BYD vehicles sold in 2025 (world #1)

02 The State of the Global Automotive Industry

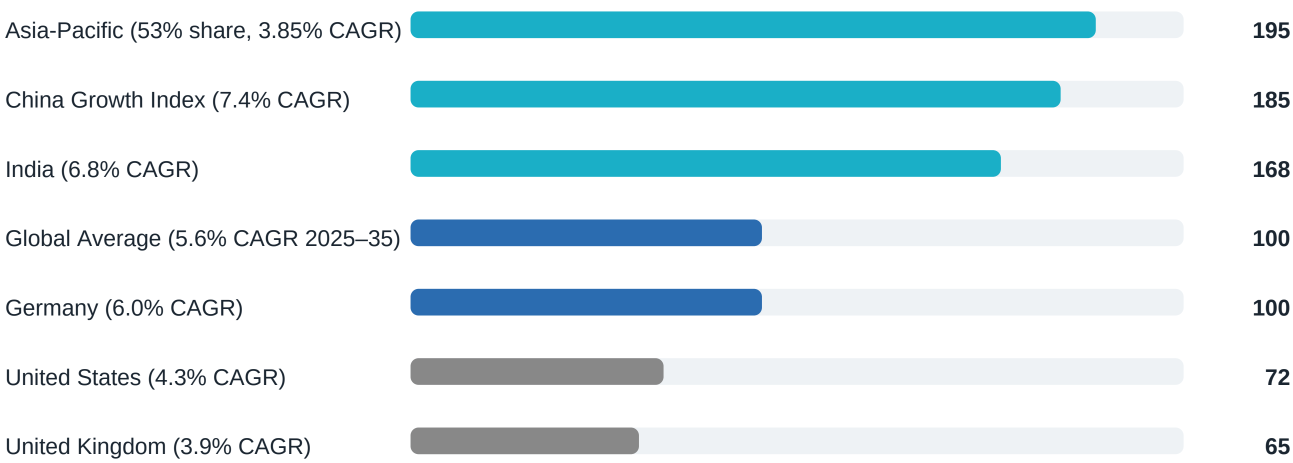
The automotive sector entered 2025 as the world's largest manufacturing industry by revenue — and one of its most structurally stressed. Global light vehicle sales reached approximately 98.7 million units, a modest 2.7% increase over 2024, constrained by elevated vehicle prices, high borrowing costs, and the destabilising effects of US trade policy. The $2.75 trillion market encompasses not just vehicle sales but aftersales, software, financing, and an increasingly important connected services layer.

Profitability across the industry has come under extraordinary pressure. In the first quarter of 2025, Ford's operating profit declined by over 60% year-on-year, Volkswagen's fell by nearly 40%, and GM's by 6.6%. These figures reflect the compound effect of tariff exposure, the cost of simultaneous investment in electrification and legacy platform maintenance, and weakening consumer confidence in key markets. Nissan reported a net loss of $4.55 billion for its fiscal year ended March 2025, announced a 15% workforce reduction, and plans to consolidate its global production to 10 assembly plants from 17.

A Market of Structural Contrasts

The headline numbers obscure profound regional divergence. Asia-Pacific accounts for 53% of global automotive market value and is growing at a 3.85% CAGR — faster than any other region. China remains the world's single largest vehicle market by volume, though its share of Western brand sales has collapsed from over 60% before the pandemic to under 38% today as domestic EV manufacturers capture an ever-larger portion of the market. India is growing at 6.8% annually. Europe's Big Five markets — Germany, France, the UK, Italy, and Spain — collectively account for 65% of European volume but face structural headwinds from regulatory compliance costs, energy prices, and subdued consumer sentiment.

The industry's competitive dynamics have been fundamentally altered by three coincident transformations: the shift from mechanical to software-defined vehicles, the electrification of the powertrain, and the entry of technology companies — including Xiaomi and Huawei in China — into automotive manufacturing. These transformations require incumbents to fund two business models simultaneously: maintaining and evolving profitable ICE product lines while building entirely new EV and software capabilities at scale. The capital intensity is immense. The margin pressure is real. And the timeline is not optional.



Regional automotive market growth index 2025–2035. Base = Global Average. Source: Future Market Insights, Mordor Intelligence, 2025.

03 The Electric Vehicle Revolution: Where We Are Now

Electric vehicles are no longer an emerging technology. They are the dominant form of new mobility investment globally, a reshaper of supply chains, a catalyst of geopolitical tension, and — in China and parts of Southeast Asia — the majority choice for new car buyers. The numbers that define the transition are not projections. They are current reality.

20.7M	39	>50%	+33%
Global EV units sold in 2025 (+20% YoY)	Countries with >10% EV share (4 in 2019)	China EV penetration of new car sales	European EV market growth in 2025 vs 2024

Global EV sales reached 20.7 million units in 2025, a 20% increase year-on-year. China accounted for approximately two-thirds of global EV sales for the second consecutive year, with a domestic penetration rate exceeding 50% of all new car sales. The European market grew by 33%, with battery electric vehicles up 31% and plug-in hybrids up 38%. In the UK — the second-largest European car market — electric cars reached a 30% sales share, up from 24% in 2023.

The geographic spread of EV adoption has become a defining feature of the transition. Vietnam doubled its EV sales share to approach 40% in 2025, surpassing both the UK and EU averages. Thailand exceeded 20% for the first time. By January to October 2025, EVs accounted for over a quarter of all new car sales globally — a figure that was less than 3% in 2019. This is not a niche story. It is a mainstream market transformation happening faster than even the most optimistic projections suggested five years ago.

The Battery Cost Curve Closes the Price Gap

The structural driver of EV adoption is battery cost deflation. Euro 7 tailpipe standards, entering force from 2025, raise the compliance cost per ICE vehicle by $1,400 to $1,900 — directly compressing the sticker price gap against entry-level EVs. Fleet operators managing fixed urban routes are reporting payback periods under three years for light commercial EVs. Capital markets continue to favour pure-play EV firms, and OEMs are redirecting powertrain R&D budgets from combustion optimisation to silicon power modules, battery chemistry, and software architecture. The transition is, as Mordor Intelligence notes, structurally irreversible.

However, the EV market is not monolithic. China, Europe, and Southeast Asia are accelerating simultaneously but for different reasons: policy mandates in Europe, cost competitiveness and infrastructure in China, and a combination of tariff incentives and Chinese manufacturer investment in Southeast Asia. The United States, Canada, and Japan represent a different trajectory — slower, complicated by policy uncertainty, consumer financing pressures, and infrastructure gaps that policy funding has now been withdrawn to address.

