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Shaping the GCC mobility landscape – electric, connected and autonomous

Contents

01

Electric, connected and autonomous vehicles are transforming mobility around the world

Cities are struggling with mobility systems that can no longer meet modern expectations. Emissions remain high, congestion is worsening and existing networks are not delivering the efficiency, reliability or equity demanded today. Electrification has begun to relieve some of this pressure, but it cannot by itself resolve the structural weaknesses built into current transport models – particularly those related to how vehicles are operated, managed and integrated into the wider mobility system.

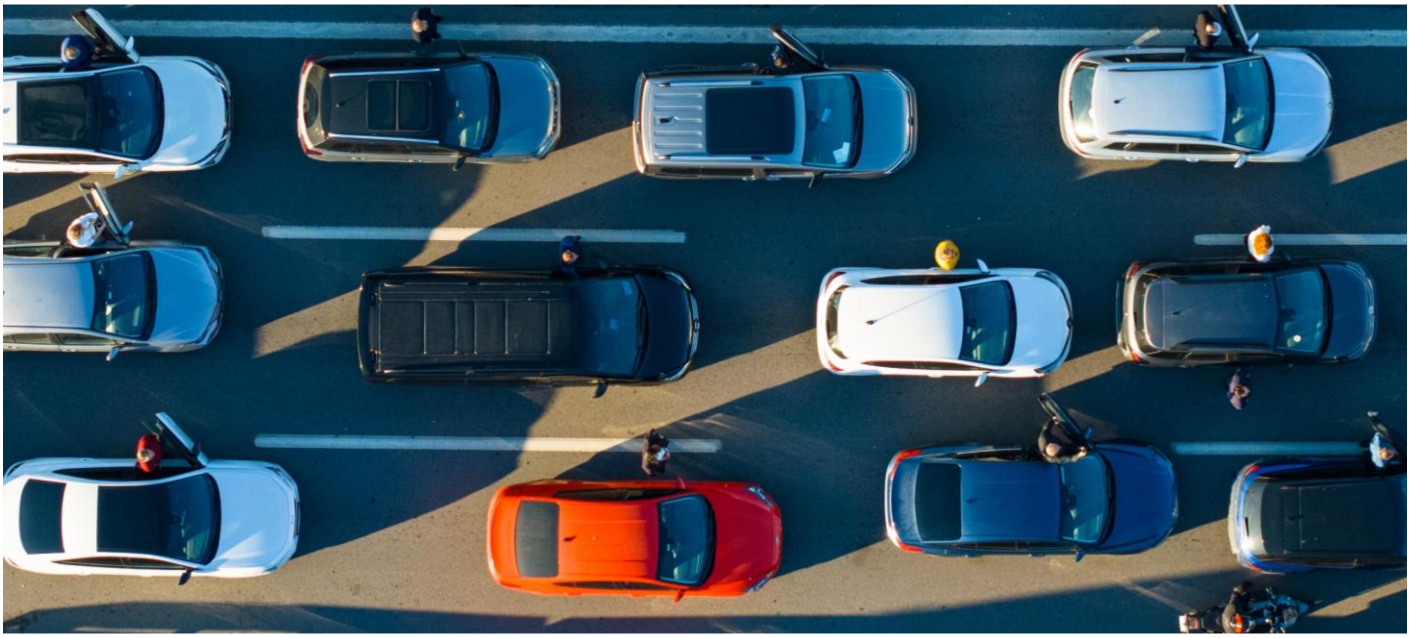
A more profound shift is emerging with the rise of autonomous, connected and electric mobility, where autonomous vehicles (AVs) represent the structural change that redefines system performance rather than merely improving vehicle technology. Autonomous technologies redefine how vehicles sense, decide and move, enabling safer operations, more consistent performance and more efficient use of road space. When paired with electric drivetrains and digital platforms, autonomous vehicles can reduce emissions, ease congestion and support cleaner, quieter and more resilient cities.[1]

The GCC advantage
This value proposition is particularly relevant for GCC countries, where rapid urban growth, high car dependency and strong public-sector leadership create favourable conditions for system-level deployment.

The region is uniquely positioned to lead the global deployment of electric and autonomous mobility, combining strong policy intent with the ability to execute at scale. Significant progress on electrification, particularly in public transport, has established the charging infrastructure, and regulatory foundations needed for autonomous deployment. At the same time, governments are moving beyond pilots toward system-wide integration, supported by clear targets, dedicated policies and investment in digital infrastructure. The GCC offers an environment where autonomous, fleet-based mobility can be deployed safely, efficiently, and at scale, delivering meaningful gains in road safety, congestion reduction, air quality, and long-term economic resilience.

Role of public transport
Public transport plays an important role in this transition, not as the primary focus but as an early proving ground. Buses, shuttles and taxis operate intensively and predictably, making them strong candidates for early autonomous deployment alongside electrification. Transitioning these fleets toward autonomous operation demonstrates what AVs can deliver at scale – more reliable service, lower operating costs and better passenger experience – while building public trust and accelerating wider adoption across private and commercial segments.

Sharing synergies
Electric and autonomous vehicle technologies offer strong synergies. Fully autonomous vehicles are typically fully electric, and many EVs now include automated-driving features. Together, these technologies can help solve many challenges in today's road-transport systems.



