

Trends in Electric Vehicle Charging Ports per Site in the Southeastern United States

Trey Gowdy and Richard Simmons

Trends in Electric Vehicle Charging Ports per Site in the Southeastern US

CONTENTS	
INTRODUCTION	1
METHODOLOGY	3
Data Analysis	3
Limitations	4
FINDINGS	4
Average Charging Ports per Station	4
Regional Charging Port Distribution (Level 2)	6
Regional Charging Port Distribution (DCFC)	8
CONCLUSION	12
REFERENCES	14
APPENDIX	16

Summary

This report provides an overview of the market trends in electric vehicle (EV) charging ports per station across 12 Southeastern states based on an analysis of charging station characteristics over the last decade. As of 2022, we identify an average of 2.3 ports per Level 2 charging station and 4.6 ports per direct current fast charging (DCFC) station in the region. The observed trend in the Level 2 market has been consistent over the study period, whereas the more complex DCFC space is characterized by much greater variability. These observations are relevant to public and private interests in the ongoing goal to electrify light-duty vehicles.

INTRODUCTION

The build-out of electric vehicle (EV) charging infrastructure in the United States has accelerated in recent years. With projections of 30 to 42 million light-duty electric vehicles on the road in 2030 nationally, and a modeled need for 26 to 35 million charging ports at the end of the decade (Wood et al. 2023), the transition to an electrified transportation sector is expected to continue rapidly. Through substantial public- and private-sector investment, the Southeast region, like the United States as a whole, is in the process of a major expansion of publicly accessible EV charging stations, also known as electric vehicle station equipment. This equipment includes both direct current fast charging (DCFC, also referred to as Level 3) along highway corridors and the build-out of community charging (also known as destination charging), typically Level 2, through public and private investment.

EVs can charge from a state of charge of near-zero to 80% in about 4 to 10 hours using a Level 2 charger; DCFCs can charge an EV to the same level in about 20 minutes to 1 hour (USDOT 2023). This is dependent on a variety of factors beyond the charger level, such as maximum power output (kW), battery capacity (kWh), and other vehicle specifications. Some stations may offer multiple kW output amounts at the same station to accommodate different desired charging speeds.

Although for many EV drivers most charging takes place at home, public charging infrastructure is critical to transportation electrification (LaMonaca and Ryan 2022). For example, while upward of 90% of charging takes place at home for consumers with detached houses, less than 50% of charging takes place at home for those in multiunit dwellings (Nicholas et al. 2019). Additionally, consumers may not have access to at-home charging because of a lack of off-street parking. Other current or prospective EV drivers may rely on public charging infrastructure (including workplace charging) for daily commutes, long-distance road trips, or for other reasons (Ge et al. 2021).

There are more than 30 charging station companies operating across the Southeast and thousands of charging stations in the region (AFDC 2023). With this existing landscape, plus the expansion of public charging infrastructure through multi-billion-dollar federal funding programs like the National Electric Vehicle Infrastructure (NEVI) program (FHWA, USDOT 2022) and the Charging and Fueling Infrastructure program (FHWA, USDOT 2023), and additional public- and private-sector investments, it is timely and instructive to measure this developing infrastructure system to better understand emerging market practices.

This report seeks to specifically measure charging port trends per public charging station in the Southeastern United States for the past decade (through 2022). While data on the number and locations of charging stations is an area of active research, we are not aware of data analysis on charging ports per station. Existing research on EV charging infrastructure includes analyses on quarterly data trends for overall metrics and infrastructure growth (Brown et al. 2023), international charging infrastructure trends (Funke et al. 2019), charging station per capita data analyses (such as charging stations per person or per vehicle) (Wood et al. 2017), landscape reviews on service providers and policies (LaMonaca and Ryan 2022), methods for planning charging locations (Metais et al. 2022), charging station connector type trends (Knez et al. 2019), and analysis on available data on charging station utilization (Borlaug et al. 2023).

One study does note high-level national ports trends per station and includes a modeled scenario through 2030 for DCFC (Wood et al. 2017). Therefore, we seek to confirm if 2 to 8 ports per DCFC station is the current industry practice in the Southeast region and to determine the industry practice for Level 2 chargers.

For example, per federal guidance for one federal electric vehicle charging program focused on DCFCs:

“In practice, most current new public charging stations include 2–8 charging ports to address the growing demand, with some industry leaders adopting an internal standard minimum of 8 charging ports per station” (FHWA, USDOT 2022).

However, the authors are not aware of a public study of charging port trends that tracks historic trends or looks at the current state of EV charging port build-outs per site, either nationally or for the Southeast region specifically, across the variety of charging network companies. By exploring these specific gaps, this analysis and its implications may provide a sense of emerging industry practices (both observed and desired) to inform policymakers and planners, prospective site hosts, utilities, electric vehicle drivers, and more.

This report answers the following questions:

- What are the average charging ports per charging station for both Level 2 and DCFC charging levels in the Southeast?
 - What are the key trends?
 - Have they changed over time?
 - Are there noticeable differences between states in the region?
- What is the median number of charging ports per station for both charging levels?

Better understanding these metrics will be important as publicly accessible charging infrastructure is further built out. For instance, these metrics will have implications on cost efficiency of capital deployment, use of infrastructure, pace of EV adoption, and greenhouse gas emissions. With the standards of the federal NEVI Formula Program, which is focused on DCFC and requires 4 charging ports per NEVI site (FHWA, USDOT 2022) we seek to confirm the current ports-per-station trend for fast charging in the region. Additionally, with the importance of reliable charging infrastructure (i.e., uptime), reducing long idle times (percent time spent not charging) at public Level 2 charging stations (Borlaug et al. 2023), and the importance of planning for future demand as EV adoption grows, this study seeks to understand the trends of charging station ports per charging station site.

METHODOLOGY

Data Analysis

We analyzed data from the Alternative Fuels Data Center (AFDC) Station Locator, available at <https://afdc.energy.gov/stations/> (AFDC 2023). We included charging stations with opening dates between 2013–2022. We only focused on public Level 2 and DCFC stations and did not consider any Level 1 charging sites or ports, as there are very few public Level 1 chargers and nearly zero Level 1 public installations. The charging stations considered in our study are primarily used to recharge light-duty vehicles. All sites have been confirmed to still be open in the last three years (since 2020). We used the “Open Date” in the dataset to track yearly installations and then added these in the cumulative rolling totals for each subsequent year. We analyzed data on a state-by-state basis across each year during our time period and also looked at the metrics across the 12 states in the Southeast: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Tennessee, South Carolina, Virginia, and West Virginia.