04 Chinese Dominance: Speed, Scale, and Global Reach

The rise of China's automotive industry from low-cost domestic manufacturer to global EV powerhouse is the most significant competitive development in the history of the automobile. China now accounts for over 70% of global EV production, processes over 60% of global lithium despite limited domestic reserves, controls 37.9% of the global EV battery market through CATL and BYD, and exported approximately 5.5 million vehicles in 2024 — making it the world's largest vehicle exporter, a position projected to be maintained at over 7 million units in 2025.

BYD's 2025 performance is the headline: 4.6 million NEVs sold globally — a new record — including 2.26 million battery-only passenger cars, making it the world's largest BEV manufacturer by volume. Overseas sales surpassed one million units for the first time in a single year. BYD is building or has opened manufacturing plants in Thailand, Indonesia, Hungary, Turkey, Brazil, and Mexico. It operates R&D centres in Brazil and Hungary. It has invested in purpose-built cargo ships to control export logistics. It is not exporting cars. It is building a global industrial infrastructure.

> ***In the year leading up to October 2025, BYD, Wuling, and Geely collectively received approval for 83 new passenger car models in China. Volkswagen was approved for six. Nissan for two.***
>
> — Rest of World, November 2025

Speed as a Competitive Weapon

Chinese EV firms develop new models in approximately 20 months. Their non-Chinese competitors — whether European legacy car companies or American manufacturers — typically require 40 months. This two-to-one development speed advantage is not simply a function of cost. It reflects China's full-stack control of the EV supply chain: rare earth materials, battery chemistry, cell manufacturing, module production, software development, and vehicle assembly are vertically integrated or operated through fixed supplier relationships that eliminate sourcing and styling lead times. Of the 180 new car models released globally between November 2024 and October 2025, 91 were from Chinese brands.

Tariff Circumvention Through Local Production

The Western response to Chinese EV competitiveness has been tariffs: 100% duties on Chinese EVs in the US and Canada, up to 35.3% in the EU, and 25–30% in various other markets. Chinese manufacturers have responded not with retreat but with investment. By producing locally — in Hungary, Brazil, Thailand, Mexico, Indonesia, Malaysia, Turkey — they access domestic market incentives, avoid import duties, create local employment that makes them politically embedded in host markets, and use those positions as export platforms to neighbouring countries.

Brazil has become a strategic battleground: Chinese EVs accounted for over 85% of EV sales in Brazil in 2024, with electric car sales more than doubling as duty exemptions remained in place. Chinese exports to Mexico grew by 2,367% year-on-year in November 2025 alone as BYD launched affordable models in that market. Six of the world's top ten global EV sellers by volume are now Chinese brands. Canada signed a framework agreement in early 2026 allowing Chinese EVs access at a 6.1% most-favoured-nation tariff with an initial quota of 49,000 vehicles — further expanding the perimeter of Chinese market reach at America's doorstep.

The competitive implications for the global B2B automotive supply chain — including equipment manufacturers, tier-1 and tier-2 suppliers, engineering service providers, and technology vendors — are profound. Chinese OEMs are increasingly bringing their own domestic supply chain partners into international markets. The assumption that Western supplier relationships with traditional OEMs provide structural insulation from Chinese competition should be actively reassessed.

05 AI in the Automotive Industry: From Pilot to Infrastructure

Artificial intelligence has moved from the periphery of automotive R&D to its structural core. The AI automotive market — valued at $4.71 billion in 2025 — is projected to reach $48.59 billion by 2034 at a CAGR of nearly 30%. Auto executives are directing nearly triple the R&D budget share toward software and digital investments in 2025 compared to previous cycles, according to the IBM Institute for Business Value — from 21% to 58%. The shift is strategic and permanent: vehicles are being redefined as software platforms on wheels, with AI as the enabling architecture.

The Volkswagen Group has deployed over 1,200 active AI applications across the group, with hundreds more in development. Audi alone has more than 100 AI use cases under development at its production sites, covering quality monitoring, logistics optimisation, and generative AI applications. Mercedes-Benz is using IBM Quantum computing to accelerate battery simulation. BMW uses predictive algorithms to monitor battery health, brake systems, and component wear in real time, enabling proactive maintenance before failure occurs.

AI in Design and R&D

Generative AI is compressing vehicle development cycles significantly. AI speeds simulation processes, cutting evaluation timelines from days to minutes. In design, generative modelling enables engineers to iterate across thousands of design variants in hours rather than months. Material selection, structural optimisation, aerodynamic modelling, and crash simulation are all being accelerated by AI-driven tools. The IDC estimates the global automotive sector will invest $11.1 billion in cognitive and AI technologies in 2025, generating a projected 10–20% reduction in the cost and time required to develop new systems and components.

AI in Manufacturing

On the factory floor, AI is enabling a transformation from reactive maintenance to predictive operations. Machine vision systems detect defects with greater accuracy and consistency than human inspectors. Digital twins — AI-enriched virtual replicas of production lines — allow manufacturers to simulate throughput scenarios, test configuration changes, and validate safety procedures without disrupting live production. Xiaomi's automotive factory in China, which produces the SU7 sedan — which outsold the Tesla Model 3 in its first year — integrates gigacasting, advanced automation, and AI-driven quality control throughout the assembly process. The facility represents the most advanced publicly available template for what an AI-native automotive factory looks like.

ADAS, Autonomy, and the Road to L4

Advanced Driver Assistance Systems represent the largest current deployment of automotive AI in consumer vehicles. The global ADAS market is projected to reach $72.2 billion by 2030. By the end of 2025, approximately 60% of cars sold globally include some form of Level 2 autonomy features — adaptive cruise control, lane-keeping assistance, automatic emergency braking. Level 4 driverless systems are operational in commercial robotaxi deployments: Waymo expanded to multiple cities globally, and several Chinese platforms including Baidu Apollo are running fully driverless services in approved urban zones.

The most aggressive AI-in-autonomy development is occurring in China, where the absence of legacy regulatory infrastructure allows faster testing and deployment. BYD received approval for 38 new passenger car models in China in the year to October 2025. Li Auto open-sourced its vehicle operating system in March 2025, estimating that shared development could save the Chinese automotive industry 10–20 billion yuan annually in redundant R&D investment. The AI race in autonomy is not primarily between Tesla and Waymo — it is between Chinese integrated manufacturers and everyone else.

