INVESTMENT IN PUBLICLY ACCESSIBLE EV CHARGING IN THE UNITED STATES (2023)

An updated overview of current and historical funding from government, utilities, and the private sector

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Acknowledgements

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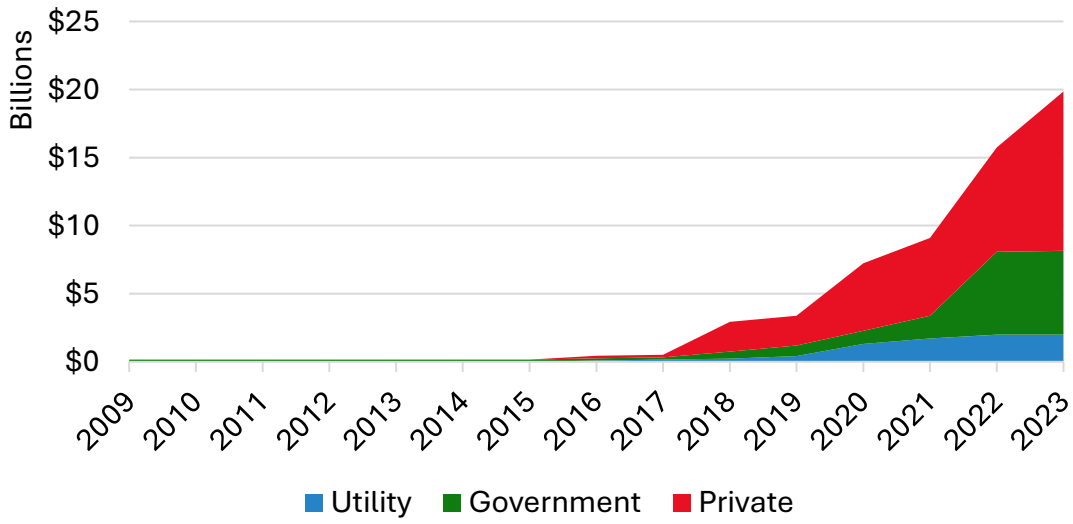
Correction: A correction was made on May 22, 2023 to Figure 1 in the Executive Summary to add missing government investments, which increased the total cumulative investment from $18.3B to $19.9B.

Executive Summary

Growth in the electric vehicles (EV) market within the past decade has led to increased demand for publicly accessible EV charging stations across the United States. In response, significant funding from governments, electric utilities, and private investors has been committed to install public charging stations nationwide. Total announced and awarded investments have especially accelerated in recent years, reaching nearly $20 billion by early 2023.

For comparison, Atlas Public Policy estimates that nearly $40 billion will need to be invested in public charging infrastructure between 2021 and 2030 to put the United States on a glide path to 100 percent passenger EV sales by 2035. This figure balloons to nearly $90 billion when considering all passenger vehicle charging and Atlas estimated widescale electrification of medium- and heavy-duty vehicles would require an additional $100 to $166 billion, largely before 2035. Thus, a sizeable gap remains between needed investments and committed public and private funding. Importantly, the spending of these funds on charging infrastructure is not guaranteed and the investments will not happen overnight as some government and utility programs will last up to five years.

Figure 1: Cumulative announced and awarded investments in public EV charging



This figure shows announced and awarded investment in public EV charging. Government includes state and federal funding, and some funding may not go towards publicly available charging. Similarly, some amount of the private investments shown here will not go towards public charging. Utility shows only approved funding for programs where public EV charging was an eligible use.

Private investment in public EV charging has increased considerably in the last five years rising from under $200 million in 2017 to nearly $13 billion by early 2023. This marked increase in investment makes the private sector the single largest investor in charging infrastructure deployment though it is difficult to estimate how much of these investments will go to public charging rather than company operating costs. Growth in private investment stemmed from the proceeds from initial public offerings by leading charging companies and commitments from large companies like General Motors and Daimler. The ability for more charging companies to raise money through stock offerings will be limited as the market matures and investors scrutinize the viability of various charging business models.

