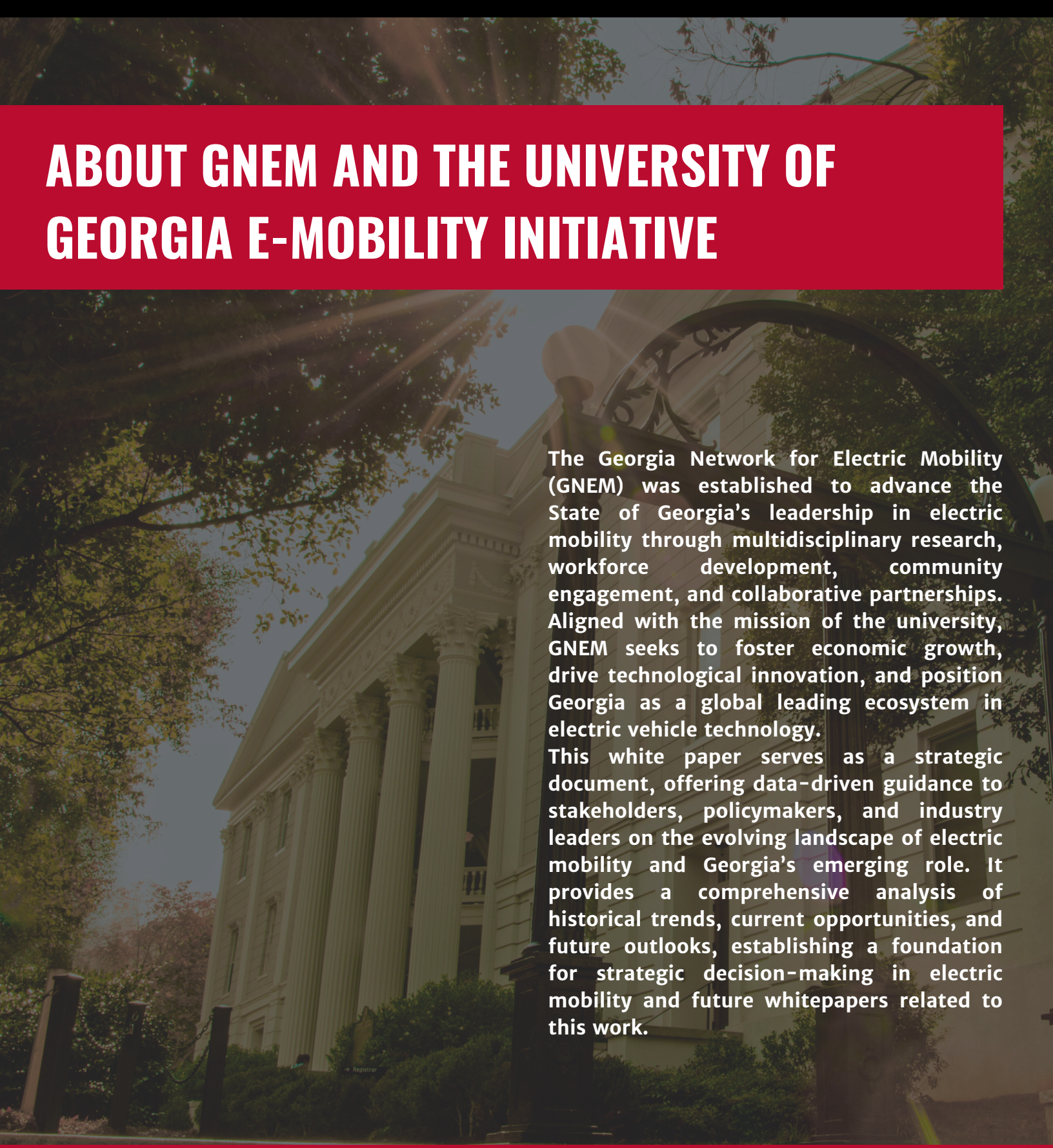
GEORGIA NETWORK *for* ELECTRIC MOBILITY

GEORGIA STATE OF E-MOBILITY 2025

DRIVING INNOVATION FORWARD IN A NEW GLOBAL PARADIGM

TABLE OF CONTENTS

ABOUT GNEM AND THE UNIVERSITY OF GEORGIA E-MOBILITY INITIATIVE



The Georgia Network for Electric Mobility (GNEM) was established to advance the State of Georgia's leadership in electric mobility through multidisciplinary research, workforce development, community engagement, and collaborative partnerships. Aligned with the mission of the university, GNEM seeks to foster economic growth, drive technological innovation, and position Georgia as a global leading ecosystem in electric vehicle technology.

This white paper serves as a strategic document, offering data-driven guidance to stakeholders, policymakers, and industry leaders on the evolving landscape of electric mobility and Georgia's emerging role. It provides a comprehensive analysis of historical trends, current opportunities, and future outlooks, establishing a foundation for strategic decision-making in electric mobility and future whitepapers related to this work.

GEORGIA NETWORK *for* ELECTRIC MOBILITY

EXECUTIVE SUMMARY

Electric mobility is rapidly reshaping the future of global transportation. Electric vehicle (EV) sales are expected to grow from 20% today to 50-65% of global automotive sales by 2030 [1].This rapid shift in adoption has left the global automotive industry at a critical juncture, spearheaded by new global automotive leaders and a new paradigm for global automotive companies.

U.S. domestic manufacturers—Ford, GM, and Stellantis—once longstanding global leaders, have been eclipsed by Japanese, European, and South Korean companies. Chinese EV manufacturers, most notably BYD, are close behind and rapidly gaining global market share. Even as Ford, GM, and Stellantis have expanded into EVs globally, these legacy manufacturers, largely based in Michigan, have struggled to remain profitable in the face of fierce global and domestic competition. In fact, automotive industry jobs in the state of Michigan have decreased by 38%, a loss of over 145,000 jobs in the past two decades [2].