The Software-Defined Vehicle Changes the Business Model

The shift to software-defined vehicles (SDVs) has implications that go well beyond the R&D function. OEMs are beginning to generate recurring revenue through over-the-air software updates, subscription features, connected services, and telematics. This fundamentally alters the automotive business model: from a transaction (selling a car) to a relationship (monetising the vehicle across its lifetime). For suppliers, the strategic implication is equally significant: the software layer is increasingly where differentiation, margin, and customer lock-in are concentrated — and it is a layer where traditional mechanical tier-1 suppliers have limited established presence.

06 The Environmental Equation: ICE vs. EV — A Critical Assessment

The environmental case for electrification is robust but more nuanced than either its advocates or critics typically acknowledge. A comprehensive lifecycle analysis — covering raw material extraction, manufacturing, operational use, and end-of-life — is required to make an honest comparison between internal combustion engine vehicles and battery electric vehicles. The ICCT's 2025 lifecycle analysis of EU passenger cars provides the most authoritative current assessment.

Battery electric vehicles carry a higher production carbon footprint than ICE vehicles — approximately 40% higher at the manufacturing stage — primarily due to the energy intensity of battery mineral extraction and cell manufacturing. A 2024 medium segment EV carries roughly 12 tonnes of CO2-equivalent emissions at the point of manufacture, versus approximately 8 tonnes for an equivalent ICE vehicle. This is the initial carbon debt that EVs must repay through operational emissions savings.

That repayment occurs quickly. The production carbon deficit is typically offset within 1–2 years of normal driving under European grid conditions, or within approximately 17,000 kilometres of use. Over a full vehicle lifetime, the ICCT's 2025 analysis finds that BEV life-cycle emissions are 73% lower than gasoline ICE vehicles under the EU average electricity mix. When powered by renewable electricity, the reduction reaches 78%. A Duke University study published in 2025 found that over their full operational life, ICE vehicles cause 2 to 3.5 times the total environmental damage of EVs when both climate and air quality effects are accounted for.

> ***Even in the worst-case scenario — a battery produced in China and an EV driven in Poland, the most carbon-intensive electricity mix in Europe — the EV will still produce 37% less CO2 over its lifetime than a conventional petrol car.***
>
> — Transport & Environment, 2025

The Grid Dependency Problem

The environmental performance of EVs is inescapably linked to the carbon intensity of the electricity grid used to charge them. A Volkswagen ID.3 charged entirely from fossil-fuel-dominated grid sources generates approximately 38,775 kg CO2-equivalent over its operational lifetime. The same vehicle charged on a renewable-dominated grid produces just 7,033 kg — an 82% reduction. In countries with coal-heavy grids, the EV advantage narrows dramatically. India, with over 60% of power from thermal sources, presents a materially different environmental calculus than Norway or France. This dependency underscores a fundamental policy truth: EV adoption without grid decarbonisation delivers only a partial environmental dividend.

The Mining and Materials Reality

The environmental and geopolitical costs of battery mineral supply chains are significant and must be acknowledged honestly. Producing one tonne of lithium requires approximately two million tonnes of water. The South American Lithium Triangle — Chile, Argentina, Bolivia — has experienced documented water depletion from intensive extraction. Cobalt supply chains in the Democratic Republic of Congo carry persistent concerns regarding labour conditions and environmental degradation. Processing over 60% of global lithium occurs in China, creating a strategic supply chain concentration that mirrors the fossil fuel dependency it is intended to replace.

These are not arguments against electrification — they are arguments for accelerating battery recycling, diversifying mineral sources, advancing alternative chemistries including sodium-ion batteries, and implementing robust supply chain sustainability standards. The EU Battery Regulation, which requires mandatory carbon footprint declarations and recycled content thresholds for EV batteries, represents the most ambitious regulatory framework addressing this dimension. For B2B suppliers and equipment manufacturers serving battery producers, compliance with this regulation is an increasingly non-negotiable market access requirement.

07 The Silent City: Urban Life in an All-EV Future

There is an aspect of the EV transition that receives far less attention than carbon emissions or battery chemistry — and it may prove to be one of its most profound and immediately tangible benefits. Urban noise pollution from road traffic is the second most significant environmental health risk in Europe after air pollution. An estimated 113 million Europeans are regularly exposed to noise levels exceeding 55 decibels. The European Environment Agency attributes approximately 66,000 premature deaths annually in Europe to chronic traffic noise exposure. The health consequences — cardiovascular disease, hypertension, sleep disruption, cognitive impairment in children, heightened anxiety — are well documented and extend far beyond discomfort.

Now imagine London's Marylebone Road at rush hour. Imagine Berlin's Kurfürstendamm on a Saturday afternoon. Imagine the Ringstraße in Vienna or the Grands Boulevards in Paris. These streets are defined by their noise — the percussion of diesel engines, the sharp bark of accelerating combustion motors, the persistent low-frequency throb of trucks. They are acoustically hostile environments. Research shows this noise directly suppresses the use of adjacent outdoor spaces, reduces property values, disrupts sleep in nearby residences, and renders conversation at normal volumes impossible within metres of moving traffic.

What the Research Shows

The acoustic science is well established. Electric motors produce significantly less noise than combustion engines, particularly at the low speeds that characterise urban driving. A 2023 study in a transit-oriented city found that full bus fleet electrification produced maximum traffic noise reductions of 4.4 dB(A) during daytime in urban cores, with approximately 60% of the urban population benefiting from at least 1 dB(A) reduction. This level of noise reduction translates, in the study's analysis, to approximately 4.15 fewer preventable deaths and 112.99 fewer preventable cases of cardiovascular and cognitive disease per 100,000 population annually.

Research consensus identifies a speed threshold: below 50 km/h — which encompasses virtually all city centre driving — EVs produce significantly less noise than ICE vehicles. Above 50 km/h, tyre-road contact noise dominates the acoustic profile regardless of powertrain, narrowing the EV advantage on faster urban and peri-urban routes. This means the most transformative acoustic impact of electrification would occur precisely where urban populations are densest and most affected: in the city centre.