0	1	2	3	4	5
Driver only	Assisted driving	Partially automated driving	Automated driving	Autonomous driving in specific conditions	Autonomous driving in all conditions
Driver always handles all driving operations.	System controls steering or speed. Driver remains hands-on and eyes-on.	System controls steering and speed. Driver remains eyes-on and ready to take full control.	System drives under pre-defined conditions: • Traffic jam • Parking Driver ready to take control within 10s.	System drives under pre-defined conditions: • Highway • Urban When system drives, driver not required to take control.	System drives under all conditions. Driver never required to take control.

Figure 1: Levels of vehicle automation[2]

Connected and automated vehicle functions (Levels 1-3) are already common in passenger cars (see Figure 2), improving safety and comfort. Higher-level autonomous technology (Levels 4-5) offers broader societal benefits: enabling new mobility services, improving accessibility and public-transport availability, supporting modal shift, and enhancing overall transport efficiency while reducing greenhouse gas (GHG) emissions – benefits that emerge only when autonomy is deployed at scale within a supportive system context.

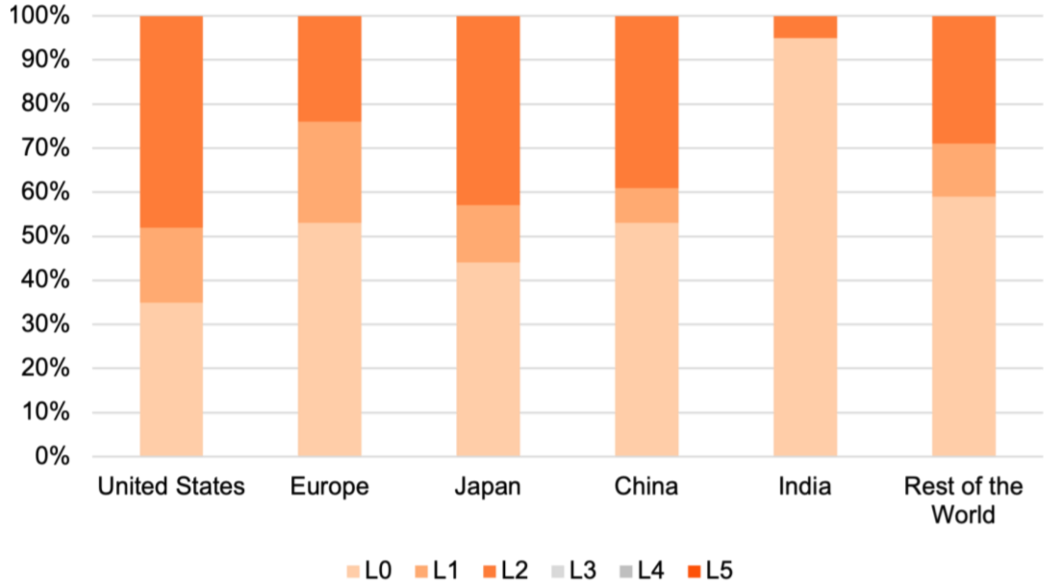


Figure 2: New car sales shares by vehicle automation level for main markets worldwide in 2023[3]

Electric, connected and autonomous vehicles are becoming core innovations in the automotive sector, with both established and new players competing to lead. Beyond societal benefits, countries that gain an edge in these technologies can strengthen industrial competitiveness, create jobs, and drive economic growth.

These technologies enable multiple use cases, but this report focuses on taxi passenger cars as a case study – an early market for autonomous EVs. In public transport, key vehicle types include pods, robotaxis, and roboshuttles (see Figure 3). Their high utilisation makes electric and autonomous models – with higher upfront cost but lower operating cost – more attractive than human-driven Internal Combustion Engine (ICE) vehicles.

Government policies have been central to the development and rollout of electric and autonomous vehicles. Targeted measures have supported research and deployment, while broader policies have created favourable market conditions. Although EVs and AVs are expected to grow rapidly, uncertainties remain around future costs, technology progress, infrastructure, user acceptance and ecosystem readiness. Continued policy support is therefore essential to achieving societal goals.

Electric, connected, and autonomous vehicles are reshaping road transport, making it cleaner, safer and more efficient. Strong policy support has enabled their development, and continued well-designed policies are needed to ensure they deliver full societal benefits.

1.1

Case study: What China shows about scaling autonomous mobility

China is the world's largest EV market and manufacturing hub, selling nearly 13m EVs in 2024 – over 40% of domestic auto sales.[4] Supporting this scale, China has built the largest charging network globally, with almost 13m.[5] In parallel, China is rapidly advancing in autonomous mobility, led by companies such as Baidu Apollo, Pony.ai, and WeRide.[6]

China's autonomous-vehicle expansion is rooted in its supply-side industrial policy. Government-led investment in core technologies, such as AI chips, lidar, software stacks, and digital infrastructure, combined with vertically integrated manufacturers, has enabled fast iteration and large-scale pilots. Although demand incentives play a role, it is this coordinated supply-driven approach that has allowed China to scale AV capabilities more quickly than other markets.

This presents opportunities for cost-competitive AV pilot programs, but also raises questions around standards, after-sales networks and long-term sustainability.

02

The GCC is embracing electric and autonomous vehicle technologies

Electric and autonomous mobility as a national priority
The GCC has moved beyond setting direction on electric and autonomous mobility and is now entering a phase where questions of readiness, execution and scale shape outcomes. Across the region, mobility transformation is now a central delivery mechanism for national sustainability and economic diversification agendas.

Electric and autonomous vehicles support these priorities, but ambition alone is no longer sufficient. The central issue is whether policy frameworks, infrastructure, operating models and institutions are sufficiently mature to support autonomous mobility at scale.

Electrification as a necessary but insufficient foundation
Electrification provides an important foundation for this transition. Transport remains a major source of emissions across the GCC[7]. Electrification of vehicle fleets – particularly in public transport – is therefore a critical enabling step, both to reduce emissions and to establish the vehicle platforms, charging infrastructure and regulatory capability on which autonomous deployment depends. However, electrification on its own does not create the operational, governance and service design conditions required for autonomous mobility to scale.

Current momentum across GCC markets
Progress on electrification and early automation is uneven but accelerating across the region. Saudi Arabia, the UAE and Qatar have all set EV adoption targets and launched autonomous vehicle trials supported by dedicated policies and incentives. Dubai's Autonomous Transportation Strategy aims for 25% of all trips to be driverless by 2030,[8] signalling a clear commitment to system-wide integration rather than isolated pilots. Qatar has electrified approximately 73% of its public bus fleet as of 2024 and is targeting full electrification by 2030, alongside a goal for EVs to account for 10% of new passenger car sales by 2030.[9] These initiatives have positioned the GCC EV market for rapid growth over the coming decade (see Figure 4), providing the vehicle platforms and delivery experience that can support autonomous fleet deployment.

Environmental sustainability, social development, and economic diversification are central to GCC national visions. Consequently, the GCC EV market is expected to grow rapidly over the next decade (Figure 4), while the AV market is progressing swiftly from pilot phases toward full deployment.

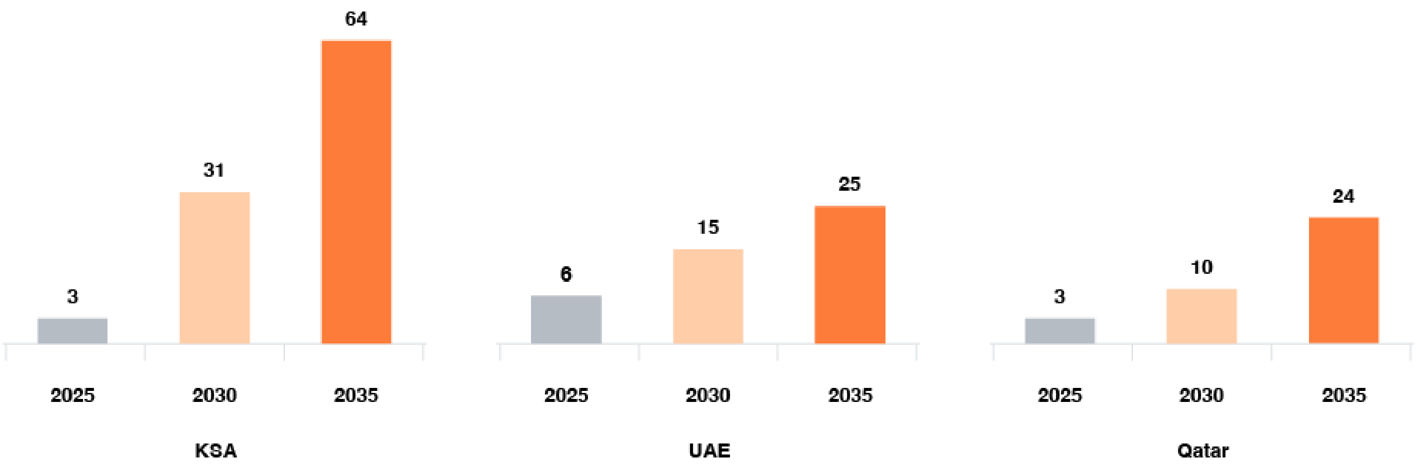


Figure 4: Projected market share of EVs in Saudi Arabia, UAE and Qatar to 2035[10]

Autonomous services matter for GCC transport outcomes
With more than 90% of the GCC population expected to live in urban areas by 2035,[11] transport demand will be increasingly concentrated in dense metropolitan environments. This reinforces the case for prioritising high utilisation, fleet-based autonomous services, such as buses, taxis and shuttles, which are best suited to dense urban settings and can deliver benefits more quickly than private passenger vehicles in the near term.

However, readiness for autonomous mobility cannot be inferred from EV uptake alone. Autonomy introduces additional requirements, including clear governance arrangements, defined operating domains, safety and liability frameworks, digital infrastructure, data governance and new procurement and operating models for public transport services. Across several GCC markets, pilots are proving technical feasibility, but remain insufficiently connected to network planning, fleet renewal and service design.

The potential benefits of autonomous deployment depend less on vehicle technology and more on deployment design, safety assurance and integration with wider mobility networks. Road safety remains a critical concern, with human error estimated to account for close to 90% of traffic accidents.[12] Autonomous systems offer the potential to reduce this risk by removing dependence on human behaviour, although realising these gains requires strong safety validation and regulatory oversight.

Congestion continues to impose material productivity costs, with commuters in cities such as Riyadh losing more than 50 hours per year in traffic,[13] and traffic volumes rising steadily in hubs such as Dubai. Autonomous fleet operations, when integrated with traffic management systems and deployed at scale, can improve traffic flow and reduce time lost in transit.

Electrification further supports urban air quality and public health objectives by eliminating tailpipe emissions, while high EV uptake remains central to national net-zero strategies.[14] By 2050, sustained electrification could reduce Saudi Arabia's transport-related oil demand by more than 20% and cut transport energy use in the UAE by around 40%.[15]

Readiness as a system condition
Yet these outcomes are not automatic. They depend on execution – clear choices on priority use cases, governance and funding and integration with existing public transport networks alongside measurable service, safety and performance standards.

In this context, autonomous vehicle readiness in the GCC should be understood as a system condition rather than a technology milestone. It reflects the alignment of policy, regulation, infrastructure, institutional capacity and market design needed to support sustained deployment at scale.

The following sections assess how far GCC countries have progressed across these dimensions, where gaps remain and what is required to translate momentum into sustained autonomous mobility outcomes. The country case studies illustrate three distinct readiness pathways: infrastructure-led (Qatar), platform-led (UAE) and market-led (Saudi Arabia).

Global megatrends driving EV and AV adoption

01 Breakthrough technologies

Autonomous driving as a game changer in transportation
- First use case scaling up in 2025
- Labour shortage in public transport (e.g., Germany will have a shortage of 87,000 drivers by 2030)
- Possible cost benefits after successful scaling-up

02 Climate change

Transport accounts for 24% of global CO_2 emissions – road (passenger) transport for 10.8%
- Change to "green", sustainable and efficient transportation can help in reducing this impact

03 Road safety awareness

1.3m people globally die in road traffic crashes each year
- Studies found the human driver to be the critical reason in ~90% of crashes
- It is hoped that removal of the human factor will reduce road deaths

04 Longevity and lifespan changes

Autonomous driving is a game changer in transportation
- Sharing economy gaining importance
- Growing demand for alternative car ownership models
- Growing demand for assisted mobility services

05 Rapid urbanisation

60% of global population will live in urban areas by 2030 – 68% by 2050 – which will lead to rapid growth of urban transport volumes
- Cities desperate for more efficient traffic solutions through innovation and regulation

Figure 5: Global megatrends driving EV and AV adoption[16]

As shown in Figure 4, high EV and AV adoption can help GCC countries address several pressing challenges:

Improving urban air quality: Road transport is a key source of urban pollution in the GCC, where transport emissions contribute significantly to local air quality problems. Shifting to EVs offers a pathway to cleaner air and better public health outcomes.

Reducing GHG emissions: EV adoption is central to national net-zero plans. By 2050, high EV uptake could cut Saudi Arabia's transport-related oil demand by over 20% and reduce the UAE's transport energy use by 40%.[17]

Improving road safety: Around 90% of road accidents are caused by human error,[18,19] meaning autonomous vehicles could significantly reduce collisions, injuries and fatalities by removing this risk factor.

Enhancing mobility and productivity: Traffic congestion significantly reduces economic efficiency in major hubs like Riyadh, where commuters lose ~52 hours per year in traffic and Dubai, where congestion is widespread with millions of vehicles on the road. Smart mobility and autonomous vehicle systems can improve traffic flow and cut time lost in transit.[20]

2.1

Qatar – building autonomous readiness through public transport

Qatar has rapidly positioned itself as a regional leader in electrified public transit, leveraging compact urban geography, high-quality infrastructure and strategic policy support to make EVs and autonomous mobility viable at scale. As of Q2 2025, the country operates 787 electric public buses, or about 74% of the public bus fleet, with a target of full electrification by 2030 under the Ministry of Transport's[21] Electric Bus Transition Plan. The 2025 PwC eMobility: Qatar Edition[22] report projects battery-electric vehicles (BEVs) to reach roughly 14.4% and plug-in hybrids around 9.6% of new car sales by 2035, reflecting growing private EV interest despite limited direct incentives. This expanding electric-mobility foundation, along with well-planned urban layouts and strong digital infrastructure, makes Qatar an ideal testbed for AV technologies, especially for shuttle, bus, and controlled-environment transport use cases.

On the autonomous-mobility front, Qatar is in early yet deliberate pilot phases. In January 2022, MoT, in cooperation with Mowasalat (Karwa) and Qatar Foundation, ran a Level 4 autonomous-minibus trial on a 3.2 km route inside Education City[23] — a controlled, campus-environment test that used lidar, radar and cameras, and operated with a safety operator onboard. In early 2024, Karwa[24] partnered with Yutong to test a full-size autonomous electric bus at the Lusail bus depot under MoT supervision. These pilots helped shape a five-year national roadmap, formalised in 2023–2024 under the newly published Autonomous Vehicle Strategy[25] in Qatar, which defines the framework for testing, licensing, operating and scaling AVs for public transit. While the number of AVs currently deployed remains small (the country's operational fleet is still limited to a handful of robotaxis), this structured rollout, anchored in EV success, regulatory clarity, and strategic planning, provides a credible foundation for scaling to meaningful AV-integrated public transport or smart-mobility services by 2030.

2.2

UAE – moving from pilots to commercial autonomous services

The UAE has established itself as the GCC's most advanced market for both electric and autonomous mobility, with Dubai leading large-scale deployment. The Dubai Autonomous Transportation Strategy, which targets 25% autonomous trips by 2030, sets the direction for AV integration across transport and logistics.[26]

To accelerate deployment, Dubai's Roads and Transport Authority (RTA) has issued autonomous vehicle testing permits[27] to global players including Baidu Apollo, WeRide, and Pony.ai, formally enabling on-road AV trials. Similarly, the Abu Dhabi Autonomous Transport Strategy targets 25% autonomous trips by 2030 and sets the direction for AV integration across transport systems. Abu Dhabi has already begun full commercial AV operations; Uber[28] and WeRide now run driverless robotaxis without safety drivers, marking Uber's first such deployment outside the US. All Autonomous Vehicle services are managed through AViTOMS,[29] a centralised digital platform developed by Shenzhen Urban Transport Planning Center (SUTPC) in collaboration with ITC (Integrated Transport Centre), under which around 69 AVs are being currently.

Electrification underpins this AV push. The UAE National Electric Vehicles Policy targets ~50% EV share by 2050[30] supported by unified standards and deployment frameworks.[31] PwC's eMobility Outlook 2024: UAE Edition identifies the UAE as the leading EV market in the GCC, with charging demand expected to surge significantly this decade. Together, these policies, infrastructure investments and partnerships with Apollo, WeRide, Pony.ai, and Uber position Dubai as a credible, scalable testbed for autonomous mobility, where AV deployment is tied directly to economic productivity, logistics efficiency and sustainability goals rather than isolated pilots.[32]

2.3

Saudi Arabia – scaling autonomous mobility at market level

Saudi Arabia is emerging as a major frontier for electric and autonomous mobility, not only due to its scale – the Kingdom remains the GCC's largest vehicle market – but increasingly because of a deliberate strategic push under Saudi Vision 2030 and the National Transport and Logistics Strategy (NTLS) to transform transport infrastructure. The Transport General Authority (TGA)[33] signed a landmark strategic agreement with Uber in 2025 to launch autonomous-vehicle services powered by AV technology providers, signalling AV adoption as a pillar of Saudi's smart mobility ambitions. In Riyadh, the first publicly available AV rides began in late 2025, where riders can select a WeRide "Robotaxi GXR" via the Uber app on routes such as Roshn Front to Princess Noura University.[34] Meanwhile, deployments (or planned trials) extend beyond Riyadh,[35] but companies such as WeRide[36] are working on autonomous minibuses, logistics shuttles or robobus/robovan services in locations including tourism-oriented areas like AlUla.

On the industrial side, Saudi-backed Lucid[37] is leveraging its strong relationship with NVIDIA to bring Level 4 autonomous EVs to market, a convergence of EV manufacturing and AV technology that could localise future mobility supply chains in the Kingdom. The arrangement underlines how Saudi capital and global tech partnerships can seed domestic AV capacity. At the same time, the initial public-sector rollout under TGA, Uber and WeRide, though still limited to a few dozen vehicles operating under supervised trial conditions, establish critical regulatory, operational and public-acceptance foundations. As the pilot fleet scales and as manufacturing players like Lucid begin producing AV-capable EVs in the region, Saudi Arabia could realistically move toward a double-digit autonomous share of public transport and freight fleets by 2030, especially given the Kingdom's massive vehicle base and Vision 2030 alignment.

03

AV cost opportunities

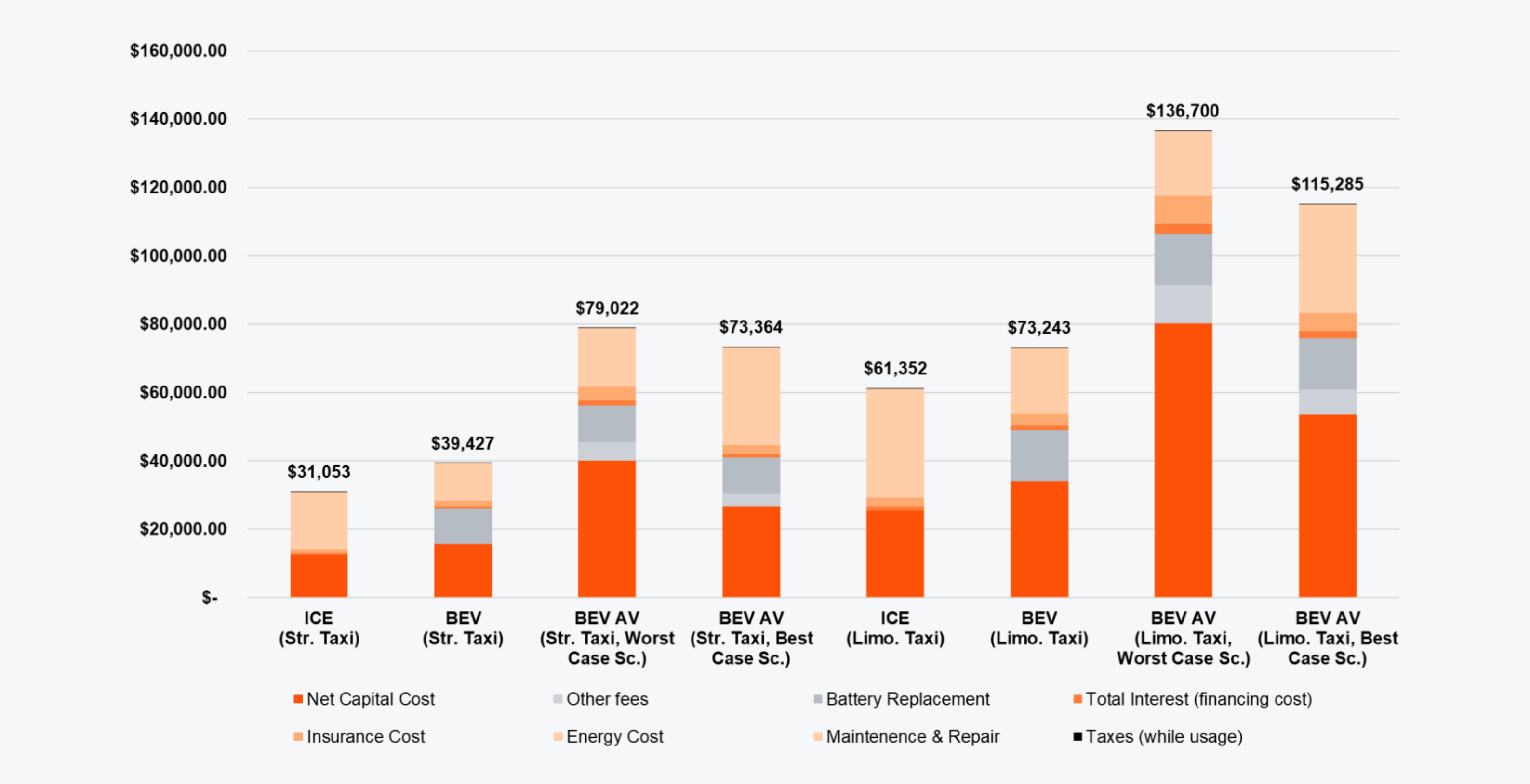


Figure 6: Total cost of ownership (TCO) analysis of electric robotaxis and comparison with conventional internal combustion engine (ICE) and electric taxis. The analysis considers two taxi segments – standard and limousine – and is based on current market prices in Qatar.[38,39,40,41,42,43]

The TCO analysis, illustrated in Figure 6, reflects today's economic conditions, under which ICEVs continue to deliver the lowest across both standard taxi and limousine segments. ICEVs outperform BEVs and BEV AVs, largely due to lower acquisition costs and the absence of battery-related replacement expenditure.

At present, BEVs carry higher upfront capital costs driven by the price of battery packs and the relative immaturity of electric vehicle supply chains. However, these cost dynamics are expected to shift meaningfully over time. Global battery prices are projected to continue to decline, supported by scale, improved chemistries, and manufacturing efficiencies. Likewise, today's capital costs of autonomous systems vary substantially across manufacturers, reflecting the early stage of development of the technology, however they are expected to decrease sharply in future as adoption broadens, narrowing the current TCO gap between BEV AVs and other vehicle types.

Only AV configurations incur a purchase tax due to their specialised customisation, while standard ICE and BEV models bought from dealers are tax-free, giving them a capital cost advantage.

Operationally, BEVs benefit from materially lower energy costs, with electricity expenses significantly below traditional fuel costs, particularly important for high-utilisation use cases such as taxis. This advantage is partly offset by higher insurance premiums for BEVs and especially for AVs, reflecting their elevated asset values and the sophistication of associated technologies.

Maintenance profiles vary across vehicle types. BEVs generally exhibit lower routine maintenance needs compared to ICEVs due to simpler drivetrains and fewer moving components. In contrast, BEV AVs incur higher maintenance costs linked to autonomous hardware calibration and advanced system upkeep.

Finally, limousine models consistently show higher TCO levels than standard taxis due to premium specifications, larger platforms, and higher associated operating costs.

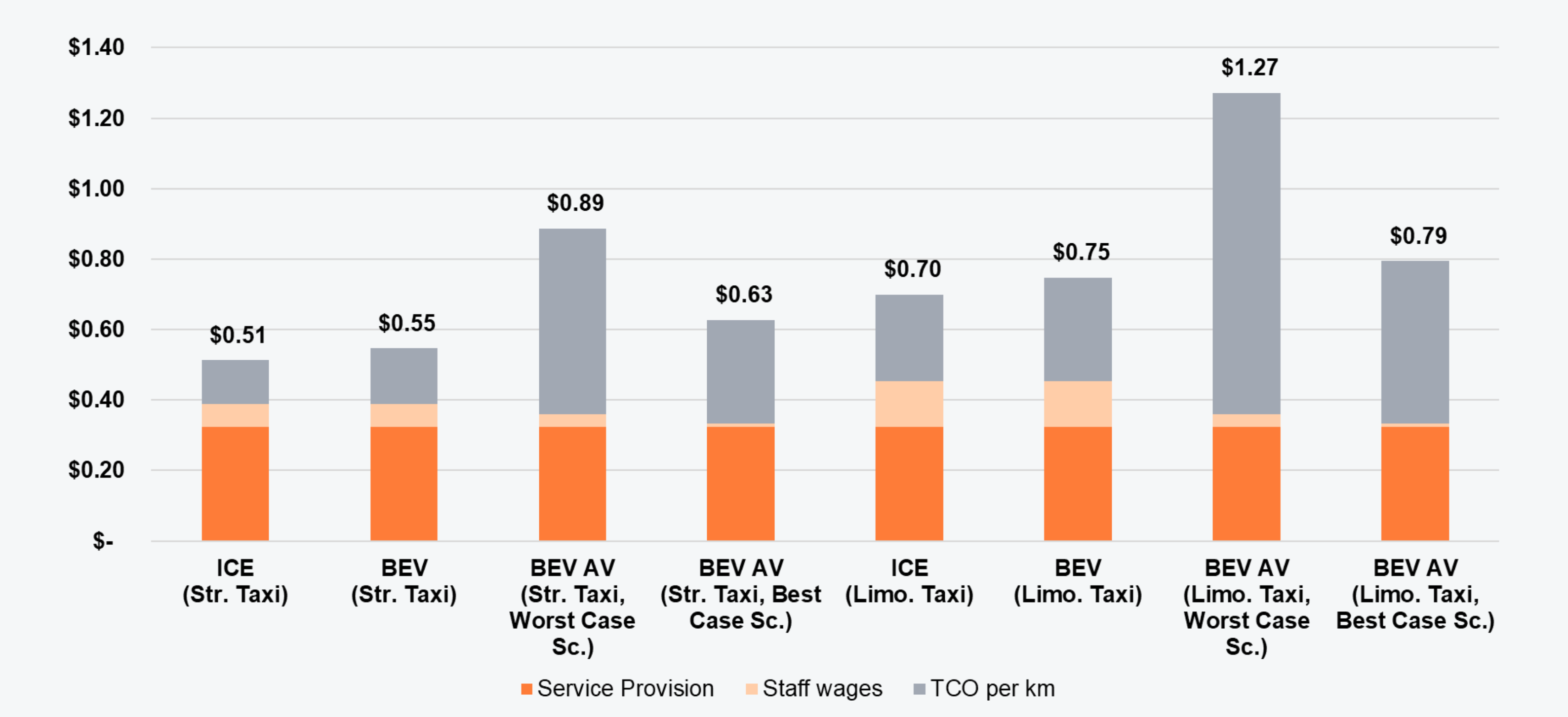


Figure 7: Cost per km analysis of electric robotaxis and comparison with conventional internal combustion engine and electric taxis

While the TCO is a key metric for comparing AVs, BEVs, and ICEVs, it does not fully capture the overall cost of operation, which also depends on service provision costs and staff wages on a per-kilometre basis. Figure 7 presents the cost per km analysis of electric robotaxis, compared with ICE taxis and electric taxis. The analysis considers two taxi segments – standard and limousine – and is based on current market prices in Qatar.

When analysing cost per km of robotaxi operation, service provision costs remain constant across all technology platforms and scenarios, so differences are driven mainly by energy, maintenance, staffing and capital costs. Under standard operating conditions, BEVs achieve a slightly lower cost per km than ICE vehicles, reflecting materially lower energy and maintenance expenses.

Autonomous BEVs show a wide performance range. In the best-case scenario, BEV AVs deliver cost per km levels close to those of ICEVs. In contrast, the worst-case scenario results in more than a 40% increase in cost per km, driven by higher vehicle prices and significantly lower annual mileage assumptions (75,000 km vs. 125,000 km). Staffing models also vary by vehicle type: ICE and BEV taxis require one dedicated driver, while AV-enabled vehicles can operate with fewer support staff per vehicle, reducing labour costs. However, these savings are outweighed by the high capex and ongoing calibration needs of AV hardware and software.

Across both automation levels and fuel types, limousine models consistently deliver higher cost per km than standard taxis, driven by higher base vehicle prices, elevated insurance premiums, and higher wage expectations.

Annual mileage is a major cost driver: lower utilisation (75,000km instead of 125,000km) substantially increases cost per km because fixed costs are spread over fewer kilometres.

Overall, BEVs remain structurally cost-competitive, with potential for future continued cost reductions. Robotaxis are expected to enjoy very significant capital and operating cost declines, which can give them an edge over conventional taxis in the medium-term.

04

The journey for the GCC is still long and challenges lie ahead

Despite strong momentum, the GCC's transition to electric and autonomous mobility remains at an early stage. Case studies from the UAE, Saudi Arabia, and Qatar demonstrate genuine progress, from EV incentives and charging rollouts to AV pilots in controlled environments. However, significant structural gaps continue to limit the region's ability to fully realise the societal, economic, and environmental benefits of these technologies.

01

Ambition is not yet consistently translated into outcomes.
Many national strategies set bold EV and AV targets, but often without explicitly linking them to measurable societal outcomes such as reductions in road fatalities, congestion, emissions, or public transport operating costs. Similarly, few policies clearly articulate the total cost of delivery or the expected return on public investment. This weakens prioritisation, complicates cross-agency alignment, and makes it harder to sustain political and public support over time.

02

Private passenger EV adoption remains structurally constrained.
Across most GCC markets, the passenger-car segment faces persistent barriers: low fuel prices, minimal internal combustion engine taxation, higher upfront EV costs, limited consumer awareness, uneven charging coverage, and restricted model availability. These factors reduce the economic case for mass-market EV adoption in the short term. As a result, progress will require coordinated demand- and supply-side interventions, including targeted incentives, fleet mandates, charging standards, and OEM engagement. In the near term, public transport, government fleets, and commercial vehicles offer far more viable and impactful entry points than private ownership alone.

03

Autonomy efforts remain fragmented and pilot-led.
While AV trials are underway in parts of the UAE, Saudi Arabia, and Qatar, many remain disconnected from broader electrification, public transport, and urban development strategies. Autonomous mobility is often treated as a standalone innovation rather than as an integral component of future transport systems. Without tighter integration, particularly linking AVs with EV infrastructure, mass transit networks and smart city platforms, pilots risk remaining experimental rather than scalable.

04

Value-chain capture remains limited.
The absence of a mature domestic automotive manufacturing base constrains the GCC's ability to capture economic value beyond deployment and operations. Without deliberate industrial and innovation policies, much of the value from EVs and AVs, i.e. software, systems integration, data, and advanced components, will continue to accrue offshore. To address this, governments must move beyond adoption and actively cultivate local capabilities across software development, fleet operations, charging infrastructure, maintenance, data services, and mobility platforms.

05

Governance and coordination remain critical bottlenecks.
Successful EV and AV deployment depends on strong cross-government coordination spanning transport, energy, digital, urban planning, finance, and public safety authorities. In several markets, roles and decision rights remain fragmented, slowing implementation and increasing regulatory uncertainty. Clearer ownership models, empowered lead agencies and consistent national standards will be essential.

While the direction of travel is clear, the GCC's ability to translate momentum into lasting impact will depend on shifting from vision-led strategies to execution-driven systems. The next phase requires sharper policy design, stronger institutional coordination and deliberate focus on scalable use cases, particularly in public and shared mobility, where electrification and autonomy can deliver tangible benefits at speed and at scale.

05

Making autonomous mobility work at scale in the GCC

The GCC stands at a pivotal inflection point in the evolution of mobility. As private electric vehicle adoption accelerates across the region, governments – particularly in Saudi Arabia and the UAE – are advancing nationally led visions for autonomous mobility. In the near to medium term, the greatest and fastest value from autonomy lies not in privately owned vehicles, but in public and shared transport, especially buses, robo-taxis, and last-mile services. These use-cases offer scale, regulatory controllability, and immediate societal impact.

To fully unlock the benefits of autonomous vehicles, the GCC must move beyond technology pilots toward system-level transformation. This requires policy and investment choices anchored in clear societal objectives – safer roads, more inclusive mobility, improved urban productivity and long-term economic diversification – rather than technology adoption alone. Autonomous mobility should be treated not as a transport upgrade, but as a strategic national capability.

Below are the imperatives that will enable transition and adoption of autonomous mobility technologies.

1

Define clear societal objectives.

Autonomous and electric mobility should target national priorities of lower emissions, economic diversification, safer roads, less congestion, better access, and higher efficiency ensuring programmes support broader goals like sustainability and urban liveability.

2

Establish a GCC-specific governance and policy framework.

A unified framework should cover problem definition, stakeholder mapping, safety assessment, pilot design, regulatory sandboxes, and scaling strategy to ensure coherent, evidence-based regulation and regional alignment.

3

Prioritise high-impact public fleets.

Automation of electric private passenger cars is a long-term goal that can be expedited by a strong initial focus on buses, shuttles and taxis – high-use, controlled fleets with pre-defined operational domains and strong public visibility – serving as testbeds before private AV expansion.

4

Build early and sustained stakeholder alignment.

Effective deployment requires coordination across transport authorities, municipalities, telecoms, utilities, insurers, and tech providers, enabling effective supply-side and demand-side policy to support vehicle rollout and capture value from it and joint planning on data, connectivity and liability to enable vehicle automation.

5

Invest in digital and physical readiness.

Autonomous electric vehicles require support including HD maps, 5G, cloud platforms, smart traffic systems, an extensive and reliable charging infrastructure. Governments should address infrastructure and skills gaps to enable safe large-scale rollouts.

6

Institutionalise learning and adaptive regulation.

To keep pace with fast-evolving mobility technologies, GCC regulators should implement regulatory frameworks designed to learn and adapt. This requires living regulations supported by pilot initiatives and systematic, data-driven updates, allowing continuous refinement of safety, cybersecurity and licensing protocols.

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37. Mena Magazine. 'Saudi Arabia-backed Lucid and Nvidia team up to launch self-driving EVs.' 29 October 2025
38. Based on each ICE or BEV requiring one dedicated driver, whereas a single staff member can supervise or operate multiple autonomous vehicles
39. For standard taxis, the analysed vehicles are ICE: Toyota Camry, Toyota Innova, BEV: Tesla Model 3, BYD Seal, BEV AV: Zeekr RT Waymo
40. For Limousine, the analysed vehicles are ICE: Audi A6, Jaguar F-Pace, BEV: Kia EV9, Jaguar I-Pace, BEV AV: Jaguar I-Pace Waymo
41. Net Capital Cost is the amount paid by the vehicle's user when purchasing the vehicle, minus the vehicle's resale value, also known as the residual value
42. Analysis is based on the following standardised assumptions: (1) Annual mileage: 125,000km for all vehicle types except BEV AV worst case scenario, which assumes 75,000km; (2) Ownership period: 2 years; (3) BEV AV worst-case scenario: 50% higher vehicle purchase price and higher support staff ratio; (4) Battery replacement: assumed at 150,000km
43. All figures reflect current market prices and cost structures, with no future cost reductions applied

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