In this report, we use the term *port* to refer to each individual charging plug that connects a vehicle. We use the terms *charging station* and *charging site* interchangeably, referring to the overall location of charging infrastructure, whereas there may be one or more ports per site. Data was accessed as of February 13, 2023.

Limitations

Charging stations (sites) were identified by the same station name and address as provided by the Alternative Fuels Data Center, but there may be additional nuance with multiple charging stations at certain nearby locations classified as separate stations.¹ We did not detail specific trends by individual EV charging networks (i.e., charging companies) as we sought to explore the general cumulative industry practices for the public as a whole. It is possible that there are differences between specific charging networks, but this issue is beyond the scope of the present study. Trends by charging ports for local geographies more specific than regional and state totals is similarly beyond our scope but may warrant future interest. We only included stations opened since 2013 as there were less than 100 public charging stations in the region before then.

FINDINGS

First, we show the total number of charging stations across the 12 states in the Southeast region, which also highlights the growth of charging stations in the past decade, increasing 96-fold to more than 6,600 for Level 2 charging stations and 139-fold to more than 1,100 DCFC stations (Figure 1).

Looking specifically at charging ports in Figure 2, the substantial growth in the number of ports across the region over the last decade is also evident. However, there is a narrower gap between Level 2 and DCFC ports than for charging stations (sites). This highlights the differences in the ports per station between these two charging types, as there are often a higher number of charging ports at DCFC stations than at Level 2 stations. In Figure 3, the specific ports per station trends are identified for both types.

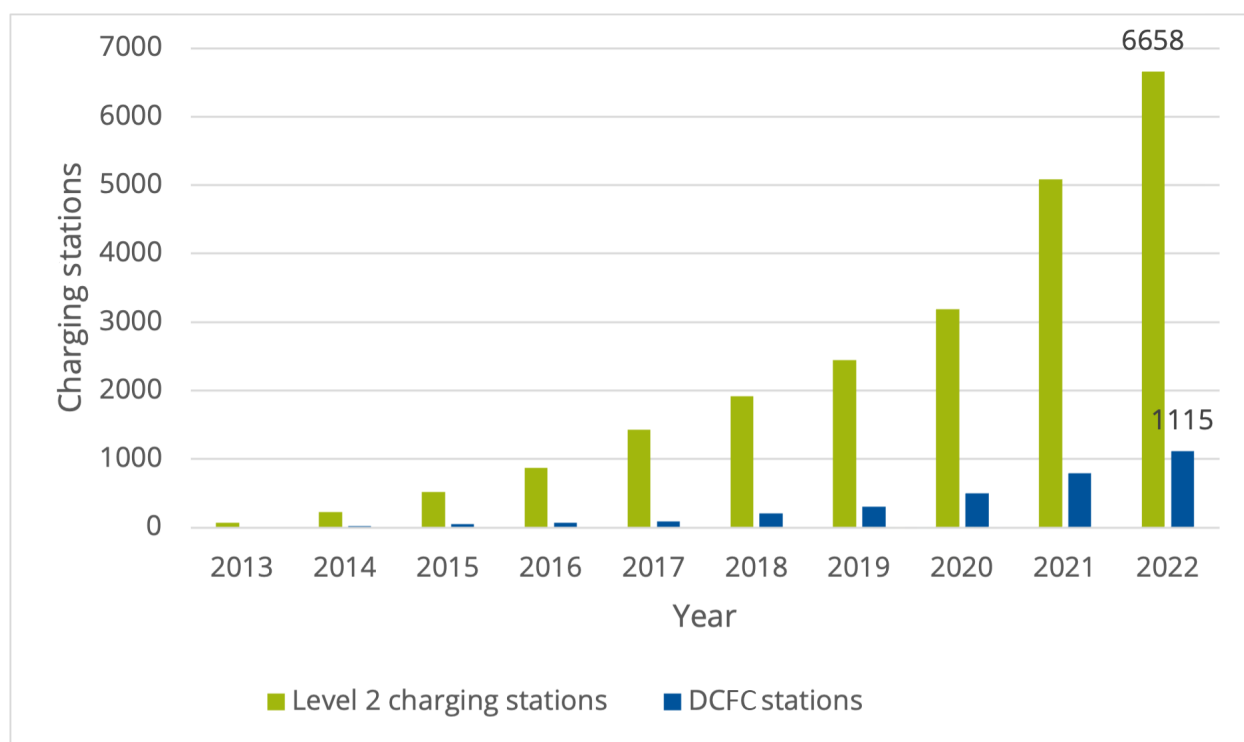
Average Charging Ports per Station

With a sense of the rapid growth in charging stations and charging ports in the region, here we explore the trends in the average number of ports per station over time. Figure 3 shows that, through the end of 2022, there are 2.3 ports on average for Level 2 stations and 4.6 ports on average for DCFC stations. Figure 3 also displays the cumulative trend over time (year-by-year data is included in Table A1).

The Level 2 trend of about 2 ports per station has remained largely consistent over time; however, the DCFC average ports per station has been trending slightly downward, currently settling between 4 and 5 ports per station on average. Despite the growth in EV charging stations in the region, the number of DCFC ports per station has declined nearly a full port per station since 2018, from 5.5 to 4.6 ports. Despite this, the average for DCFC stations across the region does meet the NEVI standard of 4 ports per station.

¹ It is possible that some sites (i.e., addresses) will be labeled as different charging stations (e.g., Office Building Charger Spot A, Office Building Charger Spot B, etc. or City Airport Charger Spot 1 and City Airport Charger Spot 2, etc.). We recognize there may be some nuances across specific sites with nearby, but separate, charging locations that may have a minor impact on this analysis, but wanted to follow the existing methodology of “stations.”

Figure 1. Southeast regional charging station totals over time



Source: AFDC 2023

Note: These totals are cumulative over time per installation year.