> *The WHO recommends noise levels below 40 dB for restful sleep. Major European city street levels regularly exceed 65–75 dB during traffic hours — 25 to 35 decibels above this threshold. A 4–6 dB reduction represents a halving of perceived loudness for the human ear.*
>
> — WHO Environmental Noise Guidelines / Transport & Environment

The Urban Transformation

The implications of a predominantly or fully electrified urban traffic environment are extraordinary. Pavement cafés and outdoor spaces become genuinely usable rather than something to be endured. Bedroom windows can be opened in city-centre apartments without sleep disruption. Schools near major roads — where acoustic impacts on children's concentration and cognitive development are measurably significant — become quieter. Wildlife returns to urban green corridors. Noise radar systems, already deployed in Paris, Nice, Amsterdam, New York, and Los Angeles, would increasingly target outliers rather than the norm.

There is a regulatory tension emerging that deserves attention. Manufacturers are lobbying for the right to equip EVs with Exterior Sound Enhancement Systems — effectively, artificially generated engine sounds for marketing and brand identity purposes. If adopted broadly, these systems would substantially undermine the acoustic benefit of electrification, trading a genuine public health dividend for brand personality. The current UNR 138 regulation requires only a minimum Acoustic Vehicle Alerting System (AVAS) at very low speeds for pedestrian safety — a proportionate and sensible requirement. The expansion of artificial engine sound beyond this purpose should be considered a public health concern, not merely an aesthetic debate.

> **The Acoustic Dividend**
> A 3 dB reduction in ambient traffic noise — achievable in city centres with 40–50% EV penetration — is perceived by the human ear as a halving of loudness. Full urban EV penetration could reduce peak-hour noise levels by 6–10 dB(A) in dense city environments, equivalent to the difference between a busy restaurant and a quiet library.

08 The Second Life of the Battery: From Waste Problem to Strategic Asset

Every EV battery that enters service will eventually exit it. The question is what happens next — and the answer has moved decisively from 'disposal problem' to 'strategic energy asset.' EV batteries are considered no longer suitable for vehicle use when capacity drops to approximately 70–80% of original. That retained capacity, however, makes them highly suitable for stationary energy storage applications where the performance demands are less dynamic and where cost rather than energy density is the primary purchase criterion.

25–30 GWh	330–350 GWh	~65%	$12.4B
Second-life battery market capacity 2025	Projected capacity by 2030	CAGR of second-life battery market to 2030	Second-life battery market value by 2034

The second-life EV battery market is estimated at 25–30 GWh in 2025 and projected to reach 330–350 GWh by 2030 — a CAGR of approximately 65%, driven by the exponential growth of the EV fleet producing retired batteries. McKinsey estimates that by 2025, approximately 800 million pounds of EV batteries will end their first automotive life annually. By 2035 that figure is projected to reach 3,400 million pounds. The IEA warns that by 2040, up to 1,300 GWh of batteries could be retired annually — far exceeding current recycling infrastructure capacity — making second-life repurposing a strategic necessity rather than an optional sustainability initiative.

Applications Across the Energy System

Repurposed EV batteries are being deployed across a wide range of stationary storage applications. Commercial and industrial uses dominate currently: peak shaving, renewable energy self-consumption optimisation, and backup power for factories and data centres. Grid-scale applications are emerging: B2U Storage Solutions operates second-life battery systems at utility scale in California and Texas, targeting the grid stability requirements created by high wind and solar penetration. Enel has inaugurated a 2.6 MW / 10 MWh second-life battery installation at Rome's Fiumicino airport. Volkswagen and Huayou Recycling launched a cascade mobile energy storage system using retired VW EV batteries for industrial park deployment in China.

The residential segment is the fastest growing end-use category for second-life batteries. Paired with rooftop solar, a repurposed EV battery pack provides home energy storage at 30–50% lower cost than a purpose-built new battery. German cleantech startup Voltfang raised €15 million in Series B funding in June 2025 to scale its second-life battery factory in Aachen. In Norway, Nissan and Stena Recycling signed a strategic partnership to scale second-life EV battery reuse in March 2025. These are not isolated experiments. They represent the early commercialisation phase of a market that will become a major component of the distributed energy storage ecosystem.

The AI Layer

Artificial intelligence is critical to making second-life battery operations economically viable. AI algorithms analyse charge cycle history, predict remaining useful life, and grade batteries for second-life suitability at scale — automating what would otherwise be prohibitively labour-intensive assessment processes. AI-based energy management systems optimise second-life storage performance, forecasting demand and controlling distribution to maximise both economic return and battery longevity. The intersection of EV battery second life and AI is one of the most commercially promising areas within the broader energy transition ecosystem.

For the B2B automotive and energy storage supply chain, second-life batteries represent both an opportunity and a disruption. OEMs that establish programmes to retain ownership of batteries — rather than transferring liability to end users at purchase — will capture significant second-life revenue and gain the data necessary to optimise future battery designs. Suppliers of battery management systems, testing equipment, and storage system integration will find growing demand as the market scales. The circular battery economy is not a sustainability afterthought. It is a significant emerging business.

09 The United States Under Pressure: Policy Reversal and the Risk of Strategic Defeat

The United States automotive industry faces a constellation of self-inflicted risks that, if sustained, could permanently compromise its competitive position in the global EV era. The 2025 policy environment has combined tariff barriers, infrastructure funding withdrawal, and incentive elimination in ways that simultaneously increase costs for manufacturers, reduce demand among consumers, slow charging infrastructure deployment, and signal to the global market that the US is not a reliable jurisdiction for long-term EV investment.

The 11 principal EV policy reversals enacted or initiated in 2025 include: a 10% universal baseline import tariff on virtually all imports, with higher reciprocal rates applied to key partners, a 25% tariff on all vehicles not assembled in the US, elimination of the $7,500 federal EV tax credit at end of 2025, freezing of NEVI charging infrastructure approvals, rollback of California vehicle emission waiver authority; and deregulatory removal of CO2 targets from state transportation planning. The combined effect is to raise vehicle prices, reduce consumer incentives, slow infrastructure deployment, and weaken the regulatory signals that drive OEM investment planning.

> **The Cost Reality**
> Ford projected a $2.5 billion tariff impact in 2025. Anderson Economic Group estimates US vehicle costs will rise by $2,000 to $15,000 per unit. S&P Global estimates US light-vehicle sales could settle at 14.5–15 million units annually if tariffs persist — versus 16 million in 2024.

