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EVs and Batteries in the Gulf: Industrial Policy Amid Tariff Wars and the Battle for Market Access

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KEY TAKEAWAYS

East Asian players are the main producers of electric vehicles (EVs) and batteries

Western car manufacturers are catching up through industrial policies, and this is creating tensions with their East Asian competitors. However, unlike the US, European automakers will not end JVs with China easily and risk being denied market access to China.

Due to US and EU Tariffs, Chinese vehicles are flooding GCC markets

The Gulf market is a vital outlet for Chinese automakers in the ongoing consolidation process, and Gulf states should establish regulatory standards of their own to avoid becoming a dumping ground for Chinese car exports.

The Gulf can benefit from setting up a regulatory fence for battery identification

To ensure high safety standards for EV drivers in the Gulf, incentives can be placed to encourage the adoption of solid-state batteries as an alternative to lithium-ion batteries, as the latter hs been linked to EV battery fires.

It is imperative to weigh the costs and benefits before joining the rush for EVs and mobility AI:

When considering the adoption or development of EVs and mobility AI, the Gulf should weigh the costs and benefits, as well as their future role in grid connected cars and flying taxis—or eVTOLs, which would also entail autonomous driving. GCC policymakers must bear in mind that EV factories, like chip foundries, will not necessarily create jobs given the level of automation that has already been achieved.

KEYWORDS

Electronic vehicles (EVs)

(Large Capacity) Batteries

Tariffs

Industrial Policy

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Cover Image: Men inspect an electric car at a BYD showroom in Riyadh on June 8, 2024. (Photo by Fayez Nureldine / AFP)

EVs in the Heart of the Green Transition and Industrial Policy

As the Gulf states set their national strategies for digital and green transitions, electric vehicles are flooding into the traditionally fossil fuel-driven auto markets of the Gulf — especially in the Kingdom of Saudi Arabia, the United Arab Emirates, and Qatar. Sales are projected to reach 30.05K units in the GCC in 2025, which will potentially reach 36.62K units by 2029. [1] Notably, in recent years, Chinese automobiles have been penetrating the major markets in the Gulf, not solely limited to the markets for EVs, but also diesel ICE (internal combustion engines) markets.[2] Multiple 'Showroom + Discovery Centers' for China's BYD have opened and are expanding rapidly throughout the region—in Saudi Arabia, in Riyadh, Jeddah, and Dharan; in the UAE, Dubai, Abu Dhabi, and Ras al Khaimah, Sharjah; in Doha, Qatar; in Sitra, Bahrain; in Muscat, Oman; and in Al Rai, Kuwait, while China's Xpeng and SAIC Motors showcase their products in shopping malls through exhibitions in major Gulf cities.[3]

> The Gulf states, who are on the consumer end of the automotive supply chain, have not had the opportunity to either thoroughly examine their capacities or even ascertain valid reasons to embrace EVs in their fossil-fuel-dominant economies.

Behind the scenes, what is motivating such market penetration by Chinese motor companies is the impact of industrial policy in various forms within China, compounded by industrial policies in the US and Europe, the other two prime markets for cars globally. China has, since the early 2000s, implemented several forms of subsidies and tax benefits for the EV industry and customer adaptation.[4] In recent years, the U.S, came to a realization that it has fallen behind in the production of large capacity batteries and responded by attempting to onshore manufacturing related to the green transition (GX) through the Inflation Reduction Act (IRA) of 2022.[5] Underlying such concerns are national security implications and anticipations of fiercer competition with China in mobility AI. In the coming decade, China and the US will continue racing towards 'EVs as connected cars,' eVTOLs (electric vertical take-off and landing), and flying taxis. These technologies will only be achievable when physical AI is implemented on the grid in full self-driving (FSD) mode.

This issue brief examines the relationship between a) industrial policies (focusing on EVs) that entail subsidies and tax exemptions for growth in China, b) overcapacity issues concerning EVs, and c) the subsequent subsidies and tariffs on Chinese EVs by the US and Europe. Analyzing the intersection of these issues sheds light on the factors that have led Chinese automakers to proactively pursue market access in the Gulf.