The government is the second largest investor in charging infrastructure with more than $6 billion committed to deploying charging stations. States across the country have increased the cumulative funding committed to public EV charging stations five-fold from around $300 million in 2018 to more than $1.6 billion by early 2023. Much of this recent investment has been driven by distributions to states from the Volkswagen Diesel Emissions Environmental Mitigation Trust as part of Volkswagen's settlement with the federal government and the State of California for violations of the Clean Air Act. Through the Infrastructure Investment and Jobs Act and the Inflation Reduction Act, the federal government is expected to invest several billion dollars in EV charging this decade.

Electric utilities are the third largest investor in charging deployment, with more than $5 billion of approved investments in transportation electrification; $2 billion of these funds are eligible for public EV charging.[1] Utilities are expected to play an increasingly important role, particularly as very high-powered charging is deployed nationwide. Investor-owned utilities have filed requests to state commissions for more than a decade to implement ratepayer-funded programs to roll out public EV charging stations. Such programs typically focus on utilities providing rebates to customers who install and operate charging stations; utilities investing in the infrastructure to support public charging stations; and utilities building and operating stations. The number of requests being filed with state commissions, as well as the overall amount of funding requested has increased significantly in recent years.

The pace of charging infrastructure deployment is expected to rapidly increase throughout the decade as EV adoption rises and the implementation of recently funded federal programs accelerate. The infrastructure being deployed now will be put to the test as the EV market moves from early adopters, who are typically patient with new technology, to mainstream drivers. The successful deployment of infrastructure will require the private sector,

[1] The $5 billion in approved investments only includes funds approved in transportation electrification programs. This does not include funds invested by utilities for electrical grid upgrades or other expenditures that are related to EVs but are not included in the program spending.

government, and utilities to work together closely and ensure the user experience meets the expectations of the everyday driver in terms of charger reliability and performance.

Foreword to the 2023 Update

In February 2020, Atlas Public Policy and the Alliance for Transportation Electrification (ATE) published an issue brief that provided an overview of the historical and current state of government, private sector, and electric utility investment in publicly available charging infrastructure in the United States. There have been significant changes to the investment landscape for EV charging since then. This report provides an updated snapshot of publicly accessible EV charging across the country, along with recent investments committed, awarded, and implemented. Furthermore, the recent acceleration of growth in EV sales combined with a new commitment to transportation electrification goals by an increasing number of states and the federal government since the original brief was published demonstrates that the demand for public charging is only expected to grow. As more EVs hit the road, the recent increase in pledged investments from both government funding and electric utilities can continue to build a solid foundation of infrastructure and programs upon which private companies will be positioned to build sustainable business models.

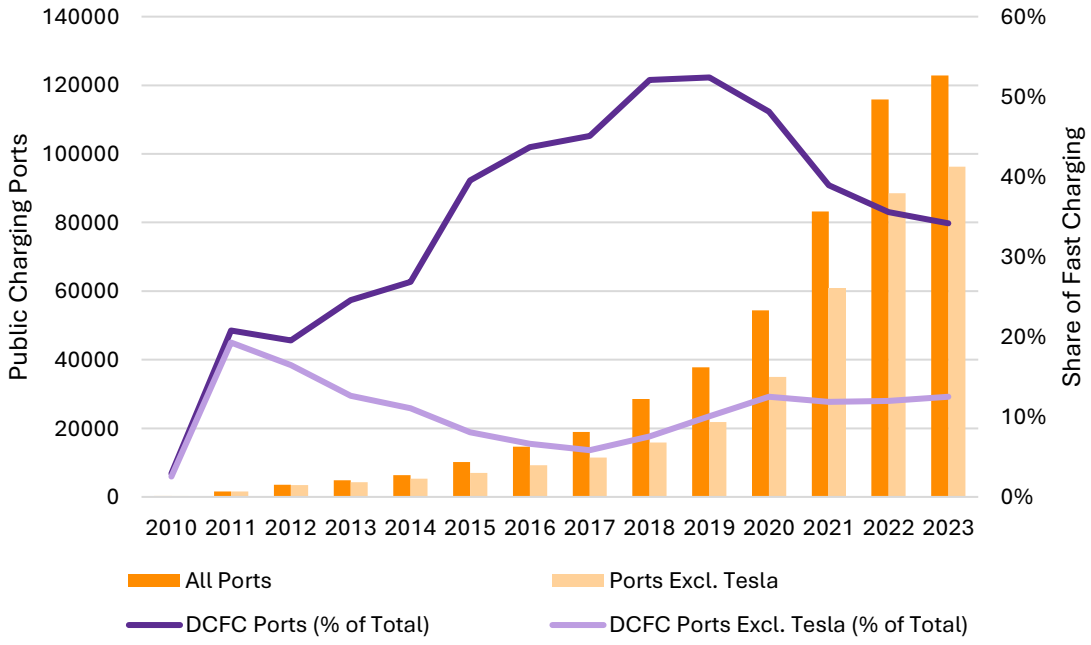
Overview of Publicly Accessible EV Charging