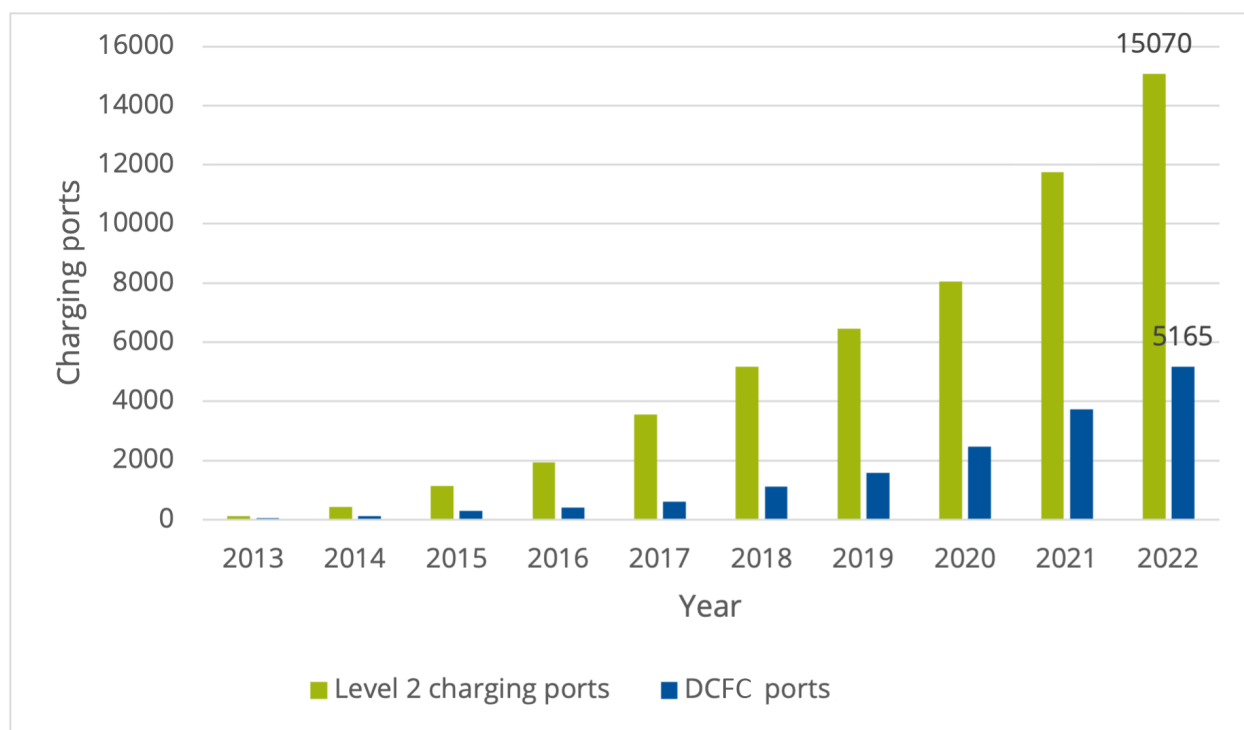
We also analyzed the data on a state-by-state basis to see if there were any noticeable differences across states. As shown in Table 1, we find that there is no substantial variation between Southeast states for the average number of charging ports per site for Level 2 stations. However, for DCFC stations, there is more variation. Table 1 is sorted by average DCFC ports per station.²

The relative consistency over time of Level 2 charging ports per station across states is highlighted in Figure 4.

The wide variability of average DCFC ports per station is shown in Figure 5. It is also notable that some states opened their DCFC stations infrastructure after 2013, with all states having at least 1 starting in 2016. The state-to-state variability, from as many as 5.8 average charging ports per station (South Carolina) to 3.6 average charging ports per station (Georgia) is shown.

² We note that we are uncertain of the state-by-state variations in DCFC ports per station. While there are likely many factors, it does not necessarily seem to align with EV adoption rates (with Florida, Virginia, and Georgia having the highest three adoption rates in the region, respectively) according to TransAtlas (AFDC 2021).

Figure 2. Southeast regional charging port totals over time



Source: AFDC 2023

Note: These totals are cumulative over time per installation year.

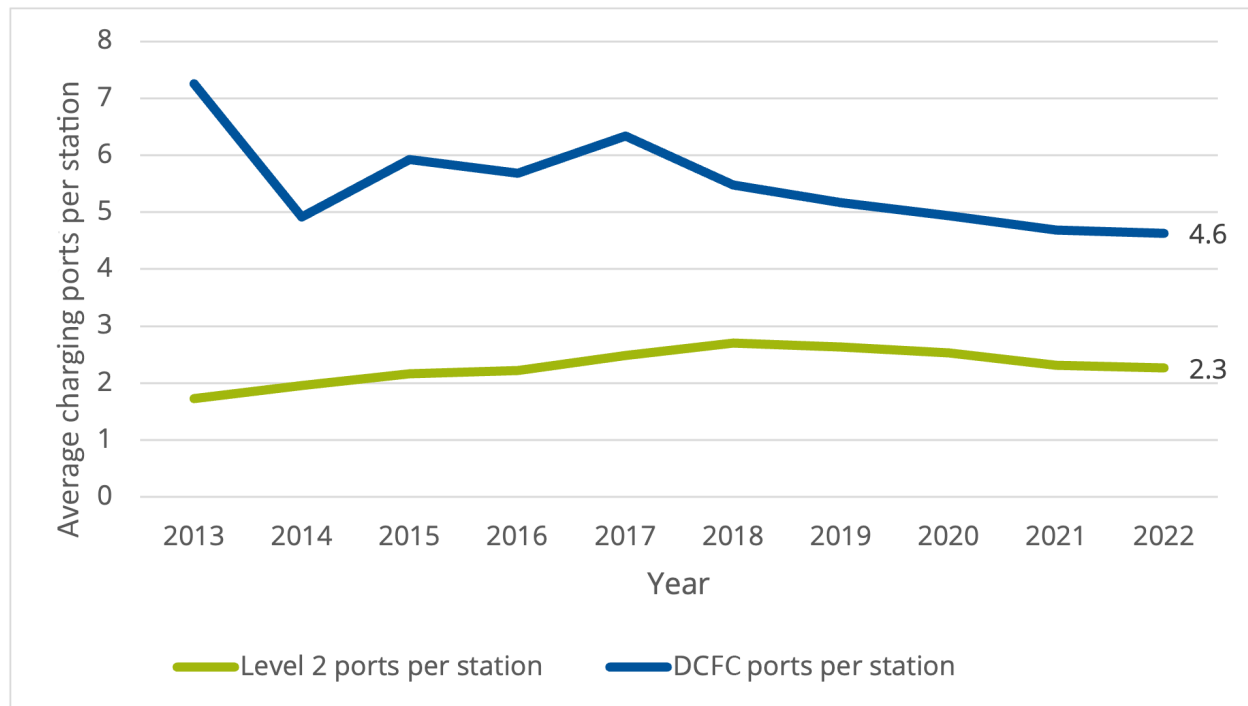
Regional Charging Port Distribution (Level 2)

Showing the average ports per station provides a sense of the overall trends; however, we also wanted to understand the distribution of actual charging port counts per station. As shown in Figure 6, in line with the average of 2.3 Level 2 ports per station, we find that the most common value is 2 Level 2 charging ports per site.³ The median value of Level 2 charging ports regionally is also 2, confirming a clear market standard for Level 2 stations. Given the limited capital cost of Level 2 charging stations (Chu et al. 2022), installing a dual-port Level 2 charging station presents a limited barrier for entry for prospective new site hosts that meet existing market trends. Beyond this, 1 charging port per site is the next most common value, then 4. There are 72 sites with at least 10 or more Level 2 ports at a single location across the region, but the vast majority of Level 2 charging stations have 4 or fewer ports per site.

For greater context, the largest single Level 2 site in the region through the end of 2022 is at an airport in northern Virginia, with 65 Level 2 charging ports at this single site.

³ This is understandable as *dual head* or *dual port* EV charging stations are a common electric vehicle station equipment product (CEC 2018).

Figure 3. Regional charging port averages over time



Source: AFDC 2023

Note: These totals are cumulative over time per installation year.

Table 1. State-by-state charging port averages through 2022

State	Level 2 Charging Ports per Station	DCFC Ports per Station
South Carolina	2.0	5.8
West Virginia	2.5	5.5
Kentucky	2.2	5.4
Mississippi	2.8	5.3
Florida	2.2	5.1
Arkansas	2.7	4.9
North Carolina	2.2	4.8
Virginia	2.4	4.7
Louisiana	2.2	4.5
Alabama	2.3	4.4
Tennessee	2.1	4.1
Georgia	2.3	3.6

Source: AFDC 2023

Note: Installations through December 31, 2022.

Figure 4. State-by-state Level 2 charging port averages over time



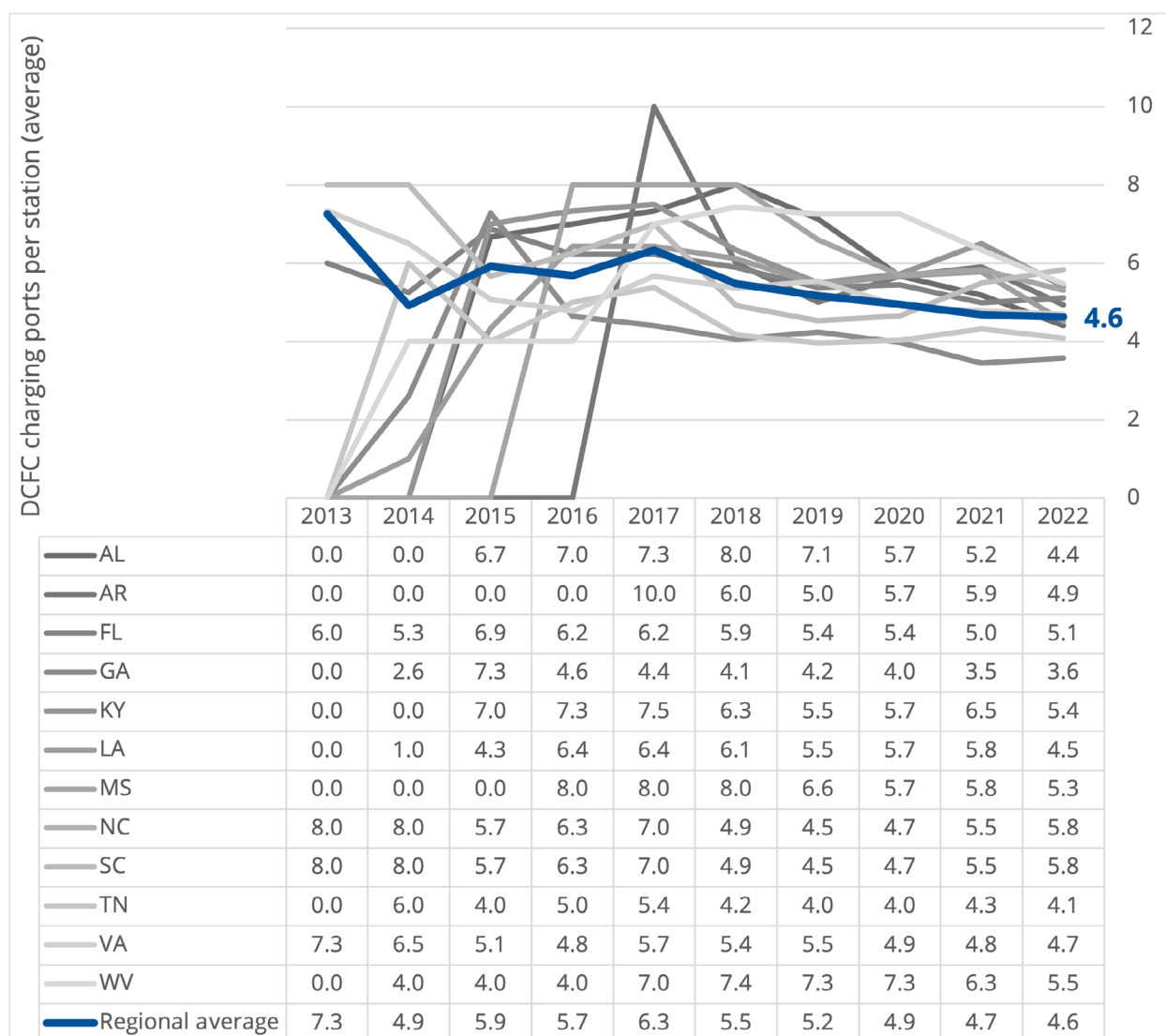
Source: AFDC 2023

Note: These totals are cumulative over time per installation year. An interactive chart is available at <https://datawrapper.dwcdn.net/TqKt6>.

