TRANSPORTATION ELECTRIFICATION IN THE SOUTHEAST

FOURTH ANNUAL REPORT

ATLAS PUBLIC POLICY

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ABOUT ATLAS PUBLIC POLICY

Atlas Public Policy equips businesses and policymakers to make strategic, informed decisions that serve the public interest. Atlas builds analytical tools and dashboards using powerful, accessible technology, and offers expert advisory services to tackle the pressing issues of the day.

ABOUT SOUTHERN ALLIANCE FOR CLEAN ENERGY

The Southern Alliance for Clean Energy is a nonprofit organization that promotes responsible and equitable energy choices to ensure clean, safe and healthy communities throughout the Southeast. As a leading voice for energy policy in our region, SACE is focused on transforming the way we produce and consume energy in the Southeast.

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EXECUTIVE SUMMARY

SALES

New EV sales in the Southeast continue to reach new highs. In Q2 2023, 6.2 percent of all new light-duty vehicles sold were EVs, up from 5 percent 12 months ago. There was considerable range in the region as Georgia, Florida, and North Carolina all saw market share above 7 percent, while Alabama trailed all states with 2.5 percent market share.

MANUFACTURING EMPLOYMENT AND INVESTMENT

The Southeast will be a leading hub for EV manufacturing with more than 60,000 announced jobs. That means that more than a third of all announced EV manufacturing jobs will go to the region. Georgia leads all states in the country for announced EV manufacturing jobs.

UTILITIES

While utilities represent an important source of funding for the EV transition, Southeast utilities significantly trail the national total of $75 invested in transportation electrification per customer. The region makes up 18 percent of the population but just 7 percent of all approved investments nationally. The approved funding is expected to support the deployment of more than 500 direct current fast charging (DCFC) stations and more than 4,000 Level 2 stations.

CHARGING DEPLOYMENT

In the past 12 months, the Southeast saw continued progress in the deployment of EV chargers, adding more than 1,600 new DCFC ports, a 60 percent increase year over year. Tennessee saw the highest relative growth with an 85 percent increase in its DCFC network.

PUBLIC FUNDING

All Southeast states trail the national average for public funding. Very little state funding has supported EVs in the region, though states continue to use funds from the VW Settlement and federal programs, particularly NEVI and the Clean School Bus program, to deploy more EVs and chargers.

PUBLIC POLICY

Legislators have introduced policies intended to foster the uptake of EVs or require the build out of charging infrastructure, however, these policies have often not passed. The policy environment in some cases also may inhibit the uptake of EVs. In Florida, the Governor vetoed a total cost of ownership bill that would have allowed greater uptake of EVs for public fleets, and the Southeast—particularly Georgia and Alabama—has some of the highest annual EV fees in the U.S.

ABOUT THE DATA

Data used to develop this report is derived from the Atlas EV Hub: www.atlasevhub.com, which tracks the metrics described below. Where data is not derived from EV Hub, the source is noted. The data included in this report is current through June 2023, except for population.

EV MANUFACTURING EMPLOYMENT AND INVESTMENT measures the number of direct manufacturing jobs and investment supported by light, medium and heavy-duty EV, EV battery production, EV battery recycling, and EV charging manufacturing. For the first time, this year's report also includes EV parts manufacturing. This figure is tied to specific facilities and is typically reported directly by companies in public statements.

EV SALES are sourced from light-duty passenger EV sales provided by IHS Markit (2019-present) and the former Alliance for Automobile Manufacturers (2011-2018). Aggregated EV sales data for all states are provided by vehicle make and model since 2019 and include light-duty battery EVs (BEV) and plug-in hybrid EVs (PHEV). Sales data includes new vehicle sales only.

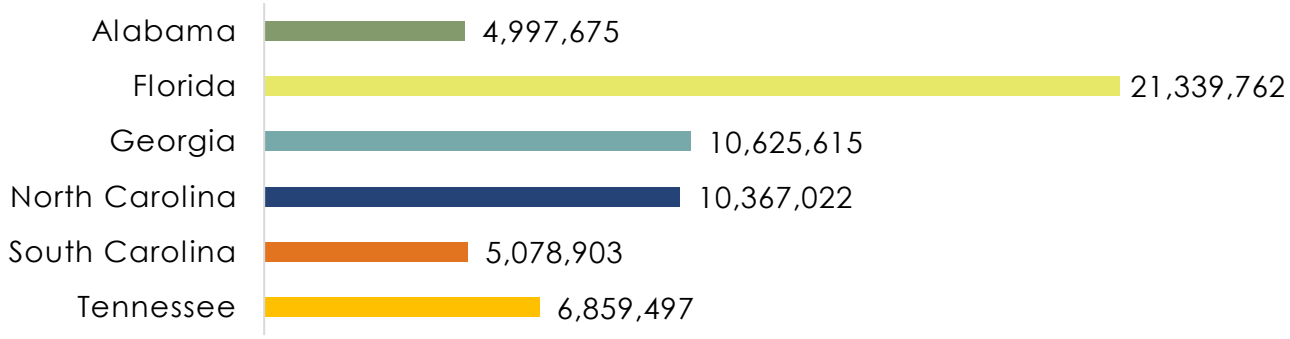
ELECTRIC UTILITY INVESTMENT tracks EV-related investments and is sourced from investor-owned electric utility dockets filed with state utility regulatory commissions. The investment data includes both EV programs proposed by utilities that await commission approval as well as investments approved or denied by commission orders. Data does not include investments from electric cooperatives and municipally-owned utilities.

PUBLIC FUNDING FOR EVS tracks federal and state government funding programs dedicated to transportation electrification including funding allocated through the Volkswagen Settlement. The data in this report is current through June 2023.

EV CHARGING DEPLOYMENT tracks all deployed publicly available EV charging infrastructure and is sourced from the U.S. Department of Energy's Alternative Fueling Station Locator. Charging equipment may have multiple connectors (plugs), however, Atlas does not count those connectors as separate ports unless both are able to supply power to a vehicle at the same time.

POPULATION DATA is sourced from the U.S. Census Bureau's American Community Survey (ACS). The most recent data has been gathered from the five-year ACS 2021 data file, so current population numbers reflect the year 2021. This data is used to calculate per capita metrics. Current estimates for state populations may differ from what are used in this report.

FIGURE 1: POPULATION BY STATE IN 2021



Source: (U.S. Census Bureau, 2023)

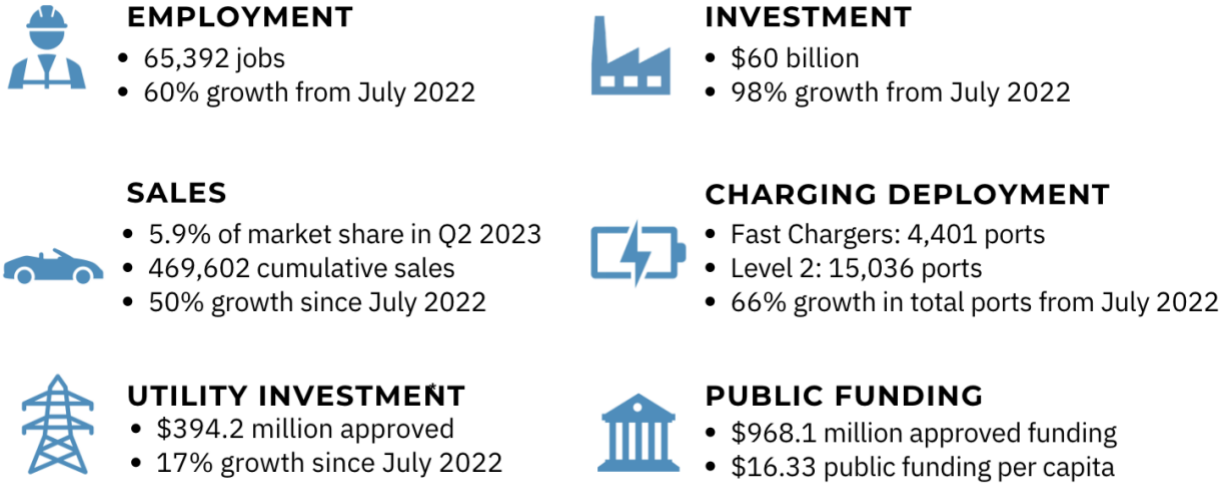
INTRODUCTION

Since September 2020, Atlas Public Policy (Atlas) has partnered with the Southern Alliance for Clean Energy (SACE) to publish the annual *Transportation Electrification in the Southeast* report. This report benchmarks progress on transportation electrification in six states in the Southeast: Alabama, Florida, Georgia, North Carolina, South Carolina, and Tennessee. This is our fourth annual report and provides an update on progress from July 2022 through June 2023.

A transition to electric transportation is underway across the country and with good policy design and implementation, may deliver emissions reductions resulting in improved public health along with jobs and economic development opportunities. Public policy must ensure the electric grid continues to decarbonize to maximize the environmental benefits of EVs and that economic development is able to not only create new jobs but also ensure the existing workforce can transition. Analysis from SACE estimated that 23 percent of every dollar spent on gas and diesel remains in-region (Heather Pohnan, 2023). But when electricity is purchased to power vehicle travel instead, SACE estimated 71 percent of every dollar spent to charge EVs is retained, which can strengthen state economies and potentially save consumers money. There is also the potential for the amelioration of environmental injustices, but achieving those outcomes will require authentic engagement with impacted communities to understand and address their needs and priorities and monitoring of the distribution of benefits and investment impacts as the transition unfolds over the decade. The extent to which all of these benefits accrue to people across the Southeast depends on access to electric vehicles (EVs) and charging infrastructure in the region.

In the past two years, Congress passed the Bipartisan Infrastructure Law and the Inflation Reduction Act (IRA), unlocking substantial funding for transportation electrification via grants, loans, and consumer and manufacturer tax credits. At the time of publication, Southeast states tracked in this report should have submitted their second-year plans for the National Electric Vehicle Infrastructure (NEVI) Formula Program, which will invest $5 billion in public EV charging. States have also had the opportunity to compete for the first round of the $2.5 billion Charging and Fueling Infrastructure (CFI) Grant Program to support EV charging station deployment in communities outside the scope of the NEVI program.

FIGURE 2: SOUTHEAST EV INDICATORS THROUGH JUNE 2023



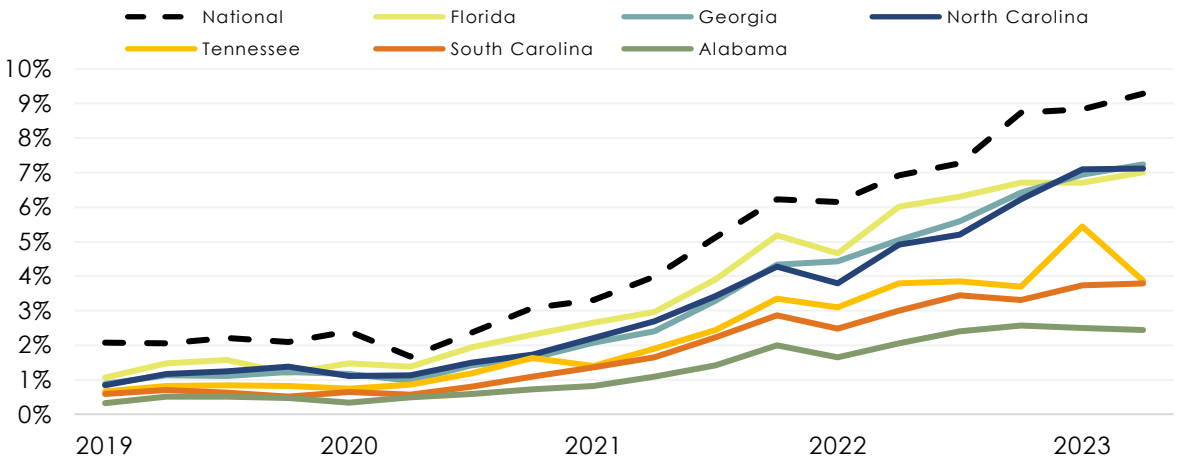
All measures include medium- and heavy-duty EVs, except for sales which refers exclusively to new passenger EVs. EV sales includes both battery EVs (BEV) and Plug-in Hybrid EVs (PHEV). Manufacturing Employment and Investment refers to EV assembly, EV parts, EV charging infrastructure, battery manufacturing, and battery recycling facilities. Utility Investment refers to investor-owned utilities only. Totals are cumulative unless stated. Public funding is mostly from federal government or the VW Settlement. Data is through June 2023 and growth is taken from July 1, 2022, to June 30, 2023. Source: Atlas EV Hub

While the Southeast is seeing strong growth across key EV measures, the region continues to lag behind the national average in EV adoption and charging infrastructure investment. The challenge moving forward is to ensure that state policies, electric utility regulations, unprecedented federal investments, and other public and private sector investments foster a thriving EV market that supports manufacturer and supply chain expansion, ensures consumers have equitable access to EV charging and vehicle ownership, and enables light, medium- and heavy-duty fleet operators to electrify.

EV SALES AND MARKET SHARE TRENDS

The light-duty EV market continues to grow apace in the Southeast. In Q2 2023, light-duty EV market share in the Southeast was 6.2 percent, up from 5 percent in Q2 2022. The region still trails the national market where EVs made up nearly 9.3 percent of all light-duty sales in Q2 2023, up from 7 percent in Q2 2022. Cumulative new EV sales in the Southeast grew 50 percent over the preceding 12 months, from 312,316 vehicles to 469,602 vehicles. Georgia led the Southeast with 7.2 percent EV market share in Q2 2023, followed by North Carolina and Florida with 7.1 percent and 7 percent (see Figure 3).

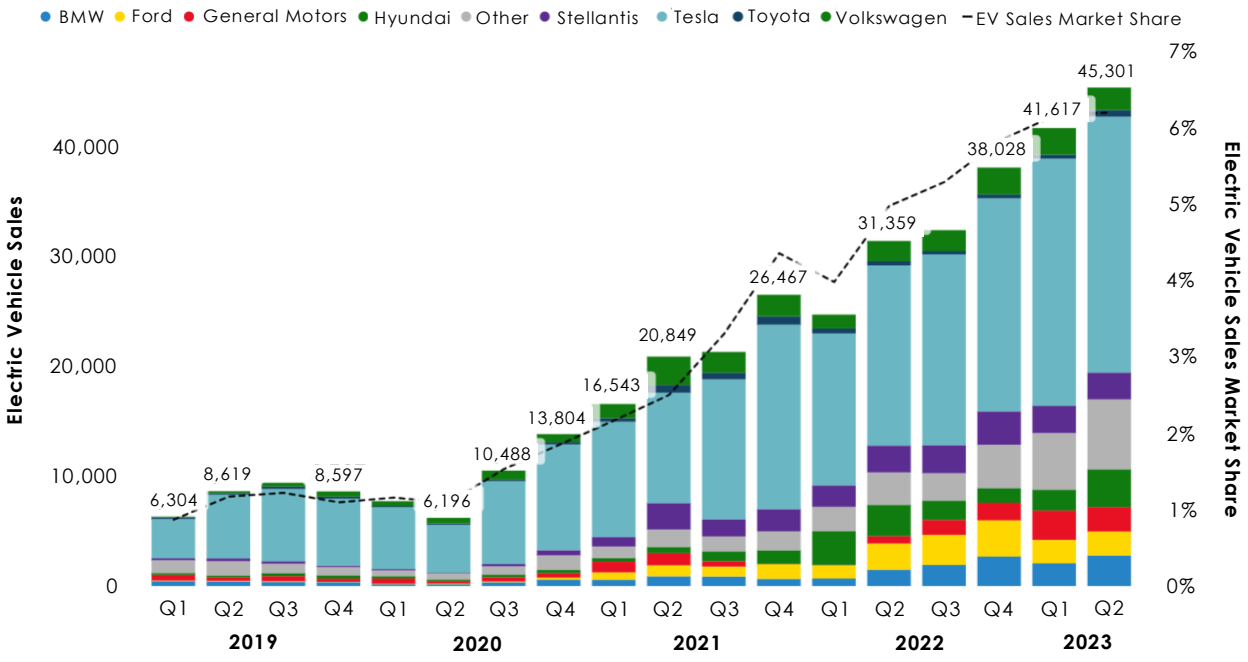
FIGURE 3: U.S. NEW EV LIGHT-DUTY VEHICLE MARKET SHARE SALES THROUGH JUNE 2023



This figure depicts EV sales as a percentage of new light-duty vehicle sales from 2019 to the end of June 2023. EV includes both BEV and PHEV sales. The jump in new EV sales in Tennessee in Q1 of 2023 is an outlier for unknown reasons.

Tesla remains the dominant EV automaker in the region capturing 53 percent of EV sales in the first six months of 2023. Hyundai trails Tesla in 2023 as the second best-selling EV automaker in the Southeast. Besides the popular Tesla Model Y and Model 3, the Chevy Bolt EV fared well with the third highest sales amongst all available makes and models, and both the Ford Mustang Mach-E and F-150 Lightning were in the top five non-Tesla EV sales by quantity in the past 12 months. See Figure 4 for a breakdown of the leading automakers in the EV market in the Southeast.

FIGURE 4: NEW LIGHT DUTY EV SALES IN THE SOUTHEAST FROM JANUARY 2019 TO JUNE 2023



This figure depicts new light-duty EV sales over time in the Southeast through the end of June 2023. The EV share line depicts the share of EV sales compared to all new light-duty vehicle sales.

The vehicle sales data in this report are for new vehicle sales only, and it is worth noting that most vehicle transactions are in the secondary market (Bureau of Transportation Statistics, n.d.). The IRA created a tax credit for used clean vehicles that may spur greater demand in this important segment. Eligible used EVs (including PHEVs) can qualify for up to $4,000 in federal tax credits.

MANUFACTURING EMPLOYMENT AND INVESTMENT

The Southeast will see significant growth in EV manufacturing jobs and investment over the coming years. Indeed, 35 percent of all announced EV manufacturing jobs and 40 percent of all announced manufacturing investment (counting battery production and recycling, EV charging, EV assembly jobs and other EV component manufacturing) announced before June 2023, were in the Southeast (see Figure 5).

FIGURE 5: ANNOUNCED EV MANUFACTURING JOBS BY STATE

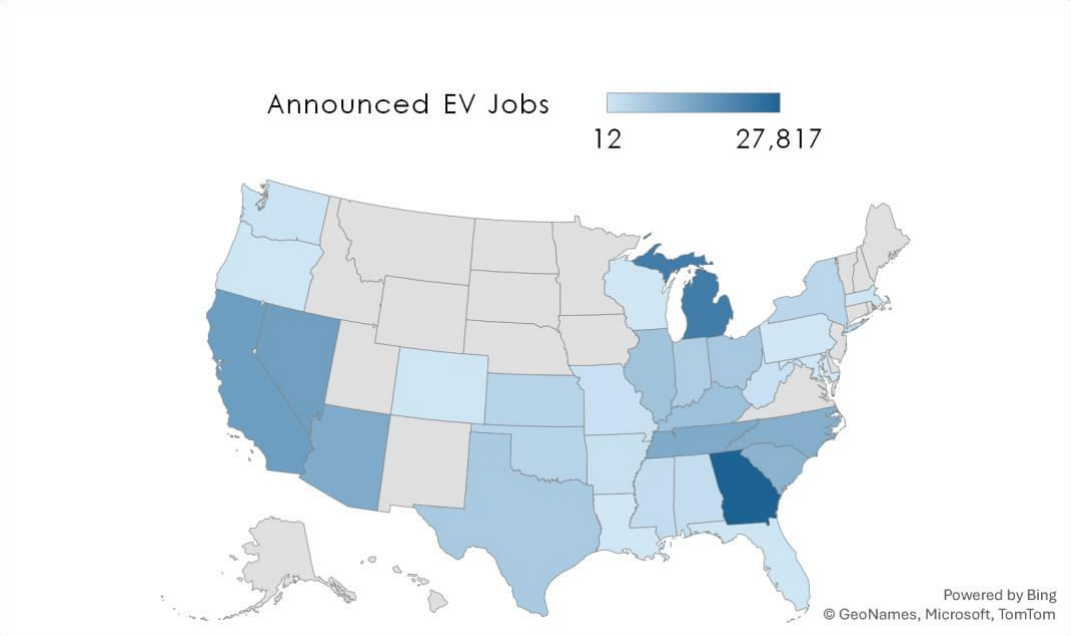


TABLE 1: ANNOUNCED EV MANUFACTURING JOBS BY STATE

State	Announced EV Jobs
Florida	314
Alabama	2,058
South Carolina	10,611
North Carolina	11,723
Tennessee	12,719
Georgia	27,817
Southeast Total	**65,242**

The map and table above show announced EV manufacturing jobs (including EV assembly, battery manufacturing and recycling, EV charging manufacturing, and other EV component manufacturing) by state through June 2023. Previous iterations of this report did not account for investment in EV component manufacturing.

EV manufacturing job growth continues to be strong in the region. Georgia leads the nation in anticipated EV manufacturing jobs and the Southeast accounts for four of the top eight states in the country for most anticipated EV jobs—Georgia, Tennessee, North Carolina, then South Carolina. Anticipated EV manufacturing jobs in the Southeast have grown 60 percent over the past 12 months and investment has grown 98 percent. Table 2 summarizes the largest EV manufacturing investments in the region, four of which were announced over the past 12 months. It is important to note that these investments may not eventuate or may look very different from the original announcement.

After North Carolina landed its first battery and vehicle manufacturing investments from Toyota and VinFast in 2022, Toyota significantly increased its investment to $5.9 billion in two separate expansion announcements in August of 2022 and May of 2023. The Toyota battery manufacturing facility is expected to generate 2,100 jobs and will come online in 2025.

Hyundai has also been busy in its joint venture (JV) investments in the Southeast this past year, both located in Georgia. Its $4 billion investment with SK On in Bartow County was announced in December 2022 and promises to bring more than 3,500 jobs to the area to supply EV batteries for its plants across the United States. Hyundai also signed a Memorandum of Understanding for a JV EV Battery Manufacturing Facility with LG Energy Solution in May 2023. The facility, to be constructed adjacent to the $2.54 billion Hyundai Metaplant America, will have the capacity to produce batteries for 300,000 vehicles annually. Hyundai's investments in Georgia also bring additional jobs for the production of parts and other components to be used in vehicle assembly at the Hyundai Metaplant. Since its announcement in 2022, at least 10 different suppliers have announced EV investments and jobs to help supply the auto plant, adding more than an additional $1 billion in total investments. In the past 12 months, multiple new EV charger manufacturing and battery recycling facilities have been announced in the Southeast, promising nearly 1,800 jobs.

One factor in the growth of EV jobs in the Southeast is the significant economic incentive packages offered by state and local governments. Georgia has awarded the largest subsidy packages for EV manufacturers ($3.9 billion), and Hyundai and Rivian together received around $3.3 billion in pledged subsidies (Bynum, 2022). Another notable subsidy package was South Carolina's $1.3 billion offer to Scout Motors for a manufacturing plant to produce 200,000 electric trucks and SUVs annually (Shepardson, 2023). And in a move to become the first automaker to locate production in North Carolina, VinFast was awarded the highest subsidy package in state history, totaling $1.25 billion to build the Chatham County plant (VinFast, 2022).

TABLE 2: LARGEST EV MANUFACTURING ANNOUNCEMENTS BY INVESTMENT IN THE SOUTHEAST

State	Company	Facility Name	Anticipated Jobs	Announced Investment	Dates Announced
North Carolina	Toyota	Toyota Battery Manufacturing Facility	2,100	$5.9 billion	12/6/2021, 8/31/2022, 5/31/2023
Tennessee	Ford, SK On	BlueOval SK	5,800	$5.6 billion	9/27/2021
Georgia	Rivian	Georgia Facility	7,500	$5 billion	12/16/2021
Georgia	Hyundai, LG Energy Solution	EV Battery Cell Manufacturing Facility (JV)	3,000	$4.3 billion	5/26/2023
Georgia	Hyundai, SK On	Bartow County Facility (JV)	3,500	$4 billion	12/8/2022
North Carolina	VinFast	Chatham County Facility	7,500	$4 billion	3/29/2022

Multiple dates indicate successive announcements for the same facility. Companies may not necessarily deliver these jobs and there is often little clarity on the types and quality of jobs available. It is also worth noting that this counts EV manufacturing jobs only and so data does not reflect corporate or research and development jobs.

The Southeast is also a desirable region for manufacturing expansion because it has ample large parcels of inexpensive land, along with low industrial electricity rates and other utility costs (Paula Gardner, 2021) (Shepardson, 2021). Other reasons for the significant growth across the Southeast may include all six states' right-to-work status, lower labor costs, proximity to other production sites and two of the nation's largest ports in Savannah and Charleston, and access to major transportation corridors across the region.

UTILITY INVESTMENT

Investor-owned utilities (IOUs) are crucial enablers of transportation electrification by being the primary supplier of energy, managing the electrical grid, and investing in all or parts of electrical infrastructure that serves EV charging. IOUs are regulated monopolies that serve more than 70 percent of electricity customers in the United States (Energy Information Administration, 2019). This summary focuses only on investor-owned utilities and does not include investments from other providers like cooperatives, municipally owned utilities, or the Tennessee Valley Authority (TVA).

Through June 2023, investor-owned utilities nationwide have been approved for $5.8 billion in transportation electrification investments, an increase of 56 percent in approved utility investment since June 2022, largely from approved programs in California, Illinois, and Massachusetts. An additional $1.5 billion in investments were awaiting approval from state utility commissions as of June 2023. The Southeast represents just 7 percent of all approved investments, with $394 million approved by the region's regulators. The funding approved to date is expected to support the deployment of more than 500 direct current fast charging (DCFC) stations and more than 4,000 Level 2 stations. Florida utilities lead with $278.2 million in approved investments followed by Georgia with $82.5 million, North Carolina with $24.7 million, and South Carolina with $8.8 million.

In the past 12 months, there has only been a single utility commission approval in the region. On December 20, 2022, the Georgia Public Service Commission approved Georgia Power's combined three-year budget of $58.5 million, which is the utility's largest EV investment to date. This budget enables Georgia Power to support two EV programs, one to fund make-ready infrastructure for public sites and public fleets ($52.65 million), and another to own and operate community charging stations in rural and income-qualified areas ($5.85 million). Georgia Power will install up to 33 community DCFC chargers over three years. Meanwhile, Alabama Power announced in March 2023 that they will be offering a $500 rebate to EV-owning customers who install Level 2 charging stations at their homes, in addition to existing discounted overnight charging rates (Crocker, 2023).

Drilling down into equity, the Southeast has seen low levels of identified equity-focused investments in transportation electrification from investor-owned utilities. From July 1, 2022, through June 2023, around $6 million in the region was approved for underserved communities or 10 percent of all approved investments within the past 12 months. For reference over the same period, 54 percent of utility transportation electrification filings were classified as equity investments nationally—though most of those investments were concentrated in California, Illinois, and Massachusetts.

Investment by utilities on a per customer basis makes it easier to compare across utility territories to evaluate utilities' commitment and regulators' willingness to rate-base transportation electrification investments. Nationally, the average was $75 in approved investment per utility customer, with the highest per capita investment in California, Massachusetts, and Nevada. All utilities in the Southeast were considerably lower than the national average. See Table 3 for a summary of investor-owned utility investments in the Southeast through June 2023.

TABLE 3: INVESTOR-OWNED UTILITY INVESTMENTS IN THE SOUTHEAST THROUGH JUNE 2023

Operating Company	State	Investment	Customers	Investment per Customer
Florida Power & Light	Florida	$205,000,000	5,061,483	$41
Duke Energy	Florida	$70,900,000	1,832,871	$39
Georgia Power Company	Georgia	$82,500,000	2,572,624	$32
Duke Energy	South Carolina	$8,830,000	830,000	$11
Duke Energy	North Carolina	$24,714,675	3,700,000	$7
Tampa Electric	Florida	$2,300,000	771,959	$3
U.S. Total		**$5,822,437,748**	**77,551,140**	**$75**

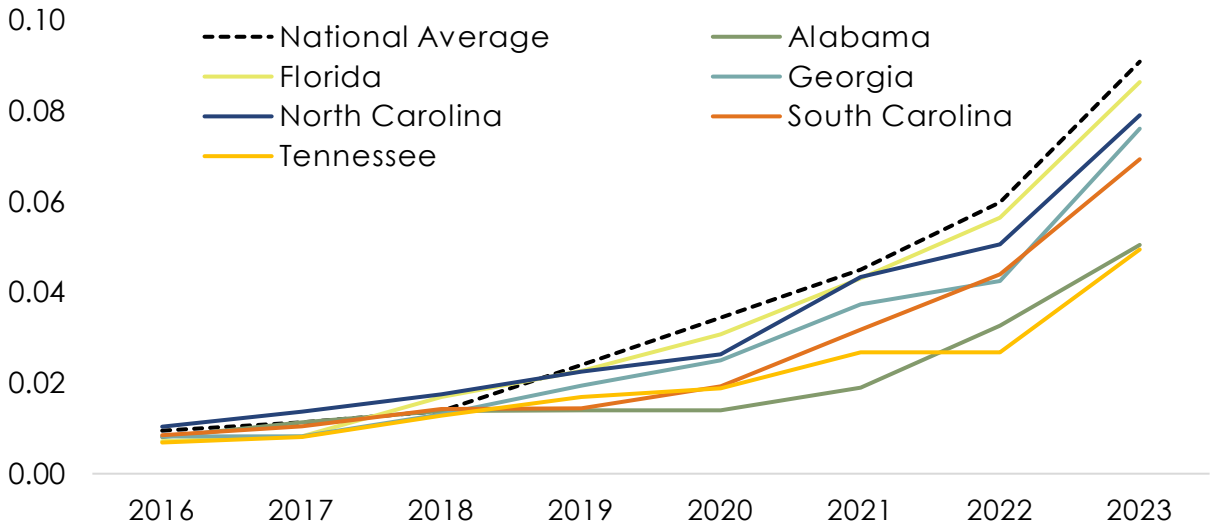
"Investment" refers to funding in transportation electrification from investor-owned utilities approved by state commissions. "Investment per Customer" refers to the total utility investment divided by the number of customers from all sectors. For the "U.S. Total" figure, the total investment is divided by the number of customers served by utilities that have announced investments in transportation electrification. Duke Energy customer data in North and South Carolina was drawn from a Duke Energy fact sheet as of April 1, 2023 (Duke Energy, 2023). Alabama Power is not included here as the company's EV programs were not submitted to a public utility commission.

Utility investments in transportation electrification help ensure that drivers and fleet operators have access to charging that is needed to allow for greater EV adoption. Additionally, investments in make-ready programs, managed charging, and other supportive EV rate designs can significantly reduce the cost of charging station installations and EV ownership while ensuring the electricity grid can meet the demands of an expanding EV market. There are examples of such programs in the Southeast, most notably Duke Energy North Carolina's Charger Prep Program and Florida Power and Light's Demand Charge Limiter Pilot (Duke Energy, 2023) (Florida Power and Light, 2020).

CHARGING DEPLOYMENT

In the past 12 months, the Southeast saw continued progress in the deployment of EV chargers adding more than 1,600 new DCFC ports, a 60 percent increase year over year. Florida continues to lead the Southeast with the most DCFC ports per capita, adding 634 new DCFC ports as of June 2023. Tennessee saw the highest relative growth, an 85 percent increase in its DCFC network (see Figure 6).

FIGURE 6: CUMULATIVE DCFC PORTS PER 1,000 PEOPLE THROUGH JUNE 2023



This figure depicts the steep rise in cumulative DCFC ports per 1,000 people installed across states in the Southeast from 2010 through June 2023 when compared with the national average. The figure only accounts for stations still active today, by installation date. Stations that are no longer active are not displayed.

The region also saw considerable growth in Level 2 charging, with states increasing the number of publicly available Level 2 ports by nearly 69 percent year over year. The region now boasts 0.33 ports (both Level 2 and DCFC) per 1,000 people, still trailing the national average of 0.46 (see Table 4).

TABLE 4: CHARGING PORTS IN THE SOUTHEAST THROUGH JUNE 2023

State	DCFC Ports (% Change YOY)	Level 2 Ports (% Change YOY)	Total Ports per 1,000 People
Alabama	248 (52%)	637 (40%)	0.18
Florida	1,843 (52%)	6,080 (83%)	0.37
Georgia	808 (79%)	3,368 (72%)	0.39
North Carolina	811 (57%)	2,601 (62%)	0.33
South Carolina	352 (58%)	806 (54%)	0.23
Tennessee	339 (85%)	1,544 (49%)	0.28
Southeast	**4,401 (60%)**	**15,036 (69%)**	**0.33**

Total ports includes both DCFC and Level 2 ports.

The Southeast has an opportunity to build on its existing network through the NEVI program. Southeast states are eligible for a total of $680 million from the federal government to build public charging stations through fiscal year (FY) 2026 (Federal Highway Administration, n.d.). As seen in Figure 7, NEVI funding will far eclipse existing public investments in EV charging in the Southeast. The Biden Administration expects that the first two years of funding will electrify over 75,000 miles of the national highway system (The White House, 2023). All states' first year NEVI Plans were approved, allowing states access to FY 2022 and FY 2023 funding, and all states were due to submit their second NEVI plans by August 1, 2023 (U.S. Department of Transportation, 2022).

NEVI will be a boost not just in terms of the number of chargers, but also in the quality of the charging network. The NEVI program requires each site to support simultaneous charging of at least four vehicles with DCFC at 150 kilowatts (kW) each for a minimum total site power of 600 kW. Further, NEVI requires a minimum station uptime of 97 percent to address reliability issues with some existing public charging (Federal Highway Administration, 2022) (Rempel, Cullen, Bryan, & Cezar, 2022). Despite this sizable investment, significantly more investment will be needed in the future (McKenzie & Nigro, 2021).

BOX 1: COMPETING CHARGING CONNECTORS FOR NEVI

As of June 2023, all federally funded fast chargers for NEVI are required to include Combined Charging System (CCS) connectors, which are used by nearly all automakers today. The CCS connector has recently fallen out of favor with major automakers, including General Motors and Ford, which have announced they will be switching their EVs to the North American Charging Standard (NACS) in 2025. NACS is a connector developed by Tesla and now appears to be the favorite of the industry. To that end, in late June 2023, the Society of Automotive Engineers (SAE) announced that they would initiate an expedited process to incorporate NACS as a formal industry standard (SAE International, 2023). This action would open the NACS connector to other suppliers and manufacturers, greatly increasing the size and reliability of the charging network while also establishing a recognized industry standard. All states must proceed with deploying CCS chargers in NEVI for now but are allowed to also require NACS connectors on charging equipment, as Texas has done with their program (Reuters, 2023). Future federal guidance on the NEVI program could mandate the NACS connector in addition to or instead of CCS.

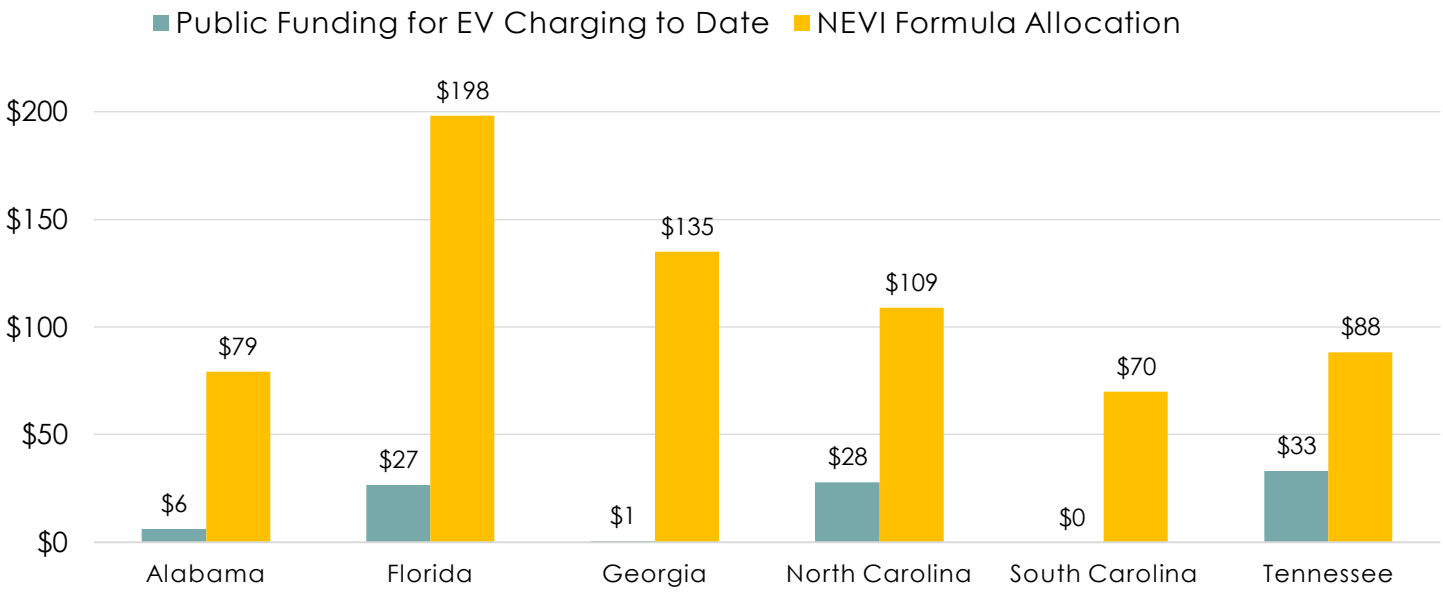
In addition to NEVI funding, other new and expanded federal funding programs have progressed over the last year. The first round of the CFI Grant Program closed in June 2023. This competitive program provides funding for state, local, and tribal applicants to deploy publicly accessible EV charging and alternative fuel infrastructure (U.S. Department of Transportation, n.d.). The first round of funding makes $700 million available with a particular focus on underserved and disadvantaged communities. This funding can go towards electric charging as well as hydrogen, propane, and natural gas.

As charging is built out in the Southeast with the help of the NEVI and CFI programs, it will be crucial to ensure that the chargers installed are reliable, affordable, accessible, and equitably distributed. Currently, many consumers who live in multi-unit dwellings or neighborhoods without private parking spaces lack access to at-home charging. EV drivers without at-home access can rely almost exclusively on convenient access to affordable public charging options. Given that public DCFC can be considerably more expensive than at-home charging, a reliance on fast charging could exacerbate inequities, especially for lower-income EV owners living in multi-unit dwellings (Mollica, 2021).

BOX 2: JUSTICE40 AND EV CHARGING

President Biden's Executive Order 14008 established the Justice40 Initiative, which mandates that 40 percent of the overall benefits of federal investments flow to disadvantaged communities that are marginalized, underserved, and overburdened by pollution (The White House, n.d.). NEVI is a Justice40 covered program and all six Southeast states have publicly committed to equitable EV charging deployment in observance of Justice40 in their initial NEVI plans. As a complement to NEVI, the CFI Grant Program will benefit underserved communities by prioritizing low and moderate income and rural areas for investment, and lays out criteria regarding equity, community engagement, and Justice40 for project selection (Department of Transportation, 2023).

FIGURE 7: PUBLIC FUNDING FOR EV CHARGING ($ MILLIONS)



This figure depicts public funding for EV charging awarded or made available to date compared against each state's five-year NEVI program formula allocation. The public funding to date includes both light-duty and some medium and heavy-duty charging infrastructure.

There are several other important initiatives underway at a federal level to support EV charging aimed at supporting charger deployment, including:

- In February 2023, the U.S. Department of Transportation (DOT) and Department of Energy (DOE) finalized new charging standards for federally funded chargers. The standards set a baseline to ensure that the network is interoperable between different charging companies, with similar payment systems, pricing information, and charging speeds (The White House, 2023).
- The Administration is working with the Joint Office of Energy and Transportation to develop the EV-ChART tool for EV charging data reporting.
- Efforts hosted by the Joint Office and National Charging Experience Consortium (ChargeX) will identify and pursue opportunities to improve the charging experience for consumers.
- In June 2023, the Federal Highway Administration (FHWA) announced that it anticipates making up to $100 million in NEVI funding to assist states and local governments in repairs, replacements, and upgrades to their chargers (The White House, 2023).

In addition to EV charging-specific programs like NEVI and CFI, other federal programs in Bipartisan Infrastructure Law and IRA could support the EV market including the EPA's Environmental Justice Thriving Communities Technical Assistance Centers, Climate and Environmental Justice Block Grants, and Port Electrification grants, among others (U.S. Environmental Protection Agency, n.d.) (U.S. Environmental Protection Agency, n.d.) (U.S. Department of Energy Alternative Fuels Data Center, n.d.).

PUBLIC FUNDING FOR EV AND CHARGER DEPLOYMENT

Public funding from state and mostly federal sources has played an important role in the development of the EV market in the Southeast this past year. Though states have allocated very little new state funds to transportation electrification, they have greatly increased access to available federal and VW Settlement funds. States range from $7.96 to $23.12 in per capita state and federal funding compared to the national average of $30.71 with Alabama and Georgia at a level less than half the U.S. average (see Table 5).

TABLE 5: KEY INDICATORS FOR PUBLIC FUNDING IN THE SOUTHEAST

State	State Funding for EVs ($ millions)	State Funding for EVs per Capita	Federal Funding for EVs ($ millions)	Federal Funding for EVs per Capita
Alabama	$8.2	$1.64	$31.6	$6.32
Florida	$147.4	$6.91	$207.4	$9.72
Georgia	$8.9	$0.84	$105.1	$9.89
North Carolina	$50.2	$4.84	$189.5	$18.28
South Carolina	$2.3	$0.45	$82.9	$16.32
Tennessee	$10.4	$1.52	$124.1	$18.09
Southeast	$227.5	$3.84	$740.6	$12.50
U.S. Total	$4,553.5	$13.81	$5,572.4	$16.90

This table depicts public funding awarded or made available in the Southeast. In this summary, state funding includes VW Settlement funds dispersed by the state. Public funding excludes utility funding. Federal funding is reported separately and excludes loans.

The key sources of public funding to date in the Southeast include the Volkswagen (VW) Settlement, the American Recovery and Reinvestment Act of 2009, the Federal Transit Administration's Low- or No- Emission Vehicle (Low-No) and Buses and Bus Facilities grant programs. The IRA and the Bipartisan Infrastructure Law are pouring significant new funding into some of these existing programs and creating new programs including the Environmental Protection Agency's (EPA) Clean School Bus Program.

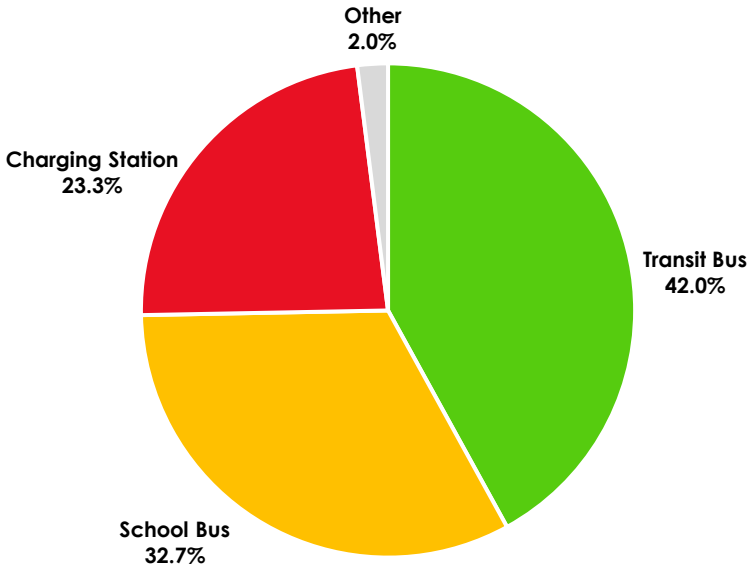
VW SETTLEMENT AND OTHER STATE FUNDING

As of the end of June 2023, states in the Southeast have awarded or made available $228 million for transportation electrification. State funding includes the minimal funds appropriated by states and funding administered through the VW Settlement program.[1] Overall, electric transit and school buses accounted for 75 percent of awarded funds (see Figure 8). More than 99 percent of state administered funds have been from the VW Settlement, and it is the only source of state funding in all Southeast states except for Alabama.

[1] This VW Settlement was established to resolve allegations that Volkswagen violated the Clean Air Act, requiring the automaker to provide $2.9 billion for states to appropriate to remediate excess nitrogen oxides emissions from their vehicles. In total, the Southeast has received $427 million from the settlement fund.

In total, the Southeast has spent $3.84 per capita in state public funding on transportation electrification. Per capita state funding ranges from $6.91 in Florida (16th in the U.S.) to $0.45 in South Carolina (46th in the U.S.). All states trail the national average of $13.81.

FIGURE 8: STATE FUNDING BY ELECTRIC TRANSPORTATION PROJECT TYPE IN THE SOUTHEAST TO DATE

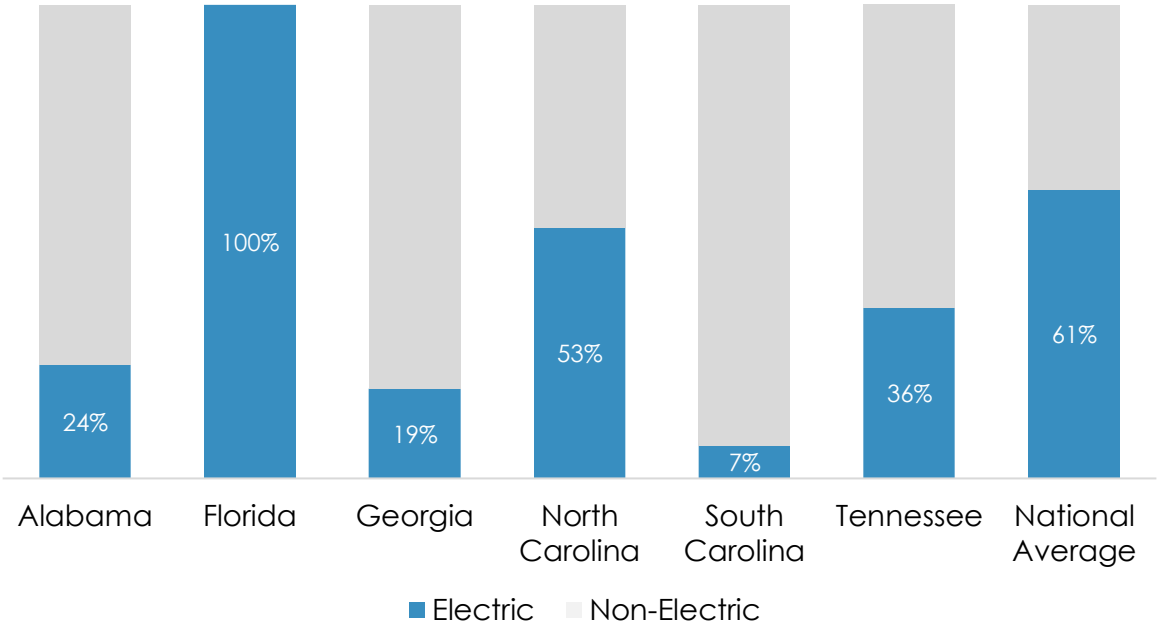


This figure depicts state funding by project type for the entire Southeast region to date and includes VW Settlement funds. The public funding to date includes state funding categories only and does not account for federal funding.

More than 70 percent of total funding for EVs from the VW Settlement and other state programs, $169 million, has been awarded in the past 12 months. Florida led the way with $122.5 million, followed by North Carolina with $37.7 million, Tennessee with $5.2 million, and Alabama with $3.7 million. Georgia and South Carolina did not award or make available any state funding within the past year. In the past 12 months, most of the regional transportation electrification funding went to buses including electric transit buses (42 percent) and electric school buses (44 percent). The remainder went to EV charging infrastructure (10 percent).

The Southeast has now dedicated 61 percent of the allocated VW Settlement funding towards EVs and charging, on par with the national total. Figure 9 shows the breakdown of funding towards electric compared to non-electric uses in the Southeast. Florida is one of only four states nationwide to have spent to date all their VW funds on EVs and chargers, while South Carolina ranked 47th with just 7 percent of VW funds awarded for EVs and chargers.

FIGURE 9: PERCENTAGE OF VW SETTLEMENT AWARDS FOR ELECTRIC TRANSPORTATION



This figure depicts the share of electric vs non-electric transportation uses for VW Settlement funds across states in the Southeast along with the national average.

Within the last year, Tennessee, North Carolina, and Florida have made awards through the VW Settlement. In August 2022, Florida awarded $68 million, representing the single largest VW Settlement award to date for EVs. North Carolina has continued with Phase 2 of their VW Settlement program with a series of funding opportunities for their clean heavy-duty vehicle program and charging infrastructure program spanning workplace, multi-unit dwelling, and public charging worth a total of $29 million. The largest single award in North Carolina totaled $16 million for a school bus electrification program. North Carolina also awarded funding for Level 2 charging in the workplace, multi-unit dwellings, and public spaces in May 2023. The state now seeks applications from state agencies for their Level 2 Charging Program, with $1 million in awards to be announced later in 2023 (North Carolina Department of Environmental Quality, n.d.).

FEDERAL FUNDING

Through the end of June 2023, states in the Southeast have been awarded $741 million from federal grant programs for transportation electrification with the majority going toward buses and bus facilities.[2] This translates to a more than 80 percent increase in awarded federal funding

[2] This does not include NEVI funding as states have yet to announce awards.

for states in the region compared to the same time in 2022. Funding awarded in the past 12 months included $234 million for electric transit buses from the Federal Transit Administration[3] and $3 million from the U.S. Department of Energy's Vehicle Technologies Office for research and development.

With the Bipartisan Infrastructure Law and the IRA, there is an unprecedented influx of federal funding for transportation electrification. New federal programs could provide a significant boost to electrification in the Southeast. For example, the Clean School Bus program launched in May 2022 has since then awarded $172 million in funds to the Southeast. The program will provide $5 billion in competitive grants over five years (FY 2022-2026) to replace existing school buses with zero-emission and low-emission models. In South Carolina all school districts applied through the South Carolina Department of Education because the state owns the buses (rather than individual school districts). South Carolina's approach proved to be effective, securing $65 million for 164 electric buses, trailing only California and New York for total funding awarded in the first year of the program. Florida received just $15 million for 39 electric school buses despite being the third most populous state in the country. In total, the program will send 432 electric school buses and 30 propane school buses to the region. The EPA has since announced a second round of funding will be awarded and made available to selected applicants in the first months of 2024, totaling $400 million.

STATE POLICY TO ADVANCE EVS

States continue to develop planning, rules, and regulations impacting EV adoption and infrastructure. In some instances, these policies enable greater uptake though in others, fees and regulations may raise barriers for rapid deployment of EVs.

EV PLANNING

In April of 2023 North Carolina released its Clean Transportation Plan after over a year of engagement with more than 220 stakeholders in local and state agencies, social justice groups, utilities, and others (N.C. Department of Transportation, 2023). The plan, which was required by Governor Roy Cooper's Executive Order 246, aims to reduce the state's greenhouse gas emissions by at least 50 percent below 2005 levels by 2030 through several strategies, including 1.25 million registered zero-emissions vehicles (ZEVs) and 50 percent passenger ZEV sales by 2030 along with significant reductions in vehicle miles traveled (VMT) through support for public transit, multi-modal travel, and land use strategies. The plan requires that state agencies collaborate to achieve deep decarbonization across all sectors, including transportation, while enhancing public participation and centering equity.

[3] Includes Low or No Emission Vehicle Program and Grants for Buses and Bus Facilities

The South Carolina Department of Commerce established the South Carolina EV Economic Development Initiative at the end of 2022 to support the growing EV industry in the state. The Initiative must create and implement a strategic approach to EV research, development, and production in the state, while also collaborating with an Interagency EV Working Group for a statewide EV deployment plan. South Carolina's EV plan is currently under gubernatorial and legislative review and has not been made public yet. In February of 2023, as a part of the initiative, South Carolina launched its first-ever dedicated EV website to aid prospective companies in understanding the potential benefits of locating facilities in the state (South Carolina Department of Commerce, 2023).

Tennessee continues to work from its 2019 EV Roadmap, with plans to undertake a medium-duty and heavy-duty charging market assessment by the end of this year (Drive Electric Tennessee, n.d.). Meanwhile, Florida is using its 2020 EV Roadmap and 2021 EV Infrastructure Master Plan to plan for EV deployment and charging infrastructure development. Similarly, Alabama continues to follow the most recent version of its EV Infrastructure Plan after expanding it at the beginning of 2022.

RULES AND REGULATIONS

State legislatures and agencies also advanced several EV-related policies though not all are aimed at accelerating EV and charger deployment. As of June 2023, no Southeast states have state-level rebates or grants for the purchase of an EV while such an incentive is in place in more than 15 states.

Governor Roy Cooper of North Carolina signed Executive Order 271, charging the Department of Environmental Quality (DEQ) to initiate the Advanced Clean Trucks (ACT) rulemaking to regulate and accelerate the uptake of zero emissions trucks and buses (North Carolina Department on Environmental Quality, n.d.).[4] DEQ is currently collaborating with stakeholders to develop the program before finalizing its proposed rules and fiscal analysis later in 2023. See Box 4 for more on Medium and Heavy Duty (MDHD) electrification efforts.

State legislatures also introduced or passed several new bills targeted at EVs. For example, North Carolina Senate Bill 316 would require the designation of parking spaces for EVs, signage for EV parking spaces, and levy fines for violating such regulations. House Bill 318 in North Carolina would require all newly built single-family homes and duplexes in the state to have an easily accessible, charger-ready electrical circuit. If enacted, these pieces of legislation could increase the accessibility of EV charging in both public and at-home spaces with little effort needed to upgrade existing electrical infrastructure.