The Gulf states, who are on the consumer end of the automotive supply chain, have not had the opportunity to either thoroughly examine their capacities or even ascertain valid reasons to embrace EVs in their fossil-fuel-dominant economies before responding with their own industrial policy. Such responsive industrial policy is often understood in the context of economic diversification in the Gulf, particularly with Saudi Arabia's sovereign wealth fund (SWF), the Public Investment Fund (PIF), seeking several ways to bring in EV manufacturing into Saudi Arabia.[6]

The analysis finds that the three major car markets of China, the US, and the EU have yet to carve a clear path toward achieving efficiency in transportation through EV adoption, nor have they created appropriate global market conditions with competing industrial policies. Furthermore, the analysis warns that, contrary to the hopes of some Gulf economies, EV manufacturing will not necessarily create jobs due to increasing levels of automation. However, given that the Gulf states are looking to compete and achieve mobility AI, it is likely that EVs will eventually be adopted on a large scale in the region (although this may take time).

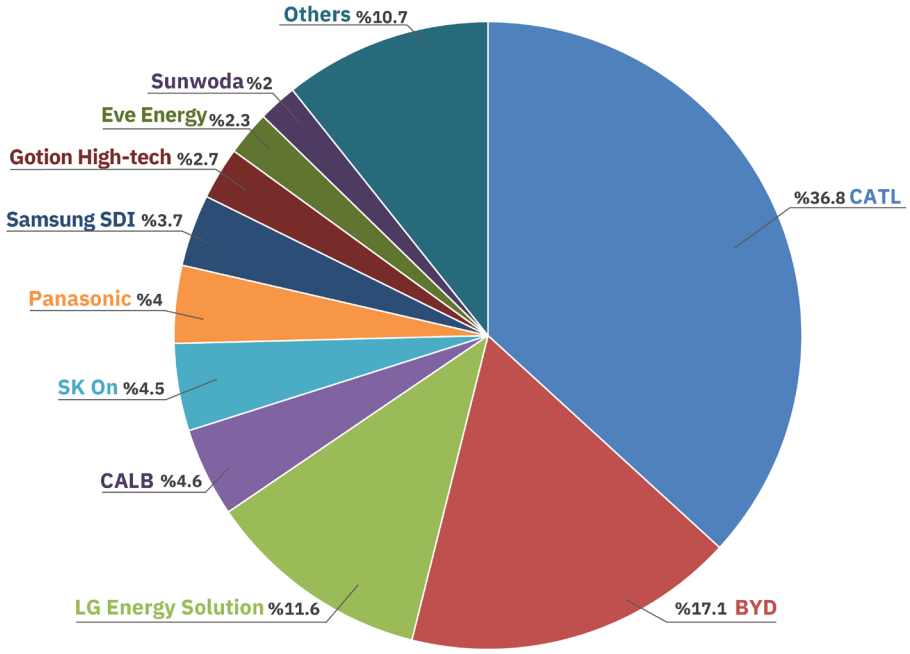
Therefore, rather than pursuing EVs without caution and careful planning, the Gulf states must seriously consider addressing EV battery safety issues and advanced driver-assistance systems (ADAS).

The Battle for Market Access and EV Tariffs from the US and Europe

China's ascendance into the EV and battery industry can be explained by the components of its industrial policy: subsidies and joint ventures — both for EV and battery production and for rebates on new EV purchases by consumers. China's subsidies on EVs and batteries have played a crucial role. China invested approximately $231 billion since 2009 to foster the EV industry,[7] and has grown to dominate battery production. In fact, most Chinese EV manufacturers began as battery producers, and Contemporary Amperex Technology Co., Limited (CATL)[8] currently leads the global market for lithium-ion-phosphate (LFP) batteries, with a 36.8% global market share in 2024.[9] BYD (Biyadi, or 'Build Your Dreams') — the Chinese EV manufacturer that has now overtaken Tesla in terms of global EV production and sales — was originally a battery company that partnered with German automakers for design to transform itself into an EV company.[10] As of 2024 (Figure 1), the global market shares for EV batteries are dominated by Chinese players (CATL, BYD, CALB, Gotion, Eve Energy, Sunwoda, etc.), followed by peers from South Korea (LG Energy Solution, SK On, Samsung SDI, etc.), and Japan (Panasonic).

But subsidies alone could not have catapulted Chinese battery companies into full-fledged EV companies had it not been for joint ventures (JVs) with foreign automakers and the requirements embedded in them. Since 1994, the Chinese government had been encouraging foreign companies to form JVs with Chinese counterparts and build car factories to stimulate the domestic auto industry for competitiveness, but it restricted the percentage of foreign ownership to 50%. In 2018, the Chinese government gradually opened China's auto market to foreign producers and then opened the commercial vehicle market in 2020. In December 2021, China's National Development and Reform Commission (NDRC) and the Ministry of Commerce (MOC) lifted restrictions on foreign

Figure 1: Market share of the world's top EV battery makers, Jan-Nov 2024



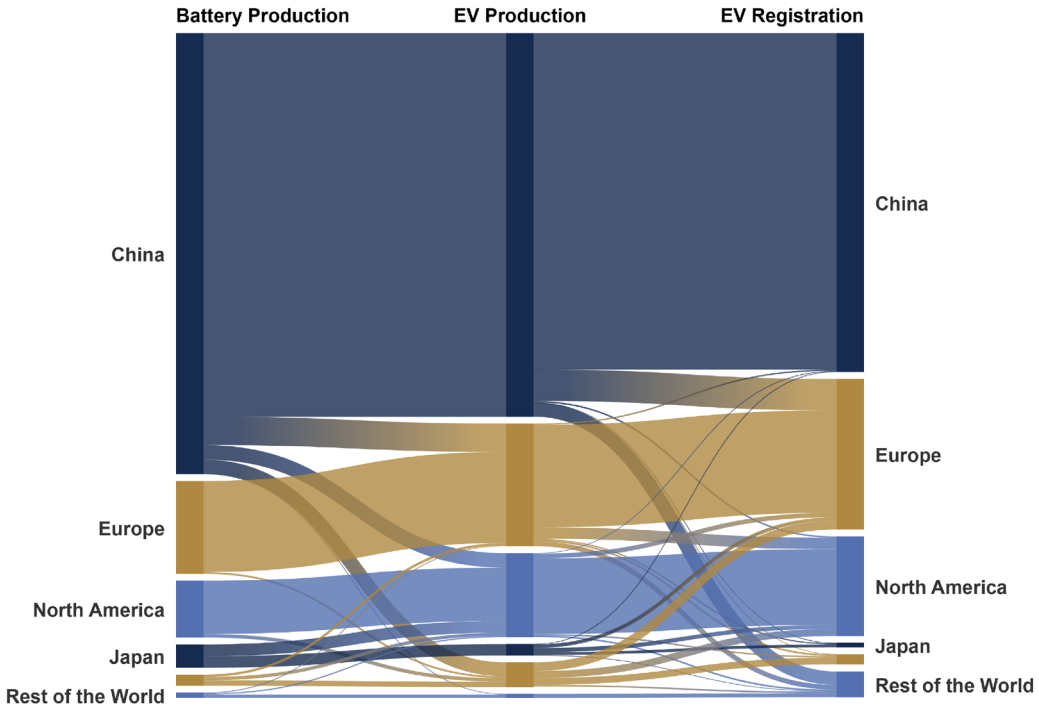
Source: Lei Kang, "Global EV Battery Market Share."[11]

shares in the passenger car industry (which is about 80% of the total auto market in China), with the measures going into effect January 1, 2022.[12]

In addition to the enticement of joint ventures with foreign companies that sought access to the Chinese market, forced technological transfers via the joint venture (JV) requirement for foreign companies — particularly in the auto sector — were critical to China's leap into future industries. China's Cooperative Joint Ventures Requirement lapsed in 2022, and the Chinese EV and battery industry has since undergone a series of market consolidations. This trend is projected to continue in the coming years, which will likely lead to the demise or merging of several players. Furthermore, although the JV requirement was removed in 2022, the continued flow of labor and supplier overlaps make the JV requirement removal not so impactful in curbing knowledge spillover moving forward.[13]

While the Gulf states considered DX/GX as part of their plans for economic diversification, elsewhere the debate on China's EV overcapacity exacerbated throughout the years of 2023-2024 and continues into 2025. European ports faced a deluge of Chinese EVs, prompting the EU to investigate how the Chinese EV sector is unfairly boosted by huge amounts of state aid. After a series of talks with China, the EU proceeded with imposing pre-emptive tariffs against Chinese EVs.[15] The Biden administration also imposed tariffs of 100% in anticipation of Chinese EVs entering the US market via Mexico.[16] China's MOC responded in protest, saying that the measures "severely affect the atmosphere for bilateral cooperation," and China's Ministry of Foreign Affairs noted in response that Beijing "opposes unilateral tariff hikes in violation of WTO rules."[17] A day prior to the 50th G7 Summit held in Italy on June 13, 2024, the EU announced

Figure 2: Global Battery Production, EV Production and EV Registration, 2023



Source: IEA Analysis based on data from Benchmark Material Intelligence and EV Volumes.[14]

that its tariff on Chinese EVs will range from 17 to 38.1%.[18] China has in turn initiated a WTO complaint against the EU's definitive duties on Chinese EVs on November 6, 2024.[19] This action was following China's earlier request for consultation with the EU at the WTO on countervailing duties against Chinese EVs (DS626) on August 9, 2024.[20] The WTO, however, lacks an appellate body since the U.S. has ceased to appoint judges, and thus the dispute settlement function has not been fully operational since December 11, 2019.[21]

Upon his inauguration, US president Donald Trump issued a levy of 25% punitive tariffs on all imports from Canada and Mexico (which was then delayed for a month), then subsequently announced a 10% punitive tariff against imports from China and potentially the EU.[22] China responded with counter tariffs on US goods.[23] Trump went on to impose 25% global tariffs on steel, to which the EU responded with countermeasures.[24]

> "Ultimately, the UAE aims to connect EV's to the digital grid, enabling the realization of physical AI both on the ground and in the skies."

It is unclear whether the subsidies for EV production and purchases in the US under the Inflation Reduction Act (IRA)[25] signed under Biden[26] will remain under Trump in the long term. Yet, if significant subsidies are removed for South Korean EV and battery companies, this would force business planning shifts that may negatively impact the EV industry plans of Saudi Arabia, as Hyundai Motor Group is a major player in the Saudi-proposed EV brand CEER. The IRA subsidies have been controversial amongst European automakers and South Korean EV and battery producers,[27] who argue that they are discriminatory because they limit subsidy provisions only to purchases of EVs that underwent final assembly in North America (under the clean vehicle tax credit scheme).[28]

As the global market competition for EVs and batteries intensifies, the battle for market access is on across continents and jurisdictions. The Gulf region is seen as a potential market as the US shuns Chinese EVs amid national security concerns, while the EU grapples with the dilemma of maintaining collaboration with Chinese companies while seeking restrictions on Chinese EVs. Given that China faces market barriers in the biggest car markets — the US and the EU — the only option is to expand into non-US, non-EU markets. In this context, the Gulf states present an attractive destination due to their purchasing power. However, as a fossil fuel producing region with a shortage of charging stations, there is relatively small demand and consumer incentive to opt for imported EVs in the Gulf.

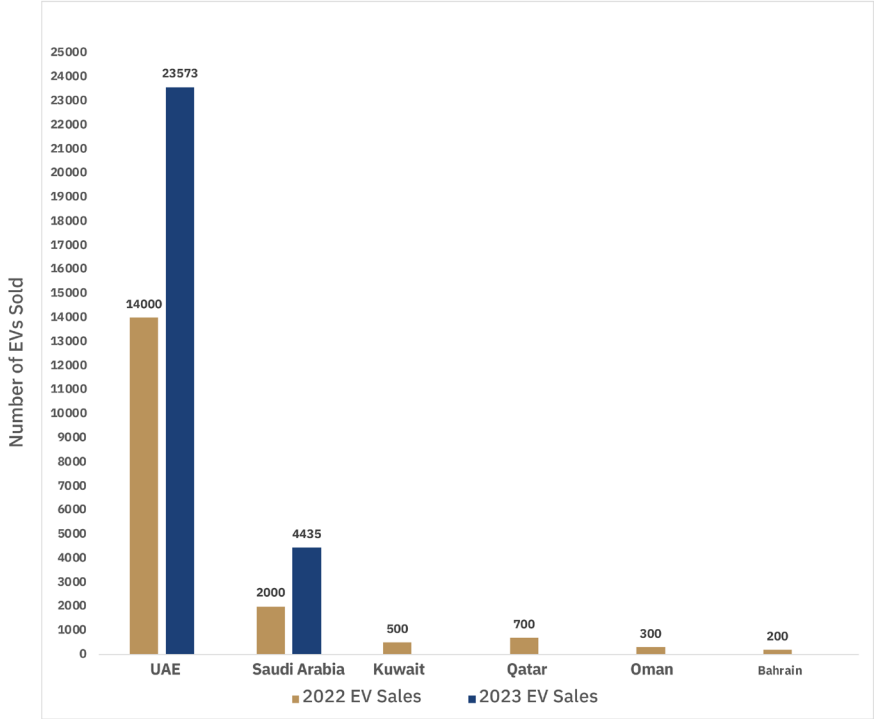
EVs in the Gulf States: Aspiring for EV Production and Mobility AI amid Low Market Demand

The GCC economies have placed an emphasis on digital and green transitions as they seek a partial transition from fossil fuels. Transformations in other parts of the world, including in China, have led them to consider the adoption of EVs in line with their net-zero agenda. However, the pursuit of EVs within Gulf states and their ambitions for EV production and physical AI are constrained by considerably low market demand (as shown in Figure 3).

Adapted from: Statista Market Insights, "Electric Vehicles – United Arab Emirates"; Salma Saleh, "Volume of electric vehicle sales in the United Arab Emirates from 2017 to 2029 (in 1,000s)"; "UAE Electric Vehicle Market Size, Share and EV Demand"; "eMobility Outlook 2024," PwC; Santiago Castillo, Arvind CJ and Smriti Priya, "EV Charging Index: Expert insight from the GCC region."[29]

The UAE is the fastest growing market for EVs in the GCC region, followed by Saudi Arabia (Figure 3). The UAE's imports of EVs are driven by its pursuit of mobility AI, as it aims to obtain EVs and eVTOLs/UAMs (Urban Air Mobility) for air taxis, which are slated to begin commercial operations in 2025 in Abu Dhabi and Dubai.

Figure 3: GCC EV Sales Figures, 2022 and 2023



Ultimately, the UAE aims to connect EV's to the digital grid, enabling the realization of physical AI both on the ground and in the skies. American air taxi operators such as Archer, Joby Aviation (which acquired Uber's short-lived eVTOL venture, Uber Elevate) and China's Xpeng have already conducted pilot flights in the UAE, while South Korea's Hanhwa Aerospace is seeking market entry.[30] In other GCC states, EV market penetration by Chinese EVs is significantly slower. For instance, in Qatar, electric public buses operated by the local transportation brand Karwa are sourced from China's Yutong. BYD and Hyundai EV showrooms have opened in Doha, with Chinese ICE brands being showcased in malls. Qatar offers some free public electric charging stations, but the number of available charging stations is limited and insufficient to encourage the consumer.[31]

At the core, the main reason for the slow transition to EVs in the GCC lies in the difficulty of motivating consumer purchases, given the region's affordable oil and gas prices. In this regard, the dilemma for GCC states is in that the policy emphasis on GX with a transition to EVs in the Gulf is not very effective if the countries without significant incentives in the form of consumer subsidies/rebates, or through increases in the price of gasoline.[32] Such incentives, at a time of tariff wars elsewhere, may cause GCC markets to become dumping grounds for Chinese EVs.

Saudi Arabia has been most proactive to address industry policy dimensions for DX/GX among the Gulf states. The Kingdom's sovereign wealth fund—the Public Investment Fund (PIF)—has been striving to construct an indigenous auto industry. PIF began by becoming a major shareholder of Lucid Group (which is struggling in performance).[33] Saudi Arabia had the Lucid Group establish the first-ever EV plant in the country.[34] In building the Saudi EV brand CEER, it formed a JV with Apple's supplier Foxconn, ordering Level 3 ADAS systems powered by Nvidia in 2022.[35] PIF then sought to invest in China's EV company Human Horizons in 2023,[36] but the company announced bankruptcy in 2024 as the market consolidation in the Chinese EV market accelerated. Consequently, PIF signed an agreement with Hyundai Motors Group (HMG) of South Korea to establish an EV plant in Saudi

Arabia slated to open to produce its IONIQ models in the country, for which PIF will hold controlling interest (70%) and Hyundai the rest (30%).[37] This resulted in CEER striking a $2.18 billion agreement with Hyundai Transys (subsidiary of HMG) to supply EV driver systems (EDS: a motor for propulsion, an inverter, and a reduction gear).[38]

While CEER (Arabic for "drive forward") has plans to distribute EVs in MENA markets by 2025, strictly speaking, it is not a full-fledged EV company; rather, it is an assembly of Hyundai EV driving systems,[39] as well as Foxconn autonomous driving solutions.[40] Saudi Arabia has also invited Tesla to establish EV factories in the country,[41] hoping to roll out a supercharging network throughout the jurisdiction.[42] It remains to be seen whether Saudi Arabia's attempt to develop a local EV brand without indigenous technological development of its own will be sustainable.

The Missing Pieces in the Gulf in EVs and Batteries

The DX/GX drive has sparked an interest in EVs, batteries, and eVTOLs in the Gulf, but a clear path toward EVs in their deployment for GX and for future transportation (e.g., with the operation of metro systems in Dubai, Doha, and Riyadh) remains unclear. Moreover, the discussions on global market conditions, which entail tariff wars between the US, EU, and China — in addition to the market consolidation of EV and battery companies within China — which further propel the pursuit of overseas markets by Chinese auto companies, are absent in the Gulf. In terms of contextualization in trade and energy policymaking, it is striking that the impact of trade wars and industrial policy outside the Gulf — in addition to overproduction and market consolidation within China — go unmentioned when they are the underlying reasons for the growth of demand and manufacturing of EVs and batteries in the Gulf.

While importing, manufacturing, or operating EVs aligns with the Gulf states' own net-zero agendas, industrialization through EV factories faces challenges. Firstly, the factories may not create additional jobs, as automation rates for logistics and assembly continue to be increased. As a reference, the Hyundai Motors Group Innovation Center in Singapore (HMGICS), which produces Hyundai's IONIC 5 and IONIC 5 Robotaxi (ADAS level 4) models, has already reached an automation rate of 46% in the entire process of manufacturing,[43] which is three times the conveyor belt-based automation rate. The logistics automation rate at HMGICS is even higher at 65%,[44] backed by 250 robots from Boston Dynamics, which it acquired in 2021,[45] and will be elevated to 80% in the coming years.[46] It is unlikely that the EV plants to be built in Saudi Arabia would have a lower automation rate, which means that EV manufacturing is unlikely to lead to significant job creation in the Gulf.

Also missing is a clear roadmap for implementing transportation policies that prioritize EV safety, and future mobility AI strategies that incorporate EVs and UAMs. Furthermore, Gulf states need to set clear goals for the implementation of self-driving and safety standards relating to such strategies. If the Gulf states do choose to adopt self-driving to achieve DX/GX goals and mobility AI, then regulations for battery safety must be prioritized, as cases have proven them to be a major fire hazard (it is worth noting that the UAE and Saudi Arabia have begun their initial steps).[47] Other potential hazards, including battery disposal and recycling plans, should also be considered.

Additionally, the geopolitical dimensions of connected cars for mobility AI must not be overlooked. Before leaving office, the Biden administration issued an executive order to regulate connected cars from foreign producers, citing concerns over influence and national security threats that foreign-made cars could pose once integrated into the US grid.[48] The Trump Administration has not repealed this directive. Considering the role that EVs and eVTOLs will play on connected roads and skies within a seamless AI environment (contingent upon realization of level 5 in ADAS), the expansion of EVs in the Gulf should be approached with caution — especially in light of the geopolitical dimensions of the global EV market and intensifying competition for mobility AI.

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