Simultaneously, Georgia has emerged as a burgeoning hub for EV innovation and manufacturing, attracting new domestic players like Rivian; global giants like SK Battery, Hyundai, and Kia; startups like Envirospark and Archer Aviation; and innovative legacy manufacturers like Blue Bird Corporation. While agriculture and agribusiness remain Georgia's largest industries by economic impact, the state has strategically leveraged its business-friendly policies and complementary sectors, such as auto wholesaling and advanced manufacturing, to establish itself as a formidable contender in a new industry —electric mobility.

Georgia leads the nation in EV battery and vehicle manufacturing investments, totaling over $31 billion and creating over 38,000 jobs since 2015
—outpacing even Michigan by over $10 billion in investments over the same decade.

Georgia's proactive efforts to attract economic development at the bleeding edge of innovation and position itself as a potential future epicenter of the U.S. automotive industry are truly commendable. However, the state is not immune to the global threats and competitive pressures facing the broader U.S. domestic automotive market. To continue on this breakout path of new industry momentum, Georgia must strategically expand its electric mobility innovation and manufacturing ecosystem while addressing gaps in research and development, infrastructure, workforce development, and the supply chain.

THE DECLINE OF THE LEGACY U.S. AUTOMOTIVE INDUSTRY

Historical Context and Market Evolution

Throughout the 20th century, U.S. automakers, particularly the "Big Three"—General Motors (GM), Ford, and Chrysler (now Stellantis)—dominated global vehicle production and sales. However, since the 1973 oil crisis, the U.S. automotive industry has faced significant challenges, including fuel efficiency demands and increased competition from Japanese and European automakers, such as Toyota and Volkswagen.

The 2008 financial crisis further impacted the industry, leading to restructuring, consolidation, and federal bailouts. GM held the title of the world's largest automaker by annual vehicle sales for 77 consecutive years (1931–2008) until it was overtaken by Toyota amid the housing crisis and subsequent economic recession [4].

Today, American manufacturers like GM and Ford face stiff competition in key markets, particularly in China, where local brands are rapidly innovating and gaining popularity, impacting global sales and market share. The U.S. automotive industry was valued at $1.5 trillion in 2022 and is projected to reach $2 trillion by 2032, underscoring the continued significance of this sector within the national economy [5]. Despite this growth, the industry faces a transformative shift as electric vehicles (EVs) are expected to grow in global market share faster than the pace in the US market, constituting over half of the global automotive market by 2030 [6]. However, the U.S. EV market share remains uncertain due to a lack of consistent national policy, supply chain dependencies, and heightened international competition, particularly from Asia and Europe.

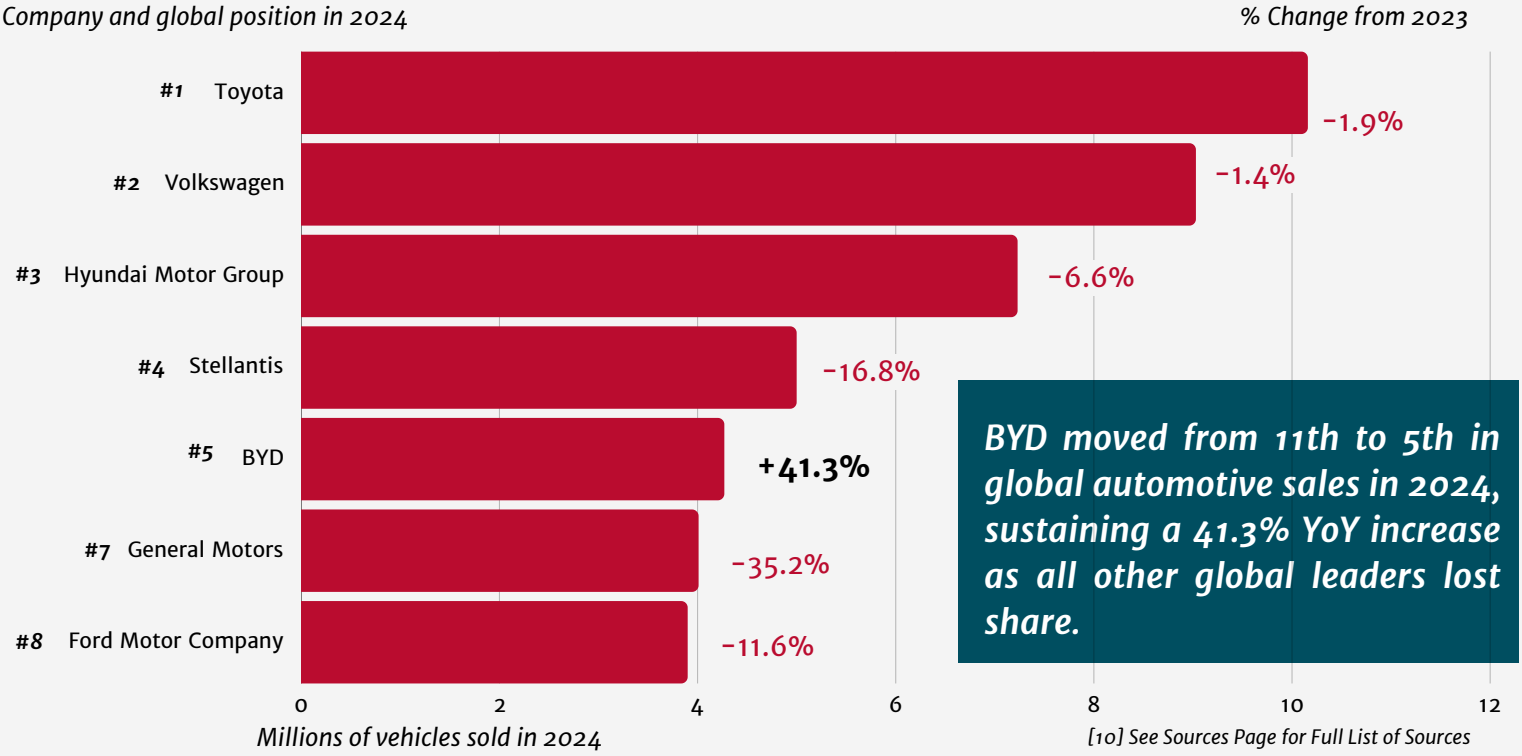
Global Competition and China's Strategic Ascendancy

From 1995 to 2015, China implemented a strategic initiative focusing on "New Energy Vehicles" (NEVs), including electric, hybrid, and hydrogen fuel cell vehicles. This decisive move fundamentally altered global automotive market dynamics. China invested over $2 billion in research and development and $15 billion in subsidies and incentives specifically targeting battery and EV manufacturing [7]. This strategy enabled rapid growth and technological leadership.

China's approach was exemplified by BYD, which evolved over the past 20 years from a battery manufacturer in 1995 to the world's leading new energy vehicle maker. In 2024, BYD reported record sales of 4.3 million vehicles. Of the total NEVs sold, 1.76 million were BEVs, representing a 12% growth compared to 2023 and outpacing Tesla sales globally for the first time [8]. Additionally, this increased production landed BYD a spot in the top 10 global automotive manufacturers for the first time in 2024, ending the year at 5th globally by sales. If BYD's current sales momentum continues, the company could sell over 6 million units in the next 12 months. This would place BYD on par with the world's leading automaker groups, such as General Motors and Stellantis, according to industry estimates [9].

If BYD's current sales momentum continues, the company could sell over 6 million units in the next 12 months, placing it on par with the world's leading automaker groups, such as Volkswagen, Hyundai Motor Group, and Stellantis.

GLOBAL AUTOMOTIVE MARKET SHARE AND SALES TRENDS



[10] See Sources Page for Full List of Sources

THE RISE OF GEORGIA AS A NEW GLOBAL EV ECOSYSTEM PLAYER

Detroit has historically been the heart of American automotive manufacturing, driven by the dominance of the "Big Three"—General Motors, Ford, and Stellantis/Chrysler. However, with the shift toward electric mobility, Georgia is positioning itself as a new U.S. epicenter for EV innovation, supported by strategic investments, a favorable business climate, and an integrated supply chain network that seamlessly connects to global markets. This transformation marks a significant geographic and economic shift within the U.S. automotive industry and reflects the evolving global paradigm in the sector.

Since 2015, the state has secured over $31 billion in EV-related investments, leading to the creation of approximately 38,700 jobs [11]. A significant portion of these investments has been announced since 2018. Notable developments include: Hyundai Motor Group's $7.6 billion Metaplant in Bryan County, which commenced production in October 2024 and is expected to employ 8,500 workers and Rivian Automotive's $5 billion manufacturing facility east of Atlanta, projected to produce up to 400,000 vehicles annually upon completion.

Collectively, these investments position Georgia to become a leading producer of electric vehicles in the United States, with an estimated production capacity of 700,000 to over 1M vehicles annually by 2030 [12].

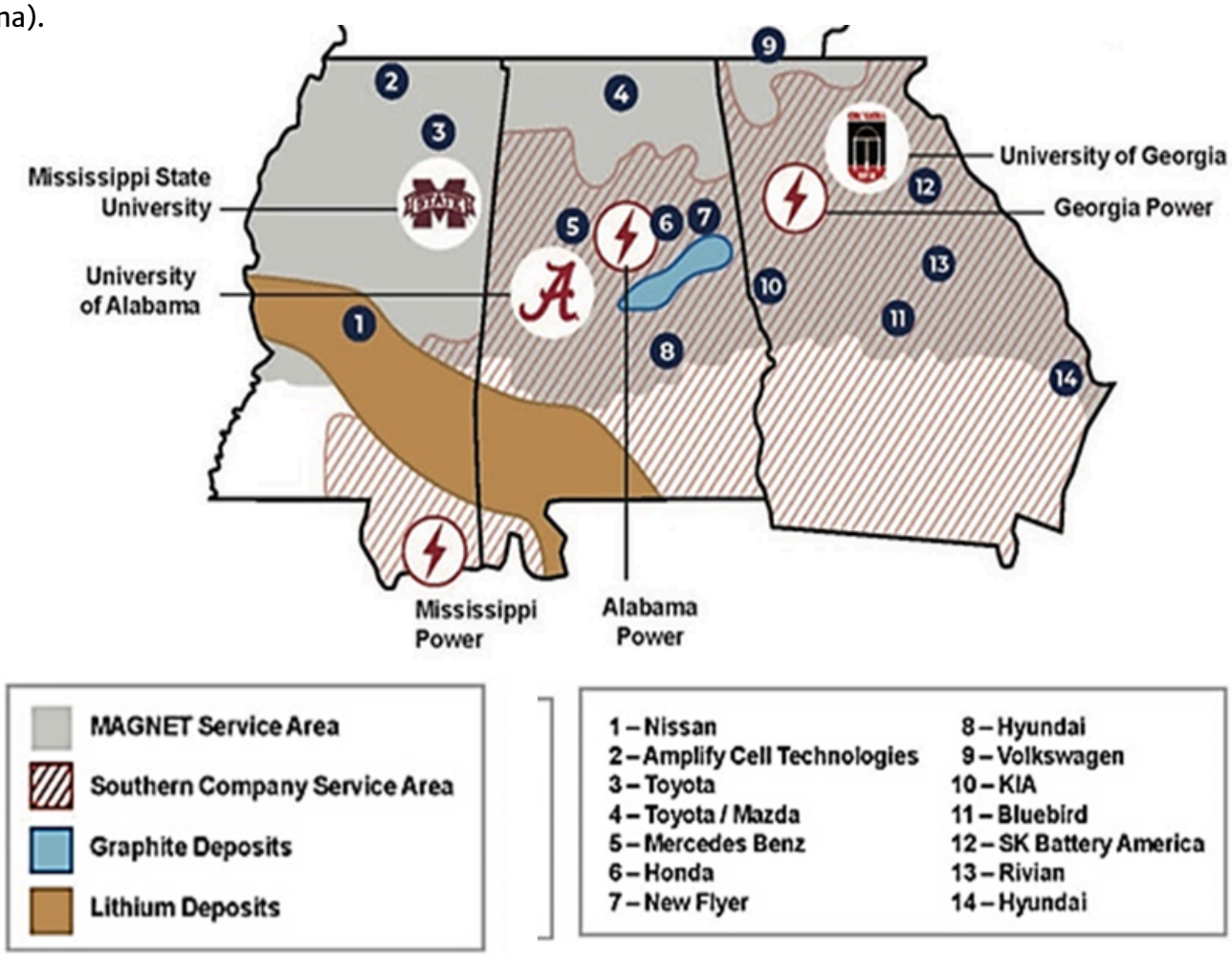
GEORGIA'S ROLE IN THE EMERGING "BATTERY BELT"

Strategic Location and Economic Growth

The Southeastern U.S., known as the "Battery Belt," has attracted over $90 billion in EV and battery manufacturing investments since 2022, creating approximately 70,000 jobs [13]. Georgia leads this growth, home to over 20-30% of these investments and over 40% of the jobs [14,15].

Georgia has rapidly emerged as a key national and regional player in the global EV industry, attracting substantial investments from international automotive manufacturers.

Key competitive advantages of the region include logistics, infrastructure, and resource availability including major ports such as Port of Savannah (Georgia), Port of Brunswick (Georgia), Port of Charleston (South Carolina), Port of Mobile (Alabama); and resource availability: Lithium (North Carolina, Mississippi, and Alabama), Graphite (Alabama).



The University of Georgia, in partnership with Southern Company, Mississippi State University, and University of Alabama, is in the process of forming a tri-state research hub to strengthen the electric mobility research and innovation ecosystem called MAGNET: Mississippi Alabama Georgia Network for Electric Transportation.

KEY REMAINING GAPS AND RISKS TO ADOPTION FOR GEORGIA AND BEYOND

Infrastructure Gaps: While Georgia is expanding its charging network, infrastructure gaps persist, particularly in rural areas. Addressing these gaps is critical to achieving widespread EV adoption.

Supply/Value Chain, Affordability, and Consumer Adoption: Supply chain dependencies and cost barriers remain challenges for the state's e-mobility sector. Increased local sourcing and strategic partnerships are needed to strengthen supply chain resilience.

Workforce Development and Policy Challenges: Workforce development and regulatory challenges—including zoning and utility regulations—pose barriers to rapid infrastructure deployment. Collaborative efforts are required to align policies and streamline development processes.

The Increasing Threat of Global Competition: The race for future mobility and the new energy vehicle market is rapidly being won by China, most notably due to BYD's rapid production acceleration and global expansion. To remain competitive, Georgia needs to continue supporting good jobs in e-mobility through homegrown research and development, workforce development, and domestic verticalized supply chain structures, similar to what China has built behind its EV ecosystem of companies.

Deep dives quantifying the potential economic impact of these risks, as well as measures needed to close some of these gaps will be explored further in future whitepapers and reports.

CONCLUSION: A STRATEGIC VISION FOR THE FUTURE

Georgia has established itself as a potential global leader in the electric mobility revolution. Georgia's strategic positioning in the Southeastern United States, coupled with its world-class logistics infrastructure—including major ports and interstate networks—affords it a competitive advantage in EV manufacturing and distribution. Additionally, the state's expanding power grid capacity supports the demands of large-scale EV production. As a leading think tank and public-private consortium dedicated to advancing electric mobility, GNEM seeks to provide leading-edge discourse and perspectives, support and amplify cutting-edge e-mobility research from the University of Georgia and around the state, and facilitate strategic collaborations on workforce development, community engagement and beyond. We look forward to supporting Georgia's electric mobility and economic development ecosystem on this mission-critical endeavor.

For more information on how your company and/or organization can collaborate with the GNEM Team, contact us at

EMOBILITY.UGA.EDU

PARTNER WITH US

ALTON STANDIFER
E-Mobility Executive Council Chair

ASHER DOZIER
E-mobility Community Engagement Lead

GABY PIERRE
Strategy Lead

KELLEY SAUSSY
Interim Coordinator

BJORN BIRGISSON
Executive Director

SOURCES

1. International Energy Agency. (2024). Global EV Outlook 2024: Trends in electric cars. Retrieved from https://www.iea.org/reports/global-ev-outlook-2024/trends-in-electric-cars
2. Mackinac Center for Public Policy. (2024). A generation of subsidies hasn't created auto jobs in Michigan. Retrieved from https://www.mackinac.org/blog/2024/a-generation-of-subsidies-hasnt-created-auto-jobs-in-michigan
3. Environmental Defense Fund. (2024). U.S. Electric Vehicle Manufacturing Investments and Jobs: Characterizing the Impacts of the Inflation Reduction Act after 18 Months. Retrieved from https://www.edf.org/sites/default/files/2024-03/EDF_US_EV_Manufacturing_Investments_Spring2024.pdf.
4. History.com. (2009). Toyota officially passes GM as planet's biggest car maker. Retrieved from https://www.history.com/this-day-in-history/toyota-officially-passes-gm-as-planets-biggest-car-maker.
5. Market Research Future. (2023). U.S. automotive industry market size report 2023–2032. Retrieved from https://www.marketresearchfuture.com/reports/us-automotive-industry-market-12674
6. International Energy Agency. (2024). Global EV Outlook 2024: Trends in electric cars. Retrieved from https://www.iea.org/reports/global-ev-outlook-2024/trends-in-electric-cars
7. Environmental Defense Fund (EDF). (2023). Electric vehicle batteries are really good, and they're getting even better. Retrieved from https://vitalsigns.edf.org/story/electric-vehicle-batteries-are-really-good-and-theyre-getting-even-better
8. Reuters. (2024). BYD on track to top 2024 sales goal and outsell Ford, Honda. Retrieved from https://www.reuters.com/business/autos-transportation/byd-track-top-2024-sales-goal-outsell-ford-honda-2024-12-09/reuters.com
9. CNEV Post. (2025). BYD sells record 514,809 NEVs in Dec, full year 2024 sales reach 4.27 million. Retrieved from https://cnevpost.com/2025/01/01/byd-sales-dec-2024/wsj.com+3cnevpost.com+3en.wikipedia.org+3
10. —Exhibit sources:
    a. Statista. (2023). Leading car manufacturers by sales 2023. Retrieved from https://www.statista.com/statistics/1419835/leading-car-manufacturers-by-cumulative-sales/
    b. Focus2Move. (2024). World Best Car Manufacturer 2024: The Top 30 Groups Ranking. Retrieved from https://www.focus2move.com/world-car-group-ranking/
    c. Luxe Digital. (2024). 25 Largest Car Companies in the World (Ranked By Sales). Retrieved from https://luxe.digital/lifestyle/garage/largest-car-companies/
    d. Financial Times. (2024). Tesla, BYD, and a two-speed global transition. Retrieved from https://www.ft.com/content/517a09d8-386e-4ac2-9eae-bd4e85405094
    e. S&P Global Mobility. (2023). S&P Global Mobility forecasts 88.3M auto sales in 2024. Retrieved from https://www.spglobal.com/mobility/en/research-analysis/sp-global-mobility-forecasts-883m-auto-sales-in-2024.html
    f. Statista. (2024). Automotive industry worldwide - statistics & facts. Retrieved from https://www.statista.com/topics/1487/automotive-industry/
    g. Best Selling Cars. (2024). 2024 (Q3) International: Global Worldwide Car Sales. Retrieved from https://www.best-selling-cars.com/global/2024-q3-international-global-worldwide-car-sales/
    h. RoadGenius. (2023). Worldwide Car Sales | Top-Selling Manufacturers 2023 & 2024. Retrieved from https://roadgenius.com/cars/statistics/sales-by-manufacturer/
11. Environmental Defense Fund. (2024). U.S. Electric Vehicle Manufacturing Investments and Jobs: Characterizing the Impacts of the Inflation Reduction Act after 18 Months. Retrieved from https://www.edf.org/sites/default/files/2024-03/EDF_US_EV_Manufacturing_Investments_Spring2024.pdf.
12. Multiple Sources:
    a. Hyundai News. (2024). Hyundai Motor Group Metaplant America Announces First Supplier. Retrieved from https://www.hyundainews.com/en-us/releases/4174hyundainews.com
    b. Investment Monitor. (2023). Hyundai and LG to invest $2bn in Georgia EV battery plant. Retrieved from https://www.investmentmonitor.ai/news/hyundai-lg-invest-georgia-ev-battery-plant/investmentmonitor.ai+1investopedia.com+1
    c. Georgia Department of Economic Development. (2022). Hyundai Motor Group to Invest $5.54 Billion in Georgia at First Fully Dedicated Electric Vehicle and Battery Manufacturing Facility. Retrieved from https://georgia.org/press-release/hyundai-motor-group-invest-554-billion-georgia-first-fully-dedicated-electric-vehicleg
13. CBS News. (2024). EV battery manufacturing energizes Southern communities as the 'Battery Belt' grows. Retrieved from https://www.cbsnews.com/news/ev-battery-manufacturing-energizes-southern-communities-battery-belt/
14. Electrification Coalition. (2024). State EV Policy: Georgia. Retrieved from https://electrificationcoalition.org/work/state-ev-policy/georgia/
15. **GovTech.** (2024). *Despite bumps, Georgia has become a growing EV hub.* Retrieved from https://www.govtech.com/transportation/despite-bumps-georgia-has-become-a-growing-ev-hub