[4] Advanced Clean Trucks is a rule out of California that would require OEMs to sell an increasing number of zero-emissions trucks in place of ICE vehicles. Under this rule, ZEVs will need to represent 55 percent of Class 2b-3 truck sales, 75 percent of Class 4-8 truck sales, and 40 percent of Class 7-8 tractor sales by 2035.

A bill that would make EV chargers eligible for tax incentives in South Carolina was approved in the House earlier this year. It was introduced into the Senate just as the first year of a two-year legislative session came to an end (Wren, 2023). Residents and business owners in South Carolina will have to wait until the next legislative session before knowing if they will be eligible for the proposed tax incentives.

BOX 3: LOCAL GOVERNMENT CAN FOSTER THE EV TRANSITION

Local government initiatives, while small, signal shifts in the region. The city of Helena, Alabama, has amended its zoning ordinances to provide EV infrastructure guidelines, including requiring all new or reconstructed parking structures to install EV charging stations (City of Helena, 2023). City officials announced in February 2023 that they were establishing an ordinance to add more charging infrastructure for EVs (Llerena, City unveils first draft of new ordinance to expand EV charging infrastructure, 2023). The ordinance applies to new building construction within the city limits, creating EV-Capable, EV-Ready, and EV supply equipment installed parking spaces. The City of Charleston, South Carolina, recently unveiled two new Nissan Leafs to be used in the city's mail courier and planning departments, the first electric cars to join the municipality's fleet (Llerena, Charleston unveils first electric vehicles to be added to fleet, 2023). Elsewhere, the Upper Cumberland Human Resource Agency was the first organization to debut its all-electric shuttle bus in the state of Tennessee (Drive Electric Tennessee, 2023). The shuttle was purchased as part of an initiative led by Tennessee Technological University and U.S. DOE to help provide low-income and vulnerable populations in the 14-county region with safer transportation options.

States have also progressed policies that make it more expensive for drivers in the region to own an EV. Georgia has the second highest EV registration fee in the country with an annual fee of $214 and Alabama is third with an annual EV fee of $203. The national average for EV registration fees is $126, while the average fee in the Southeast is $161 (Graham, 2023).[5] Likewise, none of the Southeast states have state-level rebates or grants for the purchase of an EV. Meanwhile, in July 2023, Governor Ron DeSantis of Florida vetoed a bipartisan bill (SB 284) that would have required the state to conduct a total cost of ownership (TCO) analysis for public fleet vehicles. EVs tend to have a lower TCO than other alternatives, making it easier to justify a transition to EVs for public agencies. The bill was passed 115-1 in the Florida House and 38-0 in the Florida Senate. Proponents of the bill argued that the veto could end up costing the state

[5] Counting states with existing registration fees only.

millions of dollars in the long term (Barnes, 2023). A recent study estimated that Florida could save $277 million over 15 years by using a TCO approach to transition its fleet to electric alternatives because of significantly lower fuel and maintenance costs for EVs (Advanced Energy United, Electrification Coalition, 2023).

Georgia's Joint Study Committee on the Electrification of Transportation issued its final report, outlining the Committee's work and recommendations for public EV charging infrastructure and economic preparedness across the state (U.S. Department of Energy, n.d.). One of The Committee's recommendations, creating per kilowatt-hour-based charging fees, was finalized into law (Senate Bill 146) by the Georgia General Assembly in March of 2023 (Williams, 2023). The legislation permits the Georgia Public Service Commission to regulate and impose a new tax of 2.84 cents per kilowatt-hour on the use of electricity as a fuel for motor vehicles beginning in 2025 (Amanda Andrews, 2023). A pilot program endorsed by the Committee is also investigating the effects of charging drivers by miles traveled.

Direct consumer sales and service by EV manufacturers are only allowed in Florida and Tennessee and banned in South Carolina and Alabama. Georgia and North Carolina only allow Tesla, which was granted an exemption in both states several years ago, to sell and service directly to consumers and only in a limited capacity.[6] Direct sales and service prohibitions make it more challenging for consumers to buy and service EVs from some manufacturers, including companies that aim to manufacturer in the Southeast (e.g., Rivian, and VinFast). A new Florida law (HB 637), signed by Governor DeSantis in June 2023, bars automakers from offering direct sales to consumers if already selling vehicles in the state via dealerships (Brooks, 2023). This ban affects established manufacturers like General Motors and Ford but is not relevant for new EV manufacturers like Tesla, Rivian, and Lucid Motors.

[6] Tesla can operate up to five sales and service centers in Georgia and six in North Carolina.

BOX 4: MDHD SLOWLY GROWS MOMENTUM

Increased public funding in conjunction with transformative regulations such as California's Advanced Clean Trucks (ACT) rule will stimulate the electric MDHD market. The Southeast will benefit from federal funds supporting MDHD vehicle electrification including funding from February 2023, when U.S. DOE awarded $1.25 million to CALSTART to plan an "East Coast Commercial ZEV Corridor" (Department of Energy, 2023). This effort will scope out MDHD charging along the I-95 freight corridor, beginning in Savannah, Georgia, and stretching through South and North Carolina, all the way to New Jersey. In tandem with public support, the market has signaled a shift to electric MDHD vehicles. In the last few years, large corporations including Amazon, UPS, and Fed-Ex have begun the process of electrifying their delivery fleets and announced further electrification commitments (Domonoske, 2021). Moreover, leading commercial distributors are procuring electric trucks, including PepsiCo and Frito-Lay, and these trucks will often need to travel across state lines to reach their retailers (CNBC, 2022) (Frito-Lay, 2023). As the ACT rule gains ground, electric MDHD fleet operators will be able to do business more easily in states with the right policy environment and plans for supportive charging infrastructure.

CONCLUSION

Electric vehicle sales are on the rise, expanding significantly across the Southeast. The region continues to lead nationally in new battery production and EV manufacturing investments, with many new billion-dollar announcements throughout the Carolinas, Georgia, and Tennessee. Meanwhile, the first round of NEVI and CFI funding will inject hundreds of millions of dollars for EV charging infrastructure buildout in the Southeast. Other federal funding from the Bipartisan Infrastructure Law and Inflation Reduction Act will continue to drive private sector investments in EV, battery, and supply chain manufacturing and jobs, provide vehicle tax credits to support consumer and fleet EV purchases, increase charging station deployments, and more.

While the market and funding opportunities have expanded, supportive policies have yet to keep pace. The speed at which electric car, truck, and bus adoption will grow in the Southeast and the equitable access to the benefits of the growth depends largely on how the work of policymakers at the state and local level complements and enhances investments from industry and the federal government. More action now will put Southeast residents and fleet operators in the driver's seat on their way to improved public health, a cleaner environment, and a growing economy.

ADDITIONAL RESOURCES FROM SACE AND ATLAS PUBLIC POLICY

The Southern Alliance for Clean Energy (SACE) releases annual reports covering clean energy and transportation topics in the Southeast. We invite you to view all SACE reports, white papers, and other technical resources and select reports below.

Assessment of Medium- and Heavy-Duty Vehicle Electrification, *(2023)*

Retained Transportation Fuel Spending in the Southeast, *Second Edition. (2023)*

Energy Efficiency in the Southeast, *Fifth Annual Report. (2023)*

Tracking Decarbonization in the Southeast, *Fifth Edition. (2023)*

Solar in the Southeast, *Sixth Annual Report. (2023)*

Atlas Public Policy releases timely reports covering clean energy and transportation topics across the United States. We invite you to view all Atlas Resources and select reports below.

Charging Toward Justice: How States Can Lead on Racial and Economic Equity through the National Electric Vehicle Infrastructure (NEVI) Program, *(2023)*

Closing the Road Funding Gap, *(2023)*

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