The Supply Chain Paradox

The stated justification for automotive tariffs is to encourage domestic manufacturing. The practical reality is that no American vehicle can be manufactured from exclusively American parts. A Ford F-150, assembled exclusively in the US, sources approximately 2,700 main components from at least 24 countries. Wedbush analyst Dan Ives described the concept of a US car with all-US parts as 'a fictional tale that does not exist and would take years to make reality.' Tariffs on auto parts — applied from May 2025 — raise the cost of American assembly for every vehicle produced in the country, including the ones the policy is nominally designed to protect.

China at America's Doorstep

While the US restricts domestic EV development, Chinese manufacturers are consolidating positions at its geographic borders. BYD's manufacturing plant under construction in Mexico positions the company to supply vehicles into the North American market through USMCA trade channels. Canada's new import framework for Chinese EVs creates a significant access route. Chinese EV makers exported nearly 200,000 units globally in November 2025 alone — an 87% year-on-year increase — with Mexico and South America among the fastest-growing destinations.

S&P Global has revised its US BEV market share projection for 2030 from 40% to approximately 30%, reflecting the impact of withdrawn incentives and regulatory regression. The structural risk is not theoretical: if the US cedes the EV transition to China and Europe, it does not simply miss a market opportunity. It loses the manufacturing base, the supply chain expertise, the software capability, and the employment in a sector that will define industrial competitiveness for the next 50 years. The US automobile industry transformed the 20th century. The terms on which it enters — or misses — the EV transition will define its role in the 21st.

10 European Obstacles: Regulation, Energy Costs, and the Compliance Trap

Europe's automotive industry faces a paradox: it is the most tightly regulated automotive market in the world by emissions and safety standards, home to some of the most storied automotive brands, and yet it faces a genuine threat of being outcompeted precisely on the electrification transition it mandated. The EU's CO2 emissions targets and Euro 7 regulations are among the most ambitious in the world. The industrial structure required to meet them — battery production, raw materials, software capability — is heavily concentrated outside Europe.

Regulatory Complexity and Compliance Cost

Euro 7 standards, entering force from 2025, increase compliance costs per ICE vehicle by $1,400 to $1,900. The EU's CO2 performance standards for cars and vans have been amended to allow manufacturers to average performance over a three-year period rather than annually — a relaxation that reflects lobbying by European OEMs unable to meet annual targets at current EV sales volumes. Germany is the starkest case: Europe's largest automotive employer and exporter, home to Volkswagen, BMW, Mercedes-Benz, and Porsche, and structurally committed to combustion technology through its vast tier-1 and tier-2 supply chains. Volkswagen's first-quarter 2025 profitability fell nearly 40%. Its legacy platform costs and its EV investment requirements are simultaneously compressing margins.

Energy Prices and the Cost Disadvantage

European industrial energy prices remain significantly higher than in China, the US, and the Middle East — a structural disadvantage that affects battery cell manufacturing, aluminium and steel production, and vehicle assembly energy costs. The EU's Carbon Border Adjustment Mechanism, becoming operative in 2026, imposes carbon costs on imported materials from high-emission jurisdictions — including Chinese battery components — which adds further cost pressure to EV production economics in Europe. European battery gigafactory projects have proceeded, but more slowly than Chinese counterparts, and several announced projects have been delayed or scaled back.

The Chinese Challenge in European Markets

Chinese-produced EVs accounted for 19% of total EV sales in Europe in 2025. EU tariffs of up to 35.3% on Chinese EVs — imposed in response to documented state subsidies — have not reversed this trend. Chinese manufacturers, notably BYD, have responded by producing in Hungary (inside the EU), switching to PHEV exports that attract lower duties, and accelerating their European dealer and service network build-out. European incumbents who assumed tariff protection would buy time for competitive adjustment are finding that the adjustment window is closing faster than expected.

The European automotive industry's B2B supplier ecosystem faces a structural bifurcation. Suppliers deeply embedded in ICE technology — exhaust systems, fuel injection, gearboxes, engine components — face secular volume decline with no crossover path to EV equivalents. Suppliers of software, battery management systems, power electronics, thermal management, and human-machine interface technologies face a structural growth opportunity. The challenge for many European tier-1 companies is managing the ICE sunset while building credible EV capability simultaneously — and doing it with the financial resources available after years of margin compression.

11 The Technology Acceleration Trap: Shorter Cycles, Faster Obsolescence

The traditional automotive product development cycle — four to five years from concept to production, with seven to ten year platform lifecycles and twenty-year supply relationships — is structurally incompatible with the pace of technological change now required. Software-defined vehicles require continuous updates. Battery chemistry is improving at a pace that makes a vehicle's powertrain specifications partially obsolete within three to four years of design. Chinese competitors are releasing new models in 20 months. The consumer expectation set — shaped by smartphones and consumer electronics — increasingly applies to cars: current, updatable, feature-rich, and regularly refreshed.

This creates what can be described as a technology adoption trap. Legacy OEMs carry platform investment amortised over long cycles. They have supplier agreements structured around stable specifications over multi-year terms. Their manufacturing processes are tooled and optimised for consistency. Shortened model cycles undermine every one of these economics. A platform that must be updated every three years rather than every seven cannot be amortised in the same way. Supplier relationships structured around seven-year stability cannot be renegotiated at three-year intervals without significant commercial disruption.

Over-the-Air Updates Change the Maintenance Relationship

The deployment of over-the-air software updates — standard in Tesla and Chinese EVs, now increasingly common in European luxury models — changes the post-sale economics of the vehicle in ways that ripple through the entire aftersales and dealer ecosystem. Features that were previously fixed at point of sale become updatable, sellable, and withdrawable. Diagnostics that previously required a dealer visit occur automatically. Performance improvements that previously required hardware upgrades can be delivered in software. For dealers, this reduces aftersales revenue. For OEMs, it creates new subscription revenue opportunities. For suppliers of physical service components, it accelerates volume decline in specific categories.

The Transition Burden on Suppliers

Tier-1 and tier-2 automotive suppliers face the most acute version of the technology adoption challenge. They must invest in new capabilities — electrification, software, connectivity — while continuing to supply legacy ICE systems to customers who continue to sell ICE vehicles. The capital requirements for this dual-track operation are substantial. Mordor Intelligence notes that automotive suppliers face a condition it describes as 'stagformation': stagnating revenue growth combined with the need for fundamental business model transformation, with pressure intensifying from Chinese competitors who face no equivalent legacy constraint. Access to capital, talent, and technology partnerships will determine which suppliers navigate this transition successfully.

12 The Communication Deficit: How Automotive B2B Lost Its Voice

There is a dimension of the automotive industry's structural challenge that rarely appears in market research reports or investor presentations — and yet it shapes the commercial effectiveness of virtually every B2B relationship in the sector. The automotive supplier communication landscape has been in a state of managed decline for fifteen years. What existed before 2009 was not perfect, but it was functional: a rich, differentiated media ecosystem in which specialist publications, technical conferences, and B2B advertising channels created genuine forums for informed exchange between manufacturers, suppliers, engineering professionals, and procurement decision-makers. What replaced it — or more precisely, what failed to replace it — is the source of a quiet but significant competitive problem.

The Pre-2009 Landscape

Before the 2008 financial crisis, the B2B automotive communication ecosystem operated at a scale and depth that it has not recovered. Specialist trade publications — covering powertrains, manufacturing engineering, materials, electronics, logistics, and aftersales — maintained editorial teams with genuine technical expertise and sustained advertiser bases willing to commit meaningful budgets to reach qualified audiences. Tier-1 and tier-2 suppliers invested in sustained brand and product communication campaigns, technical white papers, in-depth application case studies, and conference programmes that functioned as legitimate knowledge infrastructure for the industry. The communication between a supplier developing a new fuel injection system and the engineering teams that would specify or evaluate it had a language, a channel, and a budget behind it.

The logic was straightforward: automotive product development cycles were long, technical complexity was high, and purchasing decisions were made by informed engineers and procurement specialists who read their trade press, attended their specialist conferences, and evaluated suppliers partly on the basis of demonstrated technical authority in shared professional forums. Communication investment tracked market investment. When the industry grew, media budgets grew. The relationship between supplier visibility and supplier commercial opportunity was broadly understood.

The 2009 Collapse and What Followed

The 2008–2009 financial crisis triggered automotive supplier communication budgets as an early and easily quantifiable cost reduction target. Marketing and media budgets were cut first, often before engineering or headcount, because their connection to revenue was considered indirect and their elimination was immediately visible on the cost line. What was harder to see — and what was therefore not adequately weighed in those decisions — was the cumulative cost of reduced market visibility, diminished technical authority, and the progressive erosion of the relationships with editorial communities, conference platforms, and specialist audiences that took years to build and proved very difficult to reconstruct.

The specialist trade publications that served as the connective tissue of the B2B automotive ecosystem suffered in direct proportion. Some closed. Many reduced editorial frequency, shrunk their editorial teams, and replaced investigative technical journalism with content marketing and sponsored features. The shift from independent editorial authority to supplier-generated content reduced the trust value of those channels even as it reduced their cost. Conference programmes contracted. Attendee quality — meaning seniority and decision-making authority — declined as travel and registration budgets were cut. The forums in which supplier technical reputations were built and maintained became smaller, less well-funded, and less influential.

> *The budget cuts of 2009 were understood as temporary crisis management. Fifteen years later, they have become the permanent operating model for a majority of automotive B2B suppliers — in a market that has never been more technically complex or more competitively contested.*
>
> — IMP InterMediaPartners, 2025

The Dreamy Numbers Problem

The consumer-facing end of automotive communication has a different but equally serious problem: a systematic disconnect between the performance figures presented in brand communications and the reality that drivers experience. This is most visible in the area of range and consumption claims. EV range figures, fuel economy ratings, and performance specifications are tested under conditions — WLTP, EPA, or manufacturer-specified test cycles — that bear a carefully managed relationship to real-world driving. A driver navigating winter temperatures, motorway speeds, air conditioning, and hills will experience a materially different performance envelope from the headline figure in the brochure or the advertisement.

The automotive industry has known about this gap for decades. The Dieselgate scandal was its most extreme manifestation — systematic engineering of vehicles to perform differently under test conditions than under real-world operation — but the gap between advertised and real-world performance is a structural feature of automotive communication, not an exception. It is embedded in the language of glossy brochures, television commercials shot on empty mountain roads, and digital campaigns featuring heroic cinematography of vehicles performing at conditions no typical owner will ever experience. The audience for this communication has grown increasingly sceptical. Consumer trust in automotive brand claims — particularly around environmental performance and fuel economy — is measurably lower than it was before 2015.

This matters for B2B communication in two ways. First, the credibility deficit of automotive brands creates a secondary trust problem for the suppliers whose technology enables those brands' claims. If consumers distrust EV range claims, that distrust extends to the battery suppliers and charging technology providers whose systems underpin them. Second, the dreamy-numbers approach to performance communication has influenced how many suppliers communicate their own technical capabilities: in aspirational, visually produced terms that prioritise impression over evidence. The result is B2B communication that looks polished but says nothing technically specific — and is therefore useless to the engineers and procurement specialists who need to make informed evaluation decisions.

What Effective Automotive B2B Communication Looks Like

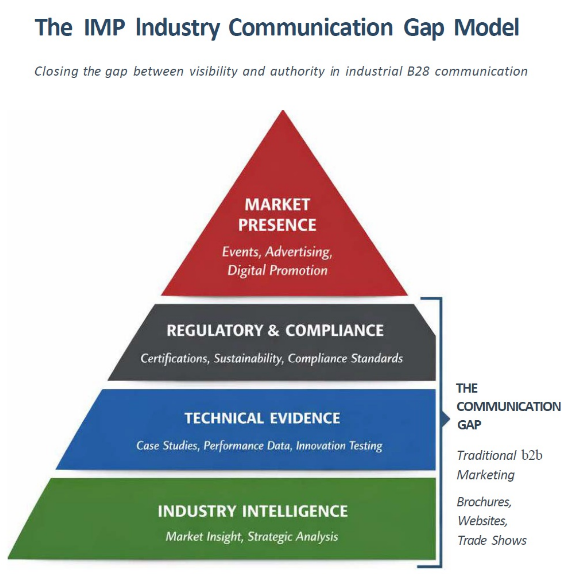
The opportunity is significant precisely because the current standard is low. A supplier that invests in technically rigorous, factually grounded, audience-specific B2B communication operates in a space of limited competition. The relevant model is not the automotive brand advertisement or the generic trade press insertion. It is the authoritative technical paper, the application case study with real operational data, the engineering comparison that demonstrates measurable advantages under specified conditions, the market intelligence briefing that helps a procurement director understand a technology landscape rather than simply promoting a product within it.

Effective B2B automotive communication in 2025 has five distinguishing characteristics. It is technically specific: it provides data, specifications, and performance parameters that are meaningful to an engineering audience, verified against real operating conditions rather than laboratory ideals. It is audience-segmented: the information needs of a powertrain development engineer differ from those of a procurement director, which differ from those of a C-suite executive evaluating strategic supplier relationships — and a single communication cannot serve all three with equal effectiveness. It is sustained: B2B purchasing decisions in automotive are made over months or years, and a supplier that communicates once at a trade fair and is then absent cannot build the recognition and credibility that consistent presence creates. It is independent of exhibition calendars: the trade fair is a single touch point within a 52-week communication year, not the organising principle around which all other activity is arranged. And it is measurable: modern content distribution platforms make it possible to know which target accounts have engaged with which content — data that should drive communication investment decisions rather than the assumptions that have guided them for too long.

The transition to electrification, the rise of Chinese competitors, the acceleration of AI integration, and the compression of product development cycles are all, simultaneously, arguments for rebuilding the B2B automotive communication investment that was dismantled after 2009. The market is more complex, more technically demanding, and more contested than at any previous point. The suppliers who will establish durable competitive positions in this environment will be those whose technical authority is visible, whose market intelligence is credible, and whose communication programme operates at the scale and consistency that the complexity of the moment demands.

Industrial B2B communication frequently begins with visibility — advertising, exhibitions, or digital promotion — without establishing the underlying credibility required for buyers to evaluate suppliers seriously.

The IMP Industry Communication Gap Model describes the four layers required for effective industrial communication: Industry Intelligence, Technical Evidence, Regulatory Transparency, and Market Presence. Companies operating only at the visibility layer struggle to build authority in increasingly complex markets.



Building credibility from the ground up

IMP | InterMediaPartners
INDUSTRY INTELLIGENCE | STRATEGY | MEDIA SOLUTIONS

12 Emerging Markets and the Infrastructure Gap

The assumption that EV adoption would remain confined to wealthy, infrastructure-rich markets has been definitively disproven. Vietnam, Thailand, Indonesia, Brazil, Colombia, and Costa Rica are all registering accelerating EV adoption, in several cases outpacing Western European markets by penetration rate. The mechanism is primarily Chinese: Chinese manufacturers, motivated by domestic market saturation and Western tariff barriers, have aggressively targeted emerging markets with affordable models, government incentive frameworks, and local manufacturing investments that make their vehicles politically welcome in host countries.

In 2024, over 85% of EVs sold in Brazil came from China. Electric car sales in Indonesia tripled in 2024 while the conventional market contracted by 20%. Chinese EV exports to Mexico grew by over 2,000% year-on-year in the final months of 2025. These are not niche penetrations — they represent the early establishment of market positions that compound with each passing year as charging networks, service infrastructure, consumer familiarity, and brand loyalty develop.

The Infrastructure Reality

Infrastructure remains the binding constraint in lower-income and less-developed markets. Reliable electricity grid coverage, public fast-charging networks, and technical service capability are prerequisites for EV adoption that cannot be assumed in markets where grid reliability is inconsistent, private home charging is impractical for the majority of the population, and EV service technician training has not yet scaled. In much of Sub-Saharan Africa, South Asia, and parts of Latin America and Southeast Asia, these conditions are not yet met — and will not be met on the timescale of the current EV transition in high-income markets.

This creates a bifurcated global automotive market. In cities with reliable electricity infrastructure — including megacities in China, Vietnam, Brazil, and Indonesia — EV adoption can and is proceeding rapidly, driven by cost advantages and policy incentives. In markets where grid reliability is the primary constraint, the transition will proceed through hybrid technology and extended-range EVs rather than pure battery electric vehicles. The assumption that the EV transition is a uniform global event is incorrect. It is a collection of national and city-level transitions proceeding at radically different speeds, with different enabling technologies, and with Chinese manufacturers best positioned to serve the full range.

For B2B equipment manufacturers and technology suppliers in the automotive sector, the emerging market opportunity requires differentiated product and go-to-market strategies. The technology requirements for EV manufacturing in Vietnam or Indonesia are not identical to those in Germany or South Korea. The infrastructure and service ecosystem is structurally different. The competitive dynamics — dominated by Chinese OEMs with established local relationships — are different. Winning in emerging automotive markets requires presence, adaptation, and investment decisions made now, not when the transition reaches maturity.

13 Outlook to 2030: Five Structural Predictions

Forecasting the automotive industry across a five-year horizon requires navigating genuine uncertainty: trade policy trajectories, technology breakthroughs in battery chemistry and autonomy, the pace of grid decarbonisation, and political developments in key markets are all material variables. Nevertheless, five structural directions are robust under virtually all plausible scenarios.

1. Chinese OEMs Will Be Global Tier-1 Players by 2030

BYD's overseas sales exceeded one million in 2025. With manufacturing on five continents, R&D centres across multiple regions, and model release speeds that incumbents cannot match, Chinese OEMs will hold meaningful market positions in virtually every automotive market globally by 2030 — not as budget imports but as mainstream competitors across all price tiers.

2. The Software Layer Will Define Competitive Position

The most profitable automotive companies in 2030 will be those that have successfully transitioned to software-defined vehicle platforms with recurring revenue from updates, subscriptions, and connected services. Those that remain primarily hardware manufacturers will face severe margin compression. The transition from transaction to relationship economics is already underway.

3. EV Penetration Will Exceed 40% of Global New Car Sales by 2030

Even accounting for US policy headwinds and infrastructure constraints in developing markets, the combination of Chinese market dominance, European regulatory mandates, and Southeast Asian acceleration will drive global EV penetration past 40% of new car sales by 2030. In China, penetration could exceed 70%. In Europe's leading markets, 50% is achievable.

4. Second-Life Batteries Will Become a Major Energy Storage Asset Class

The 330–350 GWh of second-life battery capacity projected for 2030 will be deployed across grid stabilisation, commercial storage, and residential solar integration. This market will attract energy utilities, real estate investors, and technology companies alongside the automotive OEMs who supply the batteries — creating a new cross-sector ecosystem with its own supply chain, regulation, and commercial infrastructure.

5. Urban Acoustic Environments Will Measurably Improve

Cities that achieve 40–60% EV penetration in urban traffic — Oslo, Amsterdam, and major Chinese cities are ahead of this curve already — will experience measurable reductions in peak traffic noise levels. The health benefits will become increasingly quantifiable and will drive policy pressure for low-emission and low-noise urban zones. Noise will become a public health priority alongside air quality, with EV penetration as the primary intervention mechanism.

14 Recommendations

The automotive transition presents different strategic imperatives for different participants in the value chain. The following recommendations are addressed to three audiences: automotive OEMs and tier-1 suppliers, B2B technology and equipment providers, and communication and market intelligence professionals serving the sector.

For Automotive OEMs and Tier-1 Suppliers

1. Accept that the product development cycle must compress. The competitive gap between a 20-month Chinese development cycle and a 40-month European one is not primarily a cultural or process difference — it is a supply chain integration difference. Reducing this gap requires vertical integration or deep long-term supplier partnerships in battery, software, and power electronics that eliminate the sourcing and validation delays embedded in traditional OEM–supplier relationships.

2. Establish a second-life battery programme now, before retirement volumes create pressure to do it reactively. OEMs who retain ownership of battery packs through lease or subscription models will capture second-life revenue, generate battery performance data that improves future designs, and meet the EU Battery Regulation's extended producer responsibility requirements from a position of strategic advantage rather than compliance obligation.

3. Map your tier-2 and tier-3 supply chain for Chinese competitive exposure. The risk is not only at the OEM level. Chinese equipment and component manufacturers are entering supplier relationships with European and American OEMs through competitive pricing. Understanding where this exposure exists — and making deliberate decisions about it — is more strategic than learning about it reactively through supplier insolvencies or competitive displacement.

For B2B Technology and Equipment Providers

1. Prioritise AI-enabled manufacturing solutions over incremental process improvements. The automotive sector's capital allocation is shifting decisively toward AI, software, and digital manufacturing capability. Equipment providers that can demonstrate AI integration — digital twin compatibility, predictive maintenance outputs, quality vision systems, energy optimisation — will command premium positioning over those offering mechanically equivalent but digitally passive alternatives.

2. Build product and service positioning for the EV-specific manufacturing context. Battery dry rooms, thermal management systems, EV-specific assembly tooling, battery testing equipment, and second-life battery sorting and grading systems are all growing categories with different technical requirements from their ICE equivalents. Suppliers who develop specific EV manufacturing expertise will be positioned for the growth trajectory, those serving only ICE manufacturing are in secular decline.

3. Establish market presence in emerging manufacturing geographies — specifically Hungary, Thailand, Indonesia, Brazil, and Mexico — where Chinese OEM investment is creating new greenfield manufacturing clusters. These facilities will require equipment, systems, and service support. and they will be sourced from established relationships if those relationships exist at point of investment decision.

4. Invest in second-life battery ecosystem positioning. The 65% CAGR in the second-life battery market is creating demand for battery testing, grading, battery management systems, and stationary storage system integration — all areas where automotive technology knowledge provides a competitive advantage. Suppliers who bridge automotive and energy storage will access two high-growth markets simultaneously.

For Communication and Market Intelligence Professionals Serving Automotive

1. Reframe the EV narrative from 'transition' to 'arrived.' The framing of electrification as a future event — something happening gradually, with a distant endpoint — is no longer accurate and is misleading to audiences who make investment and procurement decisions based on it. In China, EVs are the majority of new car sales. In the UK, one in three new cars is electric. The communication challenge is not to prepare audiences for a transition; it is to help them navigate a market that has already fundamentally changed.

2. Build targeted content for the supply chain bifurcation. The automotive supplier community is experiencing a structural split between ICE-dependent businesses facing decline and electrification-exposed businesses facing growth. These audiences have radically different information needs, investment priorities, and communication receptivities. Generic automotive industry content serves neither well. Audience segmentation by powertrain exposure is a necessary prerequisite for effective B2B communication in this sector.

3. Use the urban quality-of-life story. The environmental and public health case for electrification is primarily communicated through carbon emissions data — which is abstract, contested, and politically charged. The noise reduction case is immediate, experiential, and broadly appealing across political lines. A city where you can hear birdsong at a pavement café, where bedroom windows can be open at night, where school children can concentrate without traffic noise — this is a communicable vision that transcends the technical and the political. It should be used deliberately and consistently.

4. Track Chinese competitive intelligence as a primary editorial priority. The speed of Chinese EV development — 91 new models released globally in a 12-month period, model cycles half the Western standard, export volumes growing over 87% year-on-year — is the single most important competitive story in the global automotive industry. B2B audiences serving the sector require systematic, unspun intelligence about Chinese manufacturer capabilities, market positions, and strategic intentions. This is where the competitive landscape is being redrawn.

Key Sources · Mordor Intelligence, Global Automotive Market Report (2025) · Future Market Insights, Automotive Market (2025) · Grand View Research, Electric Vehicle Market (2025) · MarketsandMarkets, Electric Vehicle Market (2025) · IEA, Global EV Outlook 2025 · Ember Energy, The EV Leapfrog (2025) · Benchmark Minerals, Global EV Sales 2025 (2026) · Rest of World, Chinese EV Global Expansion (2025) · S&P; Global Mobility, Automotive Forecast (2025) · ICCT, Life-cycle GHG Emissions, EU Passenger Cars (2025) · PLOS Climate, Sadavarte et al., BEV vs ICE Lifecycle (2025) · MarketsandMarkets, Second Life EV Battery Market (2025) · Precedence Research, Second Life EV Battery Market (2025) · IBM Institute for Business Value, AI in Automotive (2025) · Battery Technology, Trump EV Policy Review (2026) · Brookings Institution, US Tariffs and North American Auto Manufacturing (2025) · Transport & Environment, Urban EV Noise Research · ScienceDirect, EV Urban Noise Impact Studies (2023–2025) · CNBC / Wall Street Journal, US Auto Tariff Impacts (2025) · InsideEVs, Chinese EV Export Data (2025–2026) · Volkswagen Group, AI in Automotive (2025)

About IMP InterMediaPartners

IMP InterMediaPartners GmbH specialises in B2B marketing and content strategy for complex industrial and technology markets — including automotive, petfood and pet care, pharmaceutical manufacturing, packaging, chemical R&D, and laboratory technology.

We help organisations translate technical expertise into market authority through structured demand architecture, knowledge-transfer content, and precision media deployment. This white paper is part of the IMP Industry Intelligence Series.

www.intermediapartners.de