Regional Charging Port Distribution (DCFC)

For DCFC sites, the port count distribution does not align as closely with our average values (Figure 3). It is notable that although the average is 4.6 DCFC ports per station, the most common value is 1 DCFC charging port per station, with 43% of DCFC stations in the region built through 2022 having only 1 charging port. The median value of DCFC ports per station regionally is 4, a larger deviation from the average than the Level 2 averages and median values. As Figure 7 shows, there is a more complex, multimodal distribution for DCFC port amounts. Following 1, the next most common number of ports per site is 8, then 4. There are 144 sites with 10 or more

Figure 5. State-by-state DCFC port averages over time

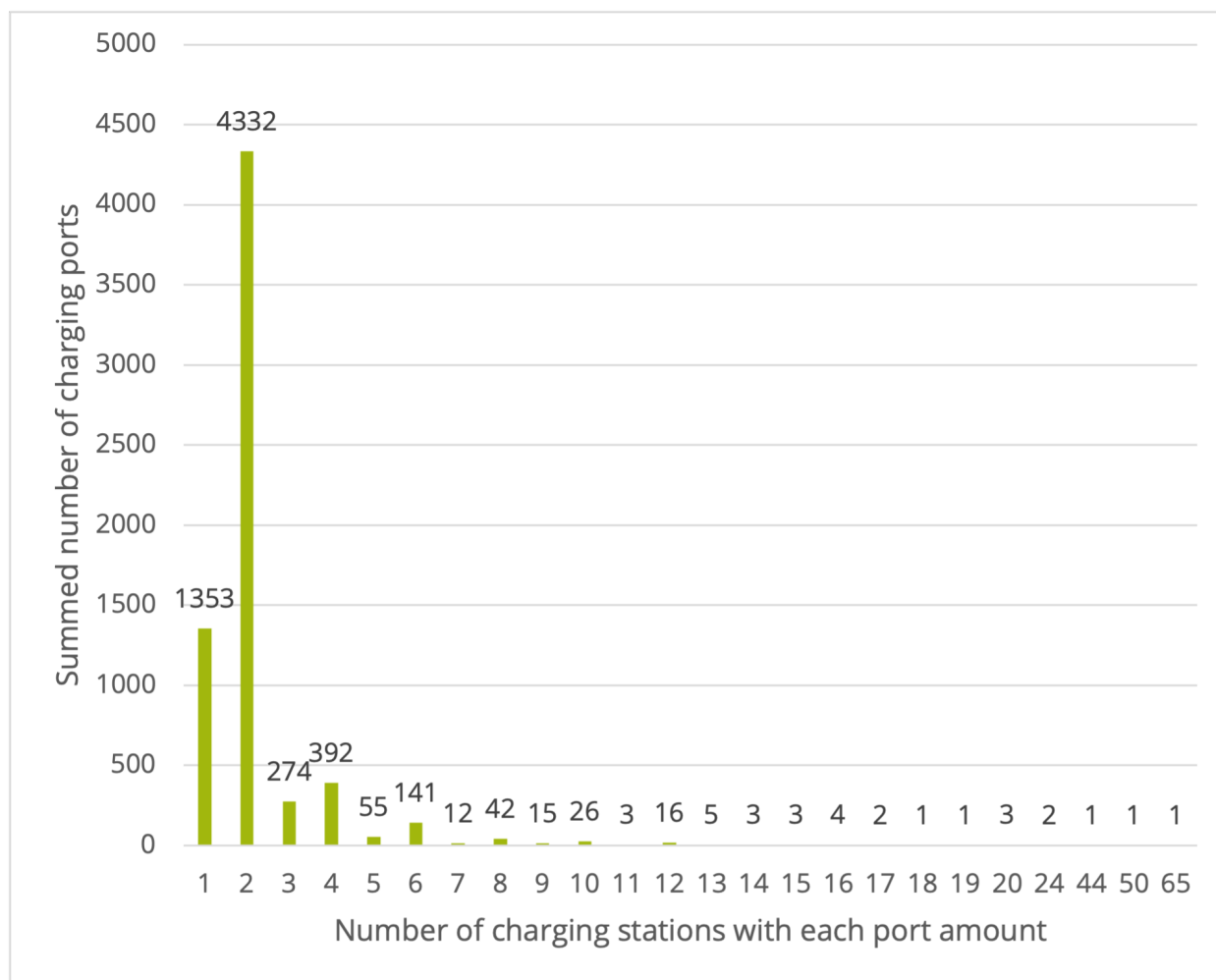


Source: AFDC 2023

Note: These totals are cumulative over time per installation year. An interactive chart is available at <https://datawrapper.dwcdn.net/QvZlf>.

DCFC ports across the region as of 2022; the largest single DCFC site is at a mall in southern Florida with 35 DCFC charging ports. Therefore, while a simple average is a key metric (especially when comparing to Level 2 charging), we recognize that the distribution of charging station ports is much more complex than the average shows for DCFC. Other than stations with 1 port, there is apparently a charging station design (or designs) with 4 ports being used, or even a design with double or triple that amount.

Figure 6. Level 2 charging station port count distribution



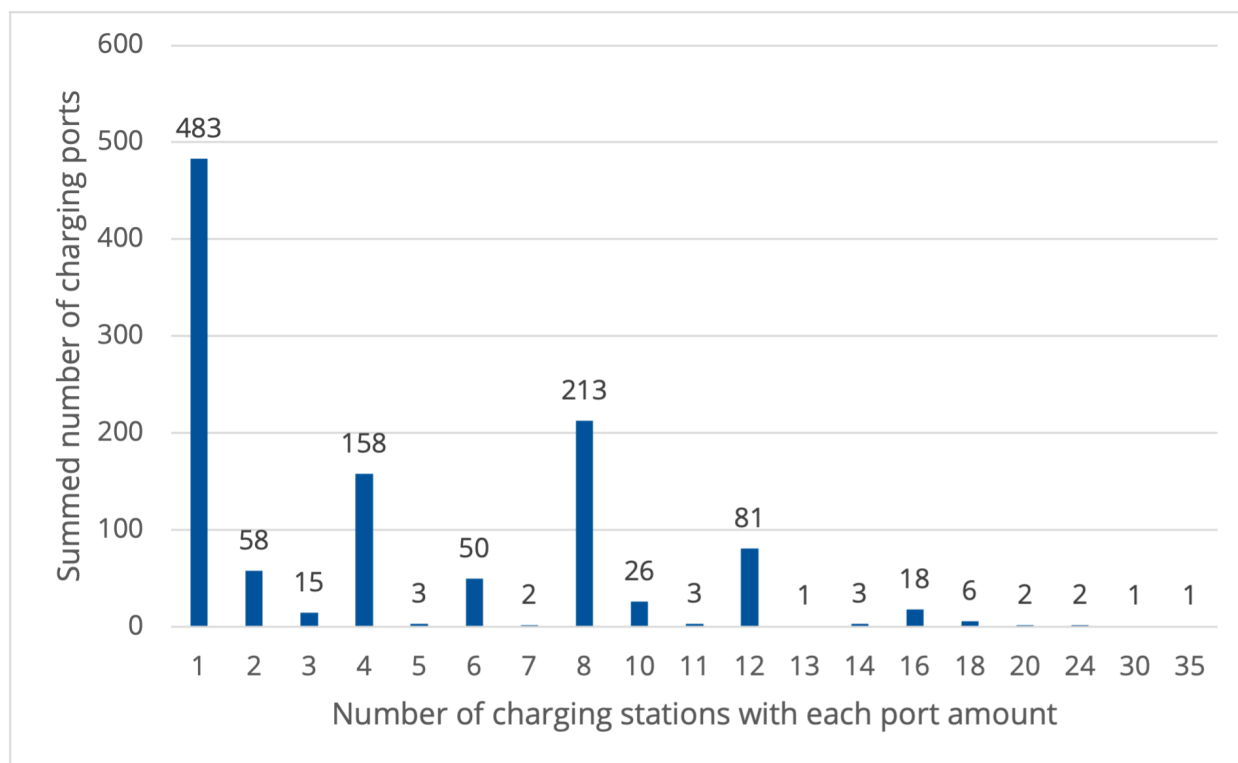
Source: AFDC 2023

Note: Installations through December 31, 2022. Counts often closely concentrated between 1 to 4 ports per station.

Although DCFC stations have higher turnover because of their faster charging speeds, having an average of only 1 charging port per site is an area of note when it comes to reliability (i.e., uptime). This suggests that though the regional trend is 4.6 ports per site, with larger stations of 8 charging ports or more skewing the average.

It should also be noted that DCFC ports are substantially more expensive than Level 2 ports. Focusing on equipment costs only, DCFC ports can range from approximately \$28,000–\$140,000 (from 50 to 350 kW units), with an estimated \$75,000 being the typical cost for 150 kW units that meet the NEVI power standard (Chu et al. 2022). This is in comparison to nonresidential Level 2 stations (with substantially lower kW power ratings), generally costing around \$1,000–\$3,500. The additional expense is attributed to several factors, including the charging equipment itself, the electrical distribution and supply infrastructure, and the installation labor. It is likely that certain economies of scale and optimal approaches unique to the respective charging levels are

Figure 7. DCFC station port count distribution



Source: AFDC 2023

Note: Installations through December 31, 2022. Counts vary widely from 1 port per station to larger stations of 8, 12, or more charging ports.

observed in the reported trends. One important note is Level 2 is used more for local charging, whereas DCFC may be more likely for pass-through traffic along highway or interstate corridors. Further study is required to better understand the underlying reasons for the differences between Level 2 and DCFC charging station characteristics.

Significant attention must be paid to not only building-out the fast charging network, but to ensuring ports per station meet the sector's needs as EV adoption increases. Because of limited open data on charging station activity, it is difficult to measure station usage and wait times, with utilization trends not well known. That said, recent analysis on a subset of public stations has been conducted (Borlaug et al. 2023). This study notes that Level 2 station utilization rates in a local area decrease as more stations are installed. However, it also notes this is not the case for DCFC, as utilization rates for those are more impacted by the charger's power output (kW), which can vary more widely.

As the common value of DCFC charging stations is 1 port, further study could look at the impacts and risks of this lack of redundancy, affecting more than 40% of DCFC stations in the region, and a more complete characterization of the types of DCFC sites. With some charging station networks experiencing 7 to 18 days of downtime per year (Keith and Womack 2023), ensuring reliability at single-port DCFC sites is important. This is more crucial in places without

another DCFC charging port nearby and will be critical to ensuring a reliable public charging experience. Looking ahead, the NEVI standard for federally funded build-out of highway DCFC sites is a 97% uptime metric (FHWA, USDOT 2022) with a minimum of 4 ports per station.

Over the next decade, measuring trends in charging ports per station may be a key metric to monitor with the expected rapid build-out of new fast charging infrastructure across the region and nationally. It will be interesting to track trends for DCFC ports per station over the next few years as the NEVI program adds charging stations to the region and there is further development of the sector. Understanding this trend will be key in determining how to efficiently build out infrastructure that meets usage demand while being efficient in its energy requirements, land use and site constraints, and cost.

CONCLUSION

We find the current general market practice in the Southeast is 1 to 4 charging ports for Level 2 charging stations, with an average of 2.3 ports per station. This has remained largely consistent over the last decade. For DCFC stations, charging port totals often vary substantially per location, from 1 port to frequently 4, 8, or 12 ports, with an average of 4.6 ports per station. We confirm, per the NEVI program language, that the average number of ports per site in the Southeast is at least 4 ports per station, without assessing kW power levels.

In real numbers, the most common Level 2 charging station port count value is 2 (followed by 1, then 4). With DCFC stations, although the average is 4.6 per site, the most common ports per site real total is 1 port per location (followed by 8, then 4). This highlights the massive site-to-site variation in fast charging locations, which could be a result of higher costs compared to Level 2 stations, more complex grid connections, fewer stations as a whole resulting from different use cases, and other differences. However, with the NEVI program standards, this will likely impact numbers of chargers per station broadly. We find that this is the current market practice in the 12-state Southeast region, and it remains to be seen whether the ports per station metrics for Level 2 and DCFC stations remain steady or change (upward or downward) as more charging stations go online and EV market share increases. Given the need for substantial additional investment in not only DCFC, but also Level 2 destination charging for “neighborhoods, office, retail,” and similar locations nationally (Wood et al. 2023), the ports-per-station trends we identify in the Southeast provide a snapshot of how stations today are sized and a marker for possible changes over time as more ports are built-out.

While this is the current market state at large, it does not capture details between possibly relevant conditions. Future charging port trend analyses could also determine the market practices organized by key facility types, such as common charging port values at multiunit dwellings, retail categories, schools, parks and other public assembly locations, and others. Additional analyses could look at ports per station trends in urban versus rural contexts, proximity to highways, and proximity to other stations themselves, or the dynamics of larger charging stations (8 ports or more). Additional future analysis could examine the maximum power levels (kW) per site; however, this would require additional datasets to identify said power levels. Future research could conduct similar analysis across different US regions and/

or nationally as well as understanding possible risks of single-port DCFC sites for key travel linkages. Finally, a major area of future work is in carbon accounting associated with different levels of EV charging. Given the benefits of decarbonizing transportation, robust attention should be paid to the marginal emissions incurred during charging events. DCFC provides a convenient and quick solution to recharging, but if charging sessions are not coordinated with the grid dispatch appropriately, there may be impacts on marginal CO₂ emissions in a spatial and temporal sense.

These averages and other statistical indicators could be baseline, simplified metrics for prospective site hosts to consider when planning to install EV charging stations. Site hosts consider whether the number of charging ports at their site(s) aligns with industry trends shown previously in the Findings section, and, if not, if there is a basis for over- or under-building to current trends. There will be site-specific considerations, forecasts for future charging demand and expected uptake of EVs in a given area, idle times based on location type, redundancy considerations (i.e., accounting for charger outages and maintenance), proximity to other current or future charging station locations (whether near or far), and/or other requirements or minimum standards for funding programs to consider as well. With a clear industry practice for Level 2 charging stations of about 2 ports per station, the much more nascent and complex DCFC station infrastructure seems much more subject to variability when it comes to market practices involving ports per station. We welcome other regional or national analyses of this type to provide greater understanding of the context of where these Southeast trends sit. This metric may be an important one to pay attention to moving forward, as more vehicles rely on public infrastructure in the Southeast and nationally.

REFERENCES

- AFDC. 2021. *TransAtlas*. Washington, DC: Alternative Fuels Data Center. https://afdc.energy.gov/transatlas/#/?view=per_capita.
- AFDC. 2023. *Alternative Fueling Station Locator*. Accessed February 13, 2023. Washington, DC: Alternative Fuels Data Center. <https://afdc.energy.gov/stations/>.
- Borlaug, B., F. Yang, E. Pritchard, E. Wood, and J. Gonder. 2023. "Public Electric Vehicle Charging Station Utilization in the United States." *Transportation Research Part D: Transport and Environment* 114: 103564. doi:10.1016/j.trd.2022.103564.
- Brown, A., J. Cappellucci, E. White., A. Heinrich, and E. Cost. 2023. *Electric Vehicle Charging Infrastructure Trends from the Alternative Fueling Station Locator: Fourth Quarter 2022*. NREL/TP-5400-85801. Golden, CO: National Renewable Energy Laboratory. <https://www.nrel.gov/docs/fy23osti/85801.pdf>.
- CEC. 2018. *Electric Vehicle Charger Selection Guide*. Sacramento, CA: California Energy Commission. https://afdc.energy.gov/files/u/publication/EV_Charger_Selection_Guide_2018-01-112.pdf.
- Chu, K. C., J. G. Smart, and S. Schey. 2022. *Breakdown of Electric Vehicle Supply Equipment Installation Costs*. INL/RPT-22-68598-Rev000. Idaho Falls, ID: Idaho National Laboratory. doi:10.2172/1887854.
- Funke, S. Á., F. Sprei, T. Gnann, and P. Plötz. 2019. "How Much Charging Infrastructure do Electric Vehicles Need? A Review of the Evidence and International Comparison." *Transportation Research Part D: Transport and Environment* 77: 224–42. doi:10.1016/j.trd.2019.10.024.
- FHWA, USDOT. 2022. *National Electric Vehicle Infrastructure Formula Program*. 87 Federal Register: 37262–37280. June 22, 2022. <https://www.federalregister.gov/documents/2022/06/22/2022-12704/national-electric-vehicle-infrastructure-formula-program>.
- FHWA, USDOT. 2023. *Charging and Fueling Infrastructure Grant Program*. Washington, DC: Federal Highway Administration, US Department of Transportation. <https://www.fhwa.dot.gov/environment/cfi/>.
- Ge, Y., C. Simeone, A. Duvall, and E. Wood. 2021. *There's No Place Like Home: Residential Parking, Electrical Access, and Implications for the Future of Electric Vehicle Charging Infrastructure*. NREL/TP-5400-81065. Golden, CO: National Renewable Energy Laboratory. doi:10.2172/1825510.
- Keith, D., and J. Womack. 2023. "Building and Sustaining Reliable Public EV Charging in the United States." *Environmental Research Letters* 18: 011004. doi:10.1088/1748-9326/acae39.
- Knez, M., G. K. Zevnik, and M. Obrecht. 2019. "A Review of Available Chargers for Electric Vehicles: United States of America, European Union, and Asia." *Renewable and Sustainable Energy Reviews* 109: 284–93. doi:10.1016/j.rser.2019.04.013.
- LaMonaca, S., and L. Ryan. 2022. "The State of Play in Electric Vehicle Charging Services—A Review of Infrastructure Provision, Players, and Policies." *Renewable and Sustainable Energy Reviews* 154: 111733. doi:10.1016/j.rser.2021.111733.
- Metais, M. O., O. Jouini, Y. Perez, J. Berrada, and E. Suomalainen. 2022. "Too Much or Not Enough? Planning Electric Vehicle Charging Infrastructure: A Review of Modeling Options." *Renewable and Sustainable Energy Reviews* 153: 111719. doi:10.1016/j.rser.2021.111719.

- Nicholas, M., D. Hall, and N. P. Lutsey. 2019. *Quantifying the Electric Vehicle Charging Infrastructure Gap Across US Markets*. Washington, DC: International Council on Clean Transportation. doi:[10.13140/RG.2.2.22077.92647](https://doi.org/10.13140/RG.2.2.22077.92647).
- USDOT. 2023. *Charger Types and Speeds*. Washington, DC: US Department of Transportation. <https://www.transportation.gov/rural/ev/toolkit/ev-basics/charging-speeds>.
- Wood, E., B. Borlaug, M. Moniot, D. Y. Lee, Y. Ge, F. Yang, and Z. Liu. 2023. *The 2030 National Charging Network: Estimating US Light-Duty Demand for Electric Vehicle Charging Infrastructure*. NREL/TP-5400-85654. Golden, CO: National Renewable Energy Laboratory. doi:[10.2172/1988020](https://doi.org/10.2172/1988020).
- Wood, E. W., C. L. Rames, M. Muratori, S. Srinivasa Raghavan, and M. W. Melaina. 2017. *National Plug-In Electric Vehicle Infrastructure Analysis*. NREL/TP-5400-69031, DOE/GO-102017-5040. Golden, CO: National Renewable Energy Laboratory. <https://www.nrel.gov/docs/fy17osti/69031.pdf>.

APPENDIX

Table A1. Regional cumulative totals and average ports per station over time (2013–2022)

Year	Level 2 Ports per Station	DCFC Ports per Station
2013	1.7	7.3
2014	2.0	4.9
2015	2.2	5.9
2016	2.2	5.7
2017	2.5	6.3
2018	2.7	5.5
2019	2.6	5.2
2020	2.5	4.9
2021	2.3	4.7
2022	2.3	4.6

Source: AFDC 2023

Table A2. Level 2 charging port count distribution by state

State	Count of Level 2 Charging Ports per Value																									Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	24	44	50	65		
AL	24	123	6	14	3	4	1	1	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	178
AR	26	108	7	17	1	10	—	2	—	1	—	3	—	—	—	1	—	—	—	—	—	—	—	—	—	176
FL	504	1428	88	96	21	42	1	8	8	9	1	2	1	1	2	2	2	—	1	2	—	1	1	—	—	2221
GA	161	873	41	61	5	27	5	9	5	6	1	4	1	1	—	—	—	1	—	—	—	—	—	—	—	1201
KY	44	121	9	21	—	1	—	1	—	—	—	1	—	—	1	—	—	—	—	—	—	—	—	—	—	199
LA	29	77	11	7	2	5	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	132
MS	18	25	7	12	—	6	1	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	71
NC	145	572	20	59	3	10	—	4	1	2	—	3	1	—	—	1	—	—	—	—	1	—	—	—	—	822
SC	72	152	9	14	2	3	1	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	256
TN	118	324	18	17	2	9	1	4	—	5	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	500
VA	183	495	46	63	#	22	1	8	—	1	1	1	1	1	—	—	—	—	—	1	1	—	—	—	1	841
WV	29	34	12	11	1	2	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	91
Total	1353	4332	274	392	55	141	12	42	15	26	3	16	5	3	3	4	2	1	1	3	2	1	1	1	1	6688

Source: AFDC 2023

Table A3. DCFC charging port count distribution by state

State	Count of DCFC Ports per Value																			Total
	1	2	3	4	5	6	7	8	10	11	12	13	14	16	18	20	24	30	35	
AL	27	—	—	8	—	3	—	6	—	—	6	—	—	2	—	—	—	—	—	52
AR	4	—	—	5	—	1	1	4	1	—	—	—	—	—	—	—	—	—	—	16
FL	134	4	7	31	1	21	1	69	9	—	21	1	3	9	2	1	—	—	1	315
GA	130	9	1	32	2	6	—	11	7	2	15	—	—	3	—	—	1	1	—	220
KY	6	—	—	4	—	1	—	7	—	—	2	—	—	—	—	—	—	—	—	20
LA	16	—	1	2	—	3	—	8	—	—	2	—	—	1	—	—	—	—	—	33
MS	7	—	—	—	—	1	—	6	—	—	2	—	—	—	—	—	—	—	—	16
NC	64	8	2	10	—	5	—	29	3	1	17	—	—	1	—	—	1	—	—	141
SC	13	4	—	7	—	—	—	11	1	—	5	—	—	2	1	—	—	—	—	44
TN	30	3	1	8	—	2	—	11	1	—	6	—	—	—	—	—	—	—	—	62
VA	45	30	3	50	—	6	—	40	4	—	5	—	—	—	3	1	—	—	—	187
WV	7	—	—	1	—	1	—	11	—	—	—	—	—	—	—	—	—	—	—	20
Total	483	58	15	158	3	50	2	213	26	3	81	1	3	18	6	2	2	1	1	1126

Source: AFDC 2023

Author Affiliations

Trey Gowdy, Nicholas Institute for Energy, Environment & Sustainability, Duke University
Richard Simmons, Strategic Energy Institute, Georgia Institute of Technology

Citation

Gowdy, T., and R. Simmons. 2023. *Trends in Electric Vehicle Charging Ports per Site in the Southeastern United States*. NI R 23-06. Durham, NC: Duke University. <https://nicholasinstitute.duke.edu/publications/trends-electric-vehicle-charging-ports-site-southeastern-us>.

Acknowledgments

This research was supported by funding from Energy Foundation.

Trey Gowdy is affiliated with the National Electric Vehicle Infrastructure (NEVI) Program through a separate project, funded by a federal subaward, to support regional coordination and implementation with state energy offices and departments of transportation as part of a federal, state, and non-profit collaboration.

Review

This report was reviewed by an expert in the field of energy data analytics:

- Kyle Bradbury, Assistant Research Professor, Department of Electrical & Computer Engineering, and Director, Energy Data Analytics Lab, Nicholas Institute for Energy, Environment & Sustainability, Duke University

Cover image by [Kate Scott via Shutterstock](#)

Published by the Nicholas Institute for Energy, Environment & Sustainability in 2023. All Rights Reserved.

Publication Number: NI R 23-06

Nicholas Institute for Energy, Environment & Sustainability

The [Nicholas Institute for Energy, Environment & Sustainability](#) at Duke University accelerates solutions to critical energy and environmental challenges, advancing a more just, resilient and sustainable world. The Nicholas Institute conducts and supports actionable research and undertakes sustained engagement with policymakers, businesses, and communities—in addition to delivering transformative educational experiences to empower future leaders. The Nicholas Institute's work is aligned with the [Duke Climate Commitment](#), which unites the university's education, research, operations and public service missions to address the climate crisis.

Contact

Nicholas Institute
Duke University
P.O. Box 90467
Durham, NC 27708

1201 Pennsylvania
Avenue NW
Suite 500
Washington, DC 20004

919.613.1305
nicholasinstitute@duke.edu

nicholasinstitute.duke.edu