The growth of electric vehicle (EV) market has accelerated within the United States in recent years, growing from 350,000 sales in 2018 to nearly one million in 2022 [1]. This growth is expected to continue for the foreseeable future across the country as several factors combine to make battery powered EVs the dominant vehicle technology on the road [2]. One such factor is the rollout of infrastructure that provides publicly accessible EV charging, particularly DC fast charging (DCFC). This infrastructure is critical since it both extends an EVs total range between home charges and allows drivers without access to home charging to recharge.

Publicly accessible EV charging infrastructure in the United States has grown from fewer than 500 ports in 2010 to more than 131,000 ports at more than 50,000 locations as of February 2023. Removing Tesla's proprietary ports reduces this count to around 108,000 ports at nearly 47,000 locations, though Tesla has recently begun to offer charging services to non-Tesla vehicles [3, 4]. While a potential convergence on more open charging access

appears to be underway, much work remains; for example, Tesla recently opened its charging connector for use by other automakers though it does not appear any manufacturers plan to use it [5].

Figure 2: Publicly accessible EV charging ports in the United States by year



This figure shows the cumulative number of public EV charging station ports in the United States from December 2010 to February 2023. This count is split out to also identify how many public ports do not use Tesla's proprietary plug. The share of overall public plugs that are DCFC and those plugs that are not Tesla is plotted over time on the secondary Y-axis.

Source: [3]

Level 2 Charging Versus DCFC Stations

EV charging can be categorized primarily into two different scenarios, the first of which is charging the vehicle during times when it would otherwise be sitting idle. Although this scenario, which typically aligns with Level 2 (L2) charging, often occurs at home or work for most people, it is not limited to these locations. Any time an EV is parked at a destination with publicly accessible charging, there is an opportunity to top up the battery. In this way, the prevalence of publicly accessible L2 charging stations can help drivers to maintain a charged battery between home charges. Additionally, in many cases, workplace or home chargers are a vehicle's primary charging station.

The second scenario focuses on charging a vehicle as an intentional act of refueling, like visiting a gas station in a conventionally fueled vehicle. This would be more relevant to those who either cannot charge at home or work; or those who drive beyond their EVs range in a single day or journey. Such a scenario is best handled by high-power DCFC stations. However, while DCFC is significantly faster than L2, it is more expensive to install and operate, with these additional costs typically being passed onto users. Therefore, it is essential to place these more expensive DCFC chargers strategically and recognize use cases where L2 chargers would be a better choice for the customer, given tradeoffs between cost and convenience. As of early 2023, the share of ports that provide L2 charging accounts for around 73 percent of the total port count in the United States, with the remaining 31 percent of ports being DCFC. [3]

What Makes an EV Charging Station Publicly Accessible?

The distinction between a charging station, or electric vehicle supply equipment (EVSE), that is publicly accessible and a charging station not available to the public is not defined consistently across the country. Several states have adopted the same definition to distinguish what makes a charging station, "public": "*Public electric vehicle charging station means an EV charging station located at a publicly available parking space*" [6, 7, 8].

For government programs, public charging can carry with it additional requirements with some use cases being valid in some states and not others. Relevant factors here include accessibility and payment methods for the charger and the parking space. One leading example is the rule in California, where the definition goes further in specifying the public accessibility of the charging station: [9]: "*[Publicly available EVSE] means an EVSE and associated parking space or spaces designated by a property owner or lessee to be available to, and accessible by, the public for any period of time. An EVSE designated by a lessee or a property owner to be available only to customers or visitors of the business is a publicly available EVSE for purposes of this chapter. EVSE and associated parking spaces located in parking garages or gated facilities are considered publicly available for purposes of this chapter if any member of the public can obtain vehicular access to the facility for free or through payment of a fee.*"

Staff from the New York Department of Public Service (DPS) proposed a slightly broader definition in its January 2020 whitepaper [10] where it referred to publicly accessible as, "*meaning without access fees or restricted access.*" In August 2021, New Jersey's Board of Public Utilities published a notice [11] that defined publicly accessible charging for medium- and heavy-duty vehicles: "*Publicly-Accessible Medium and Heavy Duty Charging*

refers to a medium- and heavy-duty charger that is available to the public either on a drive up, subscription, or scheduled basis. Such chargers are owned and operated by site owner, property manager, or management company, EVSE Infrastructure Company or, in limited cases as approved by the board, an EDC."

In some cases, denoting a charging station as "public" can simply identify it as not "private." The United States Department of Energy's Alternative Fuels Data Center (AFDC) provides an "Electric Vehicle Charging Station Locations" tool that, by default, maps public EV station locations. This tool's guidance implies that public stations exclude, "private fleet fueling stations (e.g., transit bus fueling facilities, other medium- and heavy-duty fueling and charging infrastructure), workplace charging stations, and multi-family housing charging stations". [12]

The issues of "interoperability" or open standards and protocols are sometimes conflated with the rules on public accessibility but ought to be considered separately. While both station access and interoperability help to ensure a satisfying experience for the EV driver, interoperability refers to hardware and software standards and procedures, such as the universal hardware plug (J-1772, or CCS Combo for DC fast charging). Networked infrastructure includes protocols and emerging standards, such as the method to initiate a charging session, that cannot be adequately addressed in this paper. Interoperability also refers to payments and billing systems, bilateral or multilateral agreements among charging service providers, smart charge management, and more. Groups such as the Open Charge Alliance have been promoting open protocols, such as Open Charge Point Protocol (OCPP). This report relies on the definition of public accessibility provided by leading organizations, government agencies, and other regulatory bodies.

Public EV Charging Investments

Investments in publicly accessible EV charging stations began over a decade ago with federal funding for competitive grants. Since then, investments in EV infrastructure have evolved across many sources and sectors, including federal and state governments, private investments from charging service providers and auto manufacturers, approved investor-owned utility programs, and the government-mandated funding from the VW settlement. Investments will need to continue to accelerate to put the United States in a leadership role in the global EV market. Atlas Public Policy estimates that nearly $40 billion will need to be invested in public charging infrastructure between 2021 and 2030 to put the United States on a glide path to 100 percent passenger EV sales by 2035 [13]. Importantly, the research was optimized for cost efficiency and assumed DCFC could deliver power at up to 350 kilowatts, which only a small fraction of stations can accomplish today.

This paper relies on public statements to track government funding made available and awarded, approved utility programs, and private sector investments in charging infrastructure.

Government Investments in EV Charging

Government is often a first mover in facilitating the deployment of new technologies, and EV charging is no different. While the federal government was a pioneer in this regard, state agencies have carried the load for much of the 2010s though most states did not implement standalone programs funded with state funds. Recent action by Congress and the Biden Administration, however, signals the federal government will regain its leadership position with regards to public investments in EV charging.

Pioneer Funding from the Federal Government (2009-2015)

Most early funding for publicly accessible modern EV charging infrastructure in the United States was enabled with the enactment of the American Recovery and Reinvestment Act (ARRA) of 2009. This Act included more than $700 million in competitive, cost-share grants specifically directed towards clean transportation projects, including EVs and charging infrastructure. Around $400 million from ARRA funded projects was overseen by the Idaho National Laboratory [14, 15], of which $152 million was committed to deploy over 17,000 Level 2 charging stations and more than 100 DCFC across 22 regions of the United States at both private residences and public locations [16].

This early funding from ARRA laid the foundation for networks of publicly available chargers to take shape at a regional- or state-level.

Volkswagen Settlement Fills a Gap (2016-Present)

In 2016, the Volkswagen Diesel Emissions Environmental Mitigation Trust was established as part of Volkswagen's settlement with the federal government and the State of California for violations of the Clean Air Act. This trust made available to states a total of $2.7 billion to fund projects to reduce emissions from the transportation sector, with up to 15 percent of each state's allocation available to fund EV charging infrastructure for passenger vehicles. As of March 2023, states have collectively awarded over $250 million from this Trust towards projects focused on EV charging stations.

Although only 15 percent of a state's share of the VW Settlement can be used for EV charging stations for passenger EVs, this still amounted to a significant increase in the availability of charging station funding for most of the country. Through February 2023, approximately 62 percent of the $424.8 million available across all states for EV charging stations

had been committed by states. Each state's allocation and use of this funding is shown in *Appendix A*.

In addition, the settlement agreement required Volkswagen to invest $2.0 billion in EV infrastructure over 10 years. Volkswagen created a subsidiary called Electrify America to build out light-duty charging infrastructure nationally. Of the $2.0 billion, $800 million was allocated for California and $1.2 billion was to be spent in the remaining states. Government oversight of this program is housed in both federal EPA and California Air Resource Board, with the consent decree requiring four 30-month investment cycles. Electrify America is slated to complete the third investment cycle in July 2024 [18].

States Funding Accelerates (2018–Present)

In addition to funding from the VW settlement, state agencies have directly funded EV charging station installation through legislative appropriations. California, New York, Colorado, Washington, and other states have been leaders in providing state incentives and grants for EV charging infrastructure, but other states have adopted a variety of programs as well. Nearly all state-directed funding has been made available or awarded since 2018.

Select state funding programs are listed in Table 1, splitting out the amount of funding from each program that has been awarded and how much remains available as of March 2023. The largest single state-funded program is the $250 million committed by the New York Power Authority (NYPA) for EVolve NY in 2019 [19]. Another New York program is the state's Green New Deal with $31.6 million in funding available [20]. California's program with the highest level of state-funding for EV charging is the Clean Transportation Program, formerly known as the Alternative and Renewable Fuel and Vehicle Technology Program [21], implemented by the California Energy Commission [22]. The agency also oversees the California Electric Vehicle Infrastructure Project (CALeVIP), which is also among the leading state-funded programs for investing in EV charging [23].

Other small but notable programs include charging programs in Colorado, Texas, and New York using Volkswagen Settlement funds, along with programs in Massachusetts, Florida, and Washington. Texas's funding was awarded by the Texas Commission on Environmental Quality as grants to subsidize the purchase and installation of both publicly accessible DCFC and L2 charging stations [24]. Florida similarly implemented the EV charging investment from the VW settlement as grants [25]. In Massachusetts, the state's Climate Mitigation Trust provides funds to reimburse the installation of publicly accessible charging stations, including DCFC stations [26]. The funding for these grants is supplemented by the state's allocation of the VW settlement. The Charge Ahead Colorado program has been funding the deployment of DCFC and L2 stations through grants since 2013 [27]. Lastly, Washington state has deployed an innovative charging program for fast charging stations

with more than $10 million since 2017. The program includes requirements that encourