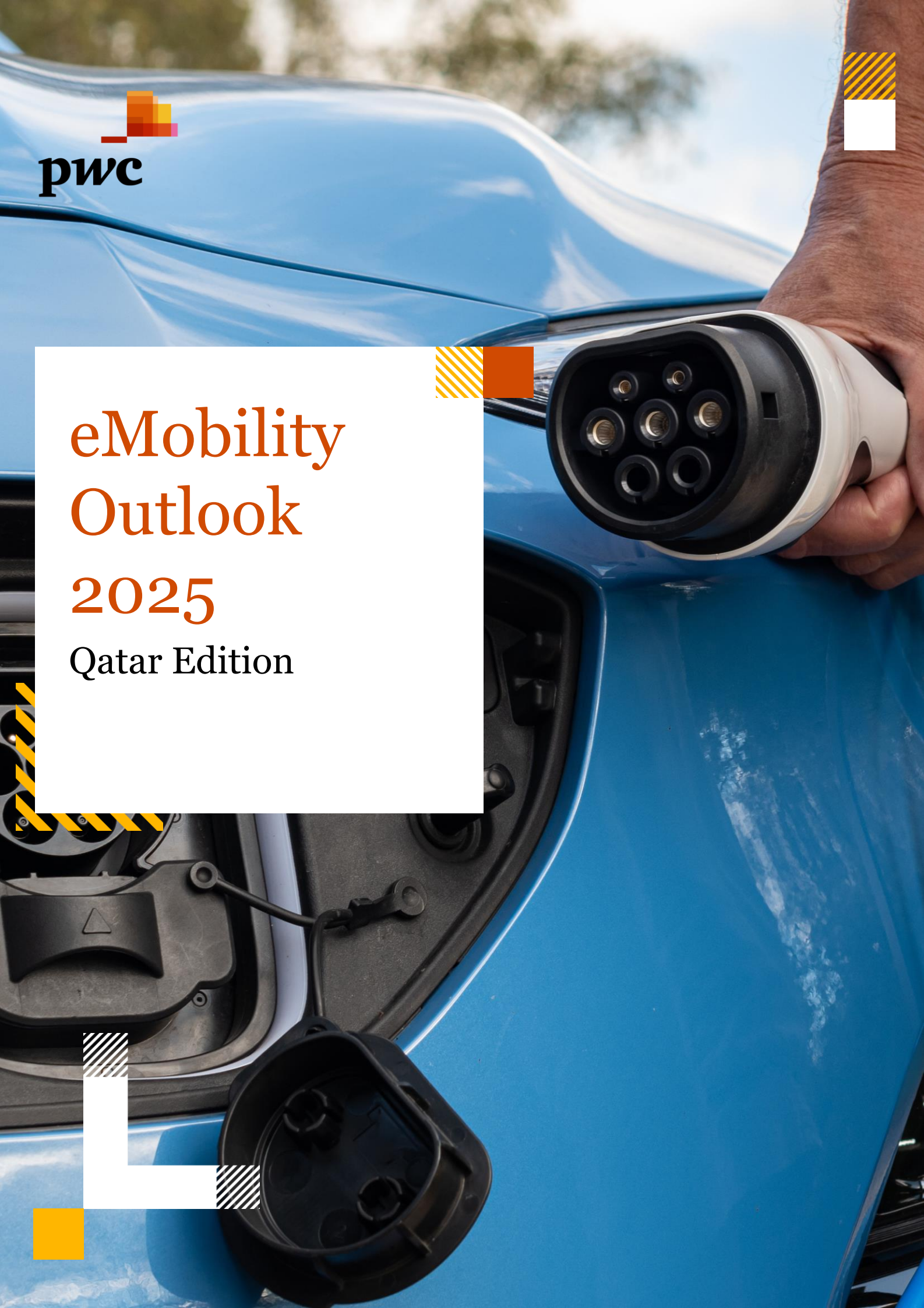


eMobility Outlook 2025

Qatar Edition

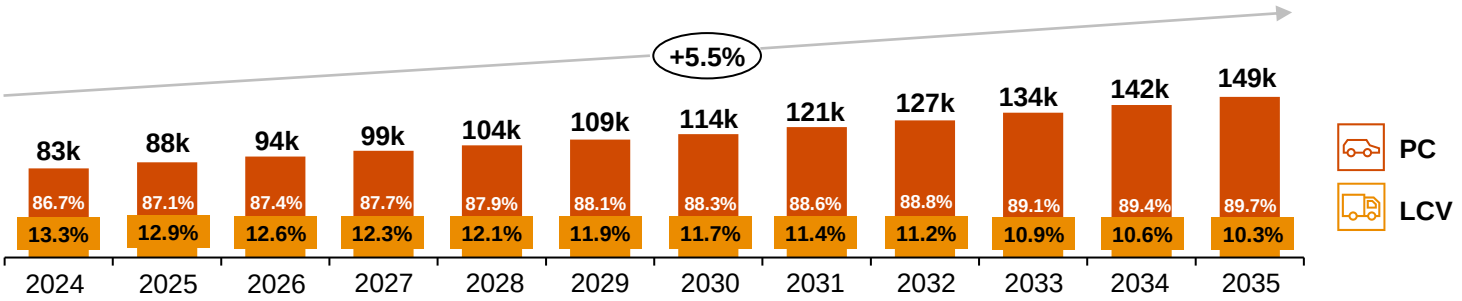
Contents

Executive summary

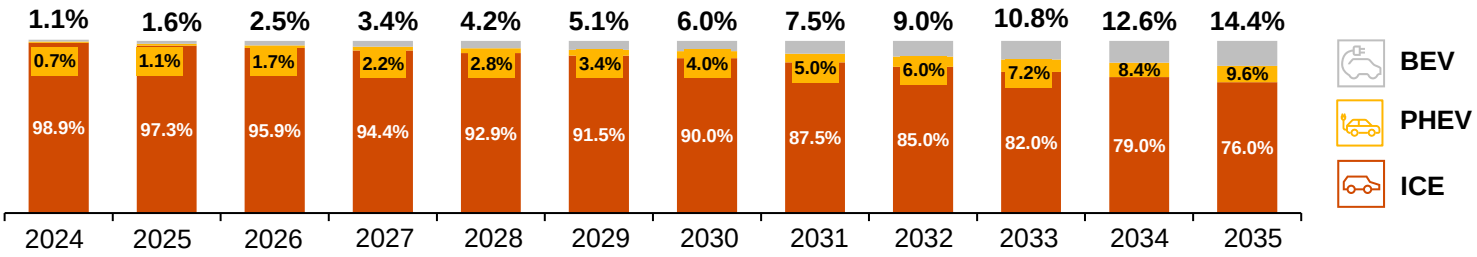
Qatar is rapidly advancing its transition to electric mobility (eMobility), aligning with its National Vision 2030 (QNV 2030) and the Third National Development Strategy (NDS-3), which emphasises on sustainability, economic diversification and a technology-driven growth. As a key driver of this transformation, the Ministry of Transport is playing a pivotal role in steering the country towards a sustainable mobility future. The country's Electric Vehicle Strategy 2021 has set ambitious targets, including EVs comprising 10% of total vehicle sales by 2030[1] and the rapid deployment of EV infrastructure to support a zero-emission transportation future.

Qatar's electric vehicle sales outpace overall automotive market growth

Forecast: Total new vehicle sales by category in Qatar (in thousands, until 2035)



Forecast: Percentage share of electric vehicles of total annual sales in Qatar (until 2035)



Sources: PwC Analysis

PC = Passenger cars; LCV = Light commercial vehicles (include vans and light pick-up trucks;
EV = Electric Vehicles; ICE = Internal Combustion Engines

The country has launched its first homegrown EV brand, Ecotranzit, and is well-positioned to develop a robust and efficient EV network relatively quickly. Government incentives, strong policy frameworks and international partnerships - such as collaborations with ABB E-mobility and SK On - are also fostering an attractive investment climate for the eMobility sector.

Looking ahead, the EV market in Qatar is set for rapid expansion. By 2035, electric vehicles (EVs) are projected to account for over 24% of new vehicle sales. Within this segment, Plug-in Hybrid Electric Vehicles (PHEVs) will make up 9.6% (14,000 units) of new vehicle sales, while Battery Electric Vehicles (BEVs) will hold a larger 14% (21,000 units) share of new sales.

There remains room for opportunity within Qatar's EV space to reduce high upfront costs, enhance infrastructure scalability and strengthen resourcefulness for critical supply chain minerals. There is also potential for integrating advanced thermal management systems. Addressing these opportunities for growth requires public-private partnerships (PPPs), expansion of charging networks and the acceleration of clean energy initiatives.

This report provides a comprehensive analysis of Qatar's eMobility landscape, identifying investment opportunities, key policy enablers and strategies to overcome barriers. As Qatar positions itself as a regional leader in sustainable transportation, its proactive approach to eMobility will be instrumental in shaping the future of green mobility in the Middle East.

Qatar's transition to eMobility

The Ministry of Transport plays a central role in advancing Qatar's transition to sustainable mobility. eMobility is a key pillar of the nation's strategy, aligned with its medium- and long-term goals of achieving a zero-carbon transportation sector. This shift aims to reduce emissions, lower the national carbon footprint, and enhance overall quality of life. Through its leadership and targeted initiatives, the Ministry is actively shaping a future of cleaner, more efficient, and environmentally responsible mobility.

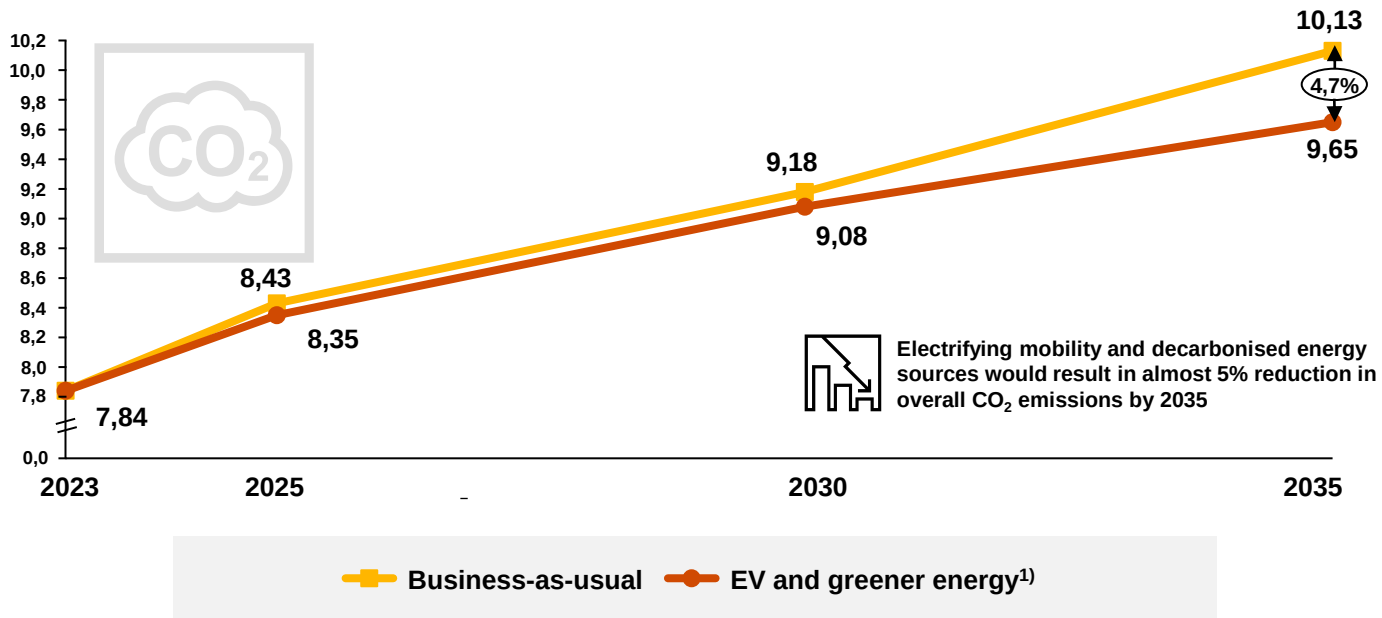
According to QNV2030, the country aims for 35% of its vehicle fleet and all public transport buses to be electric by 2030[2]. Significant progress has been made in integrating eMobility into Qatar's public transport system. Currently, 73% of public buses in Qatar are electric, marking a substantial shift towards greener public transportation[3]. The Ministry of Transport, in collaboration with Yutong, a Chinese commercial vehicle manufacturer, has initiated the establishment of an electric bus assembly plant in the Um Al Houl Free Zone[4]. In the same area, ABB E-mobility, a global leader in EV charging solutions, has partnered with the Public Works Authority (Ashghal) to open a state-of-the-art service and training centre focusing on both theoretical and hands-on training for EV charging infrastructure[5].

The 2022 FIFA World Cup served as a landmark event in demonstrating Qatar's eMobility capabilities, with over 1,000 electric buses providing transportation for fans and visitors, making it the first-ever FIFA World Cup to be held in the Middle East with such a significant focus on electric transportation[6].

As Qatar's economy and population grow, the number of vehicles on its roads is expected to rise from 1.7 million to 2.3 million (passenger and light commercial vehicles), increasing the challenge of automotive CO2 emissions. However, the expansion of renewable energy sources will significantly reduce emissions from electricity generation, cutting CO2 intensity from 0.49kg/kWh[7] to 0.36kg/kWh by 2030, with further declines anticipated.[8] By shifting to eMobility and cleaner power generation, Qatar can curb the rise in CO2 emissions by nearly 5% compared to an entirely internal combustion engine (ICE) fleet, reinforcing the country's commitment to sustainable, low-carbon transportation.

Electric vehicles and sustainable energy sources provide a solution for the growing automotive CO2 emissions in Qatar

Forecast: Total annual CO2 emissions of passenger cars & light commercial vehicles in Qatar (in Mn tons, until 2035)



Source: PwC Analysis

1) Green energy supply includes renewable energy

Opportunities in eMobility

As Qatar strives to become a global leader in zero-emission public transportation, in line with the Qatar National Environment and Climate Change Strategy, and a hub for EVs in the MENA region, several opportunities emerge to accelerate adoption and sustainability.

Accelerating commercial fleet electrification

The Total Cost of Ownership (TCO) for private EVs remains higher today than ICE vehicles due to purchase and insurance costs. However, the situation is improving for commercial buyers, with fleet customers often receiving substantial discounts.

While BEVs currently have a 12% higher TCO for passenger vehicles, the gap is only 0.8% for commercial fleets, making electrification a financially viable option for businesses. Fleet operators benefit from bulk purchasing, optimised charging and higher utilisation rates, which dilute the cost disadvantage and enhance long-term savings.

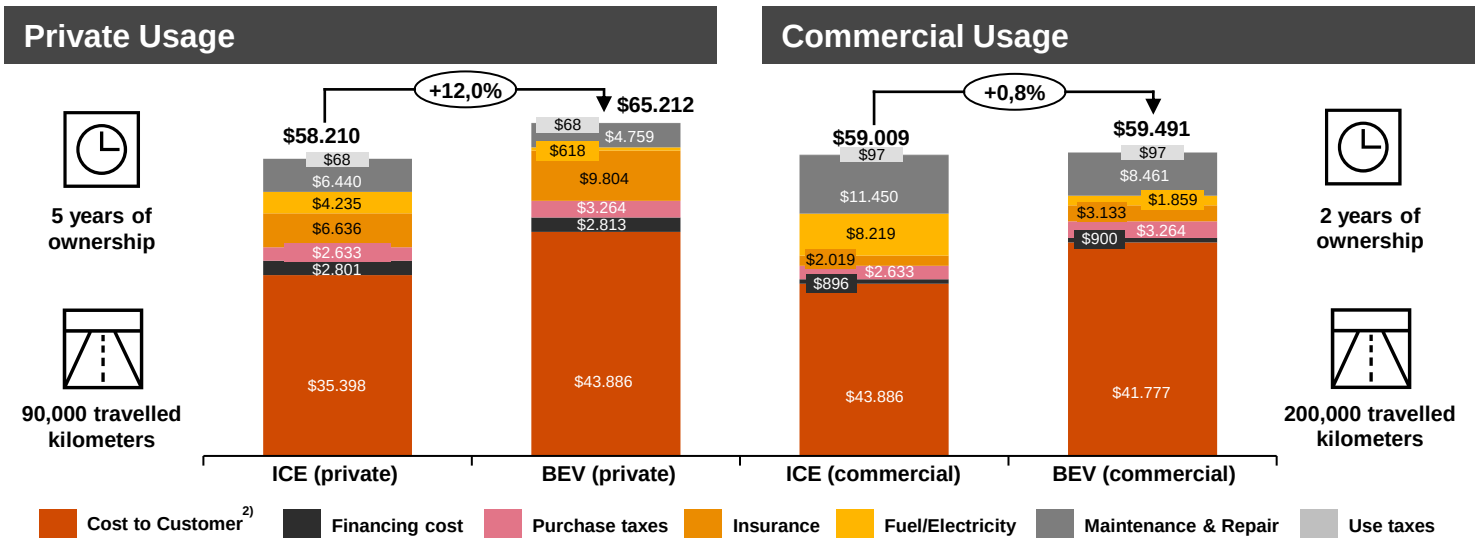
Fleet discounts and price competition further improve BEV affordability in the commercial sector. Large-scale buyers receive significant purchase incentives, reducing upfront costs. Additionally, growing competition among EV manufacturers is driving down prices, making fleets a key entry point for widespread BEV adoption. As governments push for sustainable transport policies, commercial buyers are in a strong position to benefit from subsidies and preferential pricing strategies.

However, charging costs remain a challenge, especially as electricity prices fluctuate based on grid capacity and demand. While fleets can optimise charging during off-peak hours, high energy costs may limit the expected fuel savings. Moreover, differences in TCO calculation methodologies - with BEVs evaluated over a longer ownership period - can make ICE vehicles appear more cost-effective in the short term.

As battery prices decline, infrastructure improves and governments incentivise electrification, the cost gap between BEVs and ICEVs is expected to narrow further, solidifying BEVs as the preferred choice for commercial transportation.

Cost Parity in Qatar: BEVs have higher ownership costs than ICEs for passenger cars, but BEVs are at cost parity for commercial use

Total Cost of Ownership of electric vs. conventional vehicles in Qatar)



Sources: PwC

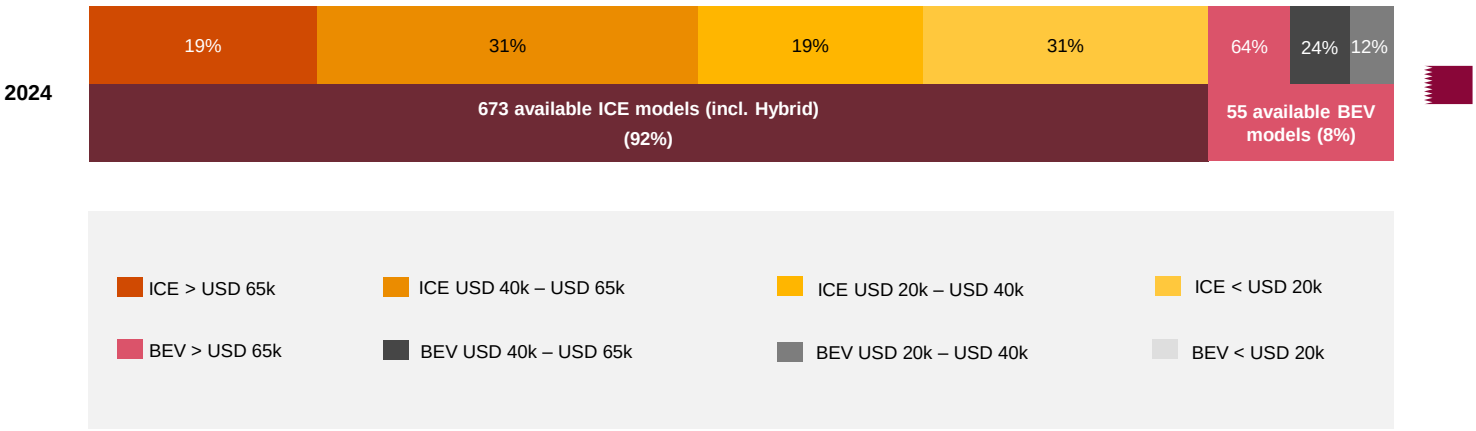
BEV = Battery electric vehicle; ICE = Internal combustion engine vehicle
1) For Qatar, the analysed vehicles, BEV: BMW iX2, Hyundai Ioniq 5 BEV, Audi E-Tron GT, Jaguar I-Pace, Volvo EX30, Mercedes-Benz EQA, BYD Seal, KIA EV9; ICE: BMW X3 20 xDrive, Hyundai Tucson, Audi A8, Jaguar F-Pace, Hyundai Santa Fe, Chevrolet Groove, Toyota Corolla, Toyota Land Cruiser
2) Cost to Customer 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.

Make affordable EVs more accessible

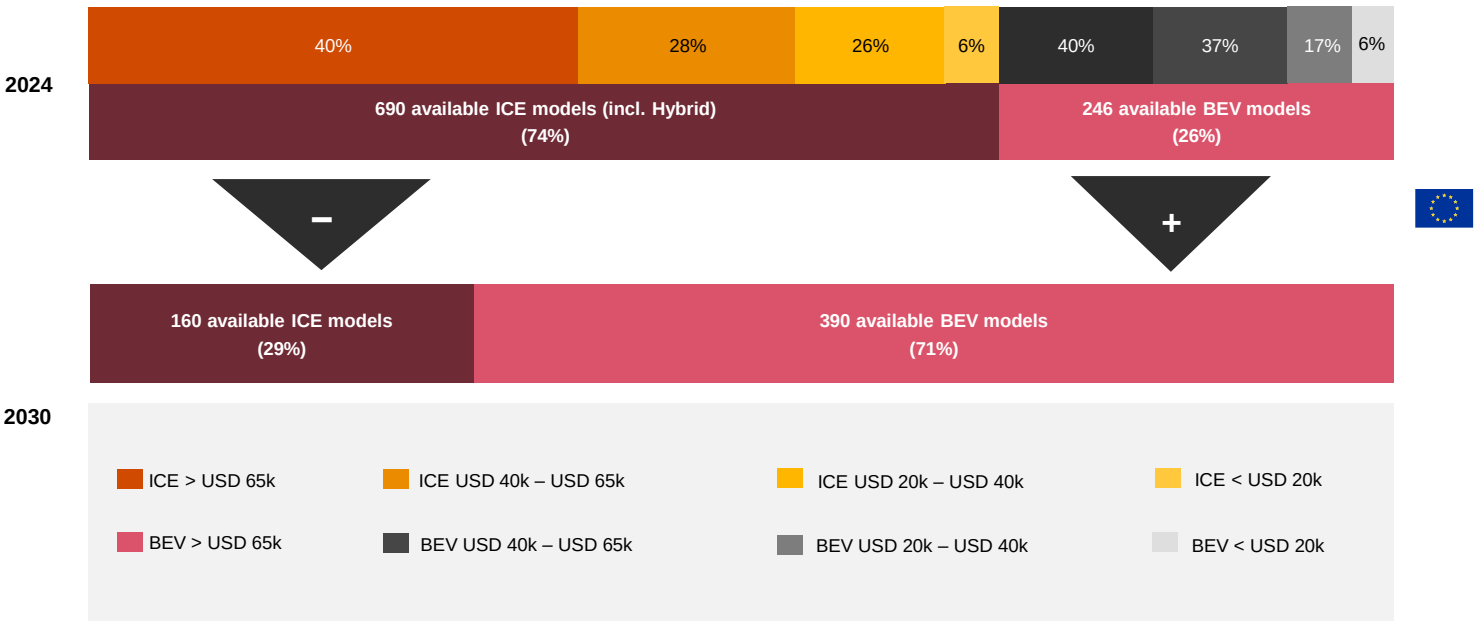
In Qatar and the broader MENA region, ICE vehicles still dominate the market, with over 90% of available models being ICEVs in 2024. A key barrier to electric vehicle adoption is the high price point, particularly in markets like Saudi Arabia, where more than 60% of EVs cost over US$65,000. To accelerate this adoption, the introduction of affordable EV models makes them accessible to a wider consumer base. In Europe, while the ICE vehicles still outnumber BEVs, it is expected that within six years, BEVs are expected to dominate, given the government-backed electrification targets and stringent emission regulations. For the MENA region to mirror this shift, stronger policy incentives, infrastructure expansion, and price reductions will be essential in making EVs a mainstream choice.

Many global BEV models remain unavailable to Qatar consumers

Available ICE and BEV car models in Qatar



Available ICE and BEV car models in Europe



Sources: PwC Analysis

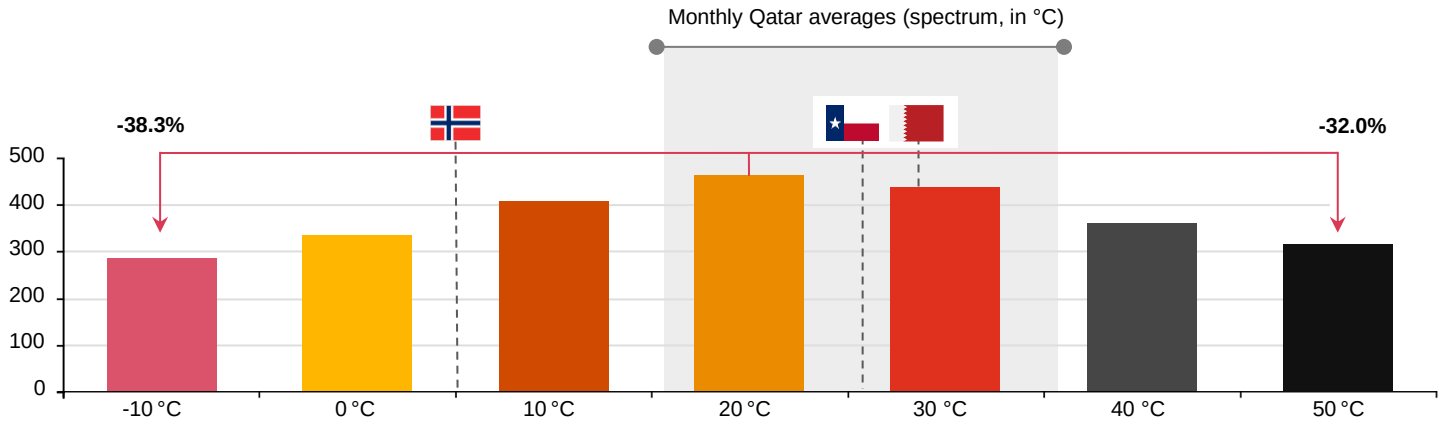
Room for advanced thermal management systems

High temperatures significantly affect EV efficiency, range, and charging performance. Qatar's high temperatures, like the rest of the Middle East, during summer can significantly affect EV range and the life of lithium-ion batteries. EVs perform optimally between 20°C and 35°C, where energy demand for cooling or heating is minimal, but at 40°C, energy demand rises sharply and they require more cooling, reducing range and charging speed. For instance, an EV with a 460km range at 20°C may only achieve 360km at 40°C, a 23% drop due to the additional energy needed for battery cooling systems. High temperatures also impact charging performance, as battery management systems limit charging power to prevent overheating, reducing overall efficiency.

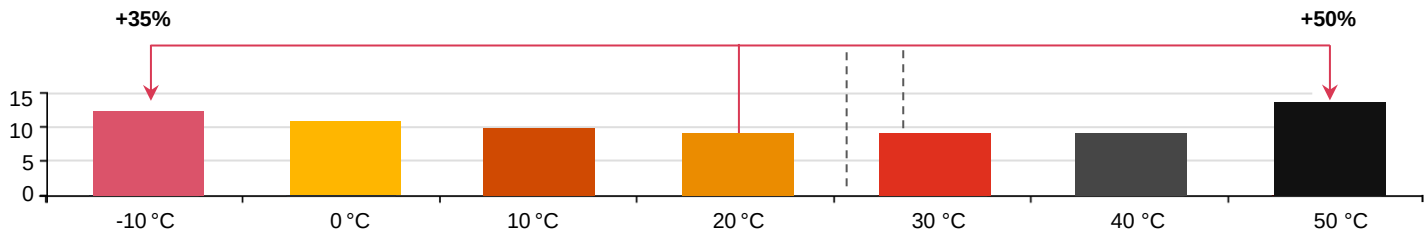
This challenge is not unique to hot climates; extreme cold has a similar impact on EV performance, as seen in Norway. The key to maintaining EV efficiency in Qatar lies in advanced thermal management systems, adaptive charging strategies, and continued advancements in battery technology to mitigate the impact of extreme temperatures and ensure reliable performance year-round.

Extreme temperatures significantly affect EV range & charging – Qatar equally suitable for EV's as Norway or Texas

Average range (in km) at different ambient temperatures (in °C)[1]



Charging time for 100 km (in Min) at different battery temperature (in °C, at charging process start)[2]



Sources: PwC

1) Example based on Tesla Modell Y Battery size: 79 kWh Optimal consumption@20 °C : 0.17 kWh/km
2) Rated charging power: 150 kW, Consumption: 0.25 kWh/km (average); battery temperature not necessarily equal to ambient temperature due to battery thermal mgmt. system

Average annual temperature of selected countries and regions in °C

Charging infrastructure catch-up

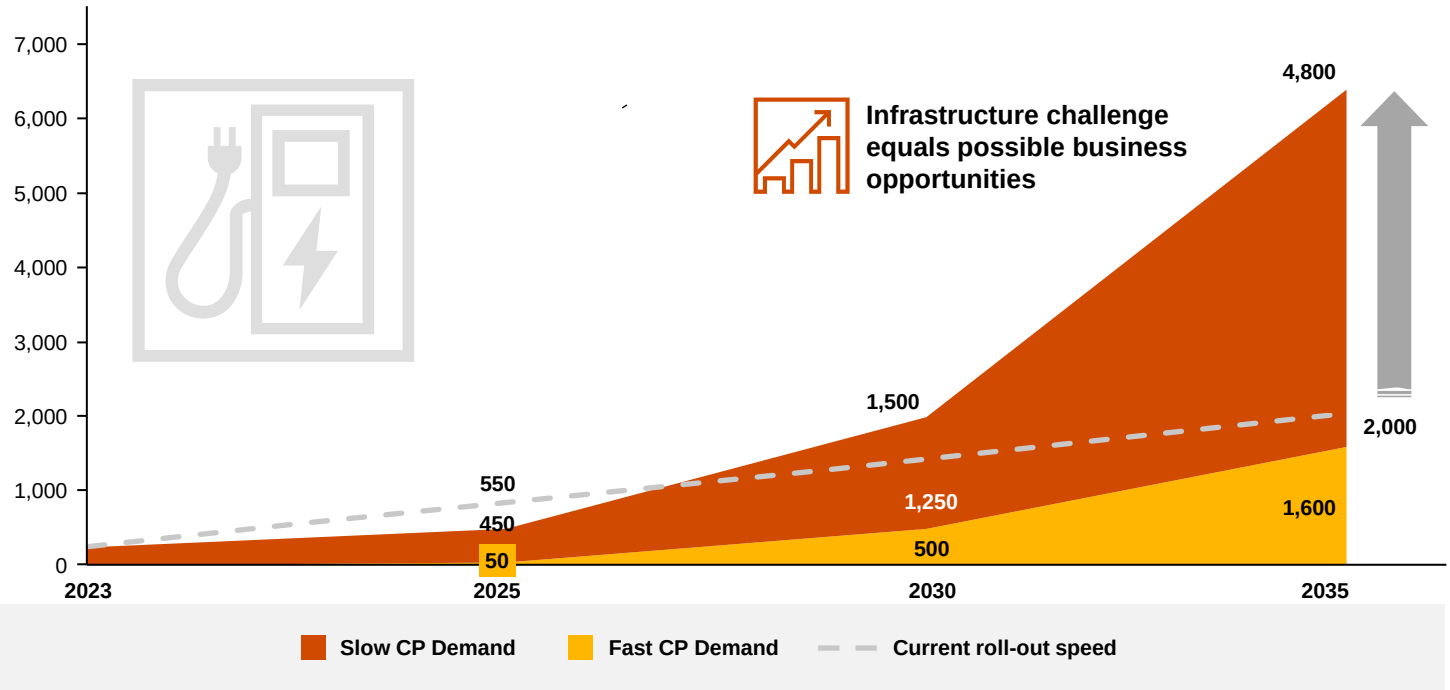
The strategic expansion of Qatar's public charging infrastructure is critical to sustaining the growth of EVs by 2035. As of January 2024, Qatar has approximately 200 fast chargers installed across the country[9]. However, to meet the rising demand, the country needs to significantly increase installations, with a shortfall of over 4,000 charging points anticipated by 2035. The Qatar General Electricity and Water Corporation (Kahramaa) aims to add 1,000 EV charging stations by 2025 and 2030 to promote green transportation in the country and cut carbon emissions following the economic and environmental sustainability goals under the QNV 2030.[10]

While slow alternating current (AC) chargers currently account for more than 85% of the network, rising EV adoption demands more high-power direct current (DC) fast chargers. By 2035, fast chargers should comprise at least 25% of all public stations—reducing dwell times and optimising station density. Rollout must prioritise urban and inter-city corridors (Doha City Center, Lusail, Hamad Airport, Doha Industrial Area), guided by heat-mapping of traffic and demographics.

Crucially, this build-out must align with grid readiness. Kahramaa's smart-grid upgrades—Advanced Metering Infrastructure, automated load balancing, and renewable integration— will provide the digital backbone for real-time demand management, optimised charging loads, and futureproof the grid for high-speed charging and vehicle-to-grid (V2G) solutions.

Rising EV use in Qatar by 2035 demands strategic expansion of public charging infrastructure

Forecast: Public charge point demand vs. availability in Qatar (until 2035)



Sources: PwC Analysis, Gulf Times

Supply chain challenges

Qatar experiences high temperatures, especially during summer months, which can negatively impact the performance and lifespan of lithium-ion batteries. EV industry is likely to depend on lithium for many years to come, because cheaper battery technologies are yet to reach market maturity.

Qatar should explore innovative and economically efficient methods to extract and process lithium, a vital mineral for battery production, from seawater desalination and the brine associated with oil extraction. By utilising local resources, Qatar could significantly reduce production costs and minimise vulnerabilities associated with transnational supply chains.

As the geopolitical competition to secure critical minerals heats up, Qatar needs to notably balance its engagement with the US, Russia, Germany and China to position itself in the lithium-ion battery supply chain.

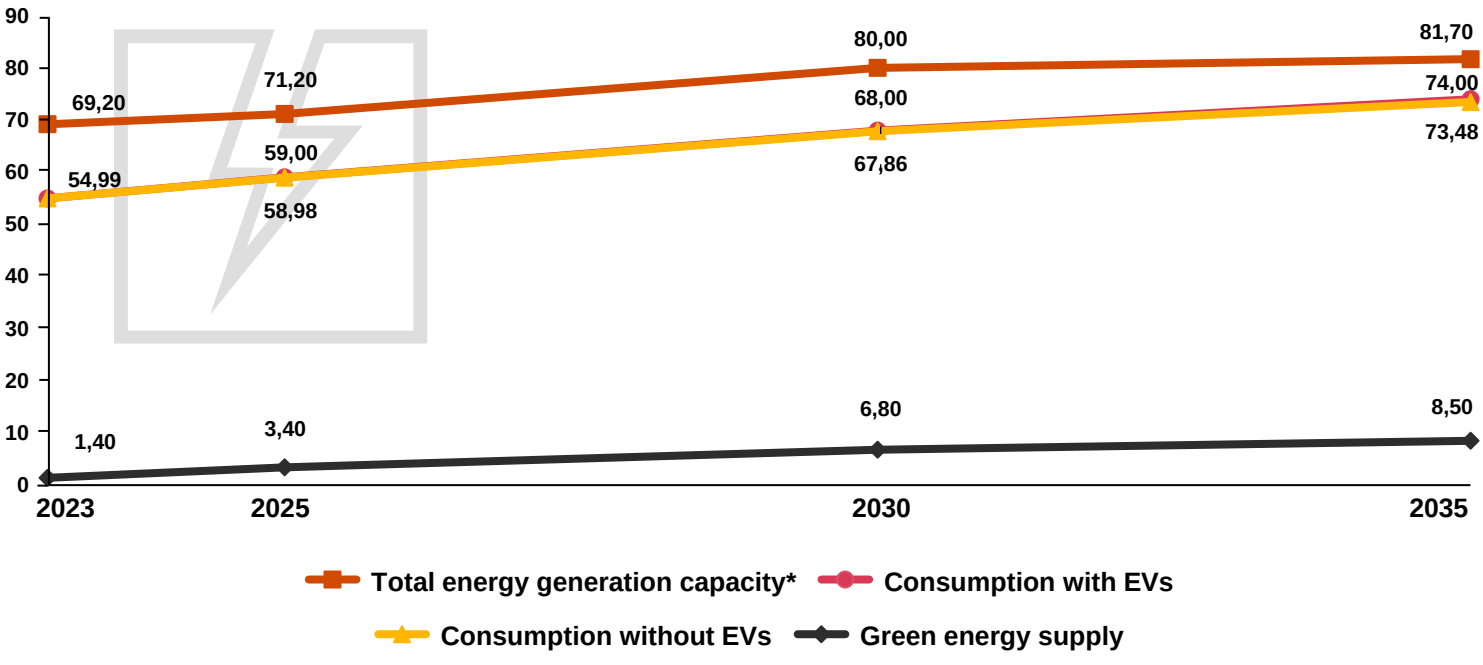
Accelerating renewable energy growth

Qatar's electricity demand is set to rise by 34% between 2023 and 2035, reaching 74 TWh, driven by economic growth and urban expansion. However, the additional demand from EVs will remain minimal - just 0.5 TWh by 2035, or 0.7% of total consumption. This relatively low energy requirement presents a significant opportunity for Qatar to power EV charging entirely through renewable sources.

Currently, gas-fired power plants dominate electricity generation, but Qatar has set ambitious renewable energy targets. By 2030, solar capacity is expected to grow fivefold to 4 GW[11], reaching 5 GW by 2035.[12] With green energy generation projected to reach up to 8.5 TWh, Qatar has the potential to fully meet EV charging demand through clean energy, reinforcing its commitment to net-zero ambitions and sustainable transportation. This transition not only supports regional decarbonisation efforts but also strengthens energy security by reducing reliance on fossil fuels for EV power generation.

Clean energy sources are poised to meet Qatar's EV charging demand in support of net-zero ambitions

Forecast: Energy generation1) vs. demand – with and without EV in Qatar (in TWh, until 2035)



Sources: PwC, Qatar National RE Strategy

1) Theoretical energy that can be generated within Qatar by the existing power plant park in years under consideration

Qatar's eMobility sector primed for market expansion

According to the International Energy Agency, the world is on the verge of a new era of electricity, with global fossil fuel demand expected to peak by the end of the decade. This shift suggests that surplus oil and gas supplies could fuel increased investment in green energy, accelerating the transition toward a cleaner, more sustainable future.[13]

Qatar, with its ambitious National Vision 2030 and Electric Vehicle Strategy 2021, is accelerating this transformation in the Middle East, positioning itself as a leader in promoting eMobility. These efforts are creating significant opportunities for investors and businesses in the electric vehicle sector.

Qatar's commitment to sustainability, paired with attractive green financing options - including low-interest rates on EV loans - further strengthens the case for growth in this space. With a projected annual economic growth rate of 4.1% between 2025 and 2029 and a population set to reach 3.2 million by 2030, Qatar is primed for substantial market expansion.

Environmental benefits and Vision 2030

One of the most compelling aspects of Qatar's eMobility transition is the environmental benefits. The adoption of EVs and the increased use of greener energy sources are projected to significantly reduce CO2 emissions, aligning with Qatar's broader objectives under National Vision 2030, which includes a 25% reduction in greenhouse gas emissions by 2030. The integration of renewable energy sources, with green energy capacity anticipated to reach up to 8.5TWh and solar power generation capacity expanding to 5GW by 2035, further supports this environmental agenda.

Domestic and global investment focus

Qatar is also investing heavily in developing its domestic eMobility ecosystem. Prototypes of Vim, the first EV to include Qatari intellectual property, were revealed by Ecotranzit in 2023[14]. The Qatar-based company has also announced plans to establish assembly plants and production lines in the country. Besides Yutong, Qatar's attractive market has already drawn interest from EV manufacturers such as Volkswagen, Porsche and Gaussin.

Localising automotive production presents significant investment opportunities for Qatar. The country needs to offer favourable incentives and infrastructure support to continue attracting automotive and infrastructure manufacturers, encouraging them to establish local assembly plants, create job opportunities and boost the domestic economy.

Qatar is exploring eMobility opportunities abroad as well, with the country's sovereign wealth fund highlighting India as a key market for EV investment[15] - positioning itself to become a significant player in the international EV landscape.

EV battery opportunities

As the EV industry is likely to depend on lithium for many years, Qatar should explore innovative and economically efficient methods to extract and process this critical mineral from seawater desalination and the brine associated with oil extraction.

By utilising local resources, Qatar could significantly reduce production costs and minimise vulnerabilities associated with transnational supply chains. As the geopolitical competition for securing critical minerals intensifies, Qatar needs to balance its engagement with key global players like the US, Russia, Germany and China to position itself advantageously within the lithium-ion battery supply chain.

The relative novelty of EV technology also presents a challenge regarding the availability of skilled workers with EV repair expertise. Specialised training is required to understand high-voltage electrical systems, battery management systems, regenerative braking systems and other EV-specific components. Additionally, EV batteries have a 'first' life expectancy of 15-20 years.

Transitioning from an expensive “single use and replace” model to remanufacturing and swapping batteries may be a viable opportunity for original equipment manufacturers and dealers to invest in. Re-using ‘old’ EV batteries in alternative applications like commercial or domestic energy storage would have sustainable and financial benefits. SK On, the world's fifth-largest EV battery manufacturer, has secured long-term financial investment from a consortium that includes Qatar Investment Authority (QIA)[16]. This investment aligns with QIA's strategy to invest in sectors shaping the future global economy, such as tech-enabled industries, innovative start-ups and companies driving the global energy transition.

Collaborative efforts and PPPs

Collaboration between infrastructure owners, energy providers, regulators, and customers on EV-specific legislation is essential. This includes applicable licensing and approval requirements, incentive and subsidy structures, technical regulations, charging standards and codes, and requirements related to environmental, health, and safety standards. Public-private partnerships (PPPs) can help address infrastructure challenges, mitigate financial risks, and contribute to technological advancements. Governments can oversee the process, offer low-interest loans or grants, and provide tax breaks, while businesses can contribute knowledge, technology, operational efficiency, and expertise.

Looking ahead (1/2)

As Qatar continues to drive its eMobility agenda, the Ministry of Transport plays a pivotal role in steering the nation's transition towards sustainable mobility. Through strategic planning and policy leadership, the Ministry is facilitating key initiatives that will ensure long-term success and sustainability in the eMobility sector. Essential actions include:

Continue investing in EV manufacturing and assembly:

Qatar should attract global EV manufacturers to establish local assembly plants, creating jobs and boosting the domestic economy.

01

Expand public charging infrastructure:

Significant development in public charging facilities is critical to support the increasing number of EVs and ensure accessibility for all users.

02

Develop a robust aftermarket support ecosystem for EVs:

Establish specialised training programmes for EV repair, maintenance, and battery management to ensure sustainability and efficiency.

03

Transition towards cleaner energy sources:

Qatar can leverage its renewable energy capacity, such as solar power, to meet the rising electricity demand from EVs and reduce carbon emissions.

04

Focused public-private partnerships:

Encourage collaboration between government entities and private sector players to address infrastructure challenges, mitigate financial risks, and drive technological advancements in eMobility.

05

By implementing these strategies, Qatar can strengthen its position as a regional leader in eMobility, fostering sustainable development and economic growth while contributing to regional and international environmental goals.

Looking ahead (2/2)

To implement these actions – PwC Middle East has designed a strategic roadmap for all eMobility stakeholders that lays the groundwork today, scaling innovation for tomorrow and positions the nation as a global eMobility hub.

Short-term: Laying the foundation

In the short term, Qatar aims to build core infrastructure, regulatory frameworks and partnerships essential for an eMobility ecosystem. This includes rolling out extensive charging networks - especially fast chargers in urban and high-traffic areas—and developing public charging facilities. To ensure seamless access, the government can mandate interoperability standards, enforce unified public charging rates and update building codes to regulate and enable private charging infrastructure.

Incentives such as environmental bonuses for EV purchases and zero-emission vehicle targets will spur demand, as seen in Norway and Germany, while domestic capabilities are strengthened through investments in battery and chip production, as seen in Saudi Arabia. Parallel efforts include establishing vocational EV training programmes and launching a national eMobility data platform to monitor progress and guide policy.

Finally, Qatar should engage OEMs and tier-1 suppliers, promote Lusail and Hamad Airport as eMobility hubs, activate government procurement and incentivise local EV manufacturing.

Mid-term: Scaling and integration

Qatar's mid-term strategy focuses on expanding national infrastructure, localising production, and integrating energy systems. To scale battery manufacturing, Qatar can accelerate local lithium extraction, forge early partnerships for battery plants and offer R&D incentives for advanced technologies - leveraging trends like the U.S. Inflation Reduction Act and France's carbon-based subsidy eligibility.

Workforce development will be driven by a national electric mobility platform and EV-specific training programmes. Energy integration measures include piloting smart charging and vehicle-to-grid (V2G) systems - as demonstrated in the UK and Netherlands - alongside hydrogen and nuclear projects to bolster grid resilience.

Finally, suppliers should be co-located in economic zones, EV adoption should be incentivised through PPPs tied to carbon metrics and a national EV maintenance certification programme established to support scaled production and aftersales networks.

Long-term: Becoming a global eMobility hub

Over the long term, Qatar must aim to establish itself as a globally integrated clean-mobility leader. Central to this vision is a full-cycle battery ecosystem—spanning local lithium extraction, advanced R&D clusters in EVs, software and energy storage, end-of-life recycling, and commercial storage solutions using retired EV batteries. The country should scale hydrogen and nuclear projects as renewable complements and enable full V2G deployment with dynamic pricing to balance the grid and support zero-emission transport. By co-locating suppliers in economic zones and forging international partnerships, Qatar should position itself as an EV component exporter to the GCC, EU, South Asia, and beyond - underpinned by robust R&D incentives and global collaboration.

Resources

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To learn more about how we are helping organisations accelerate sustainable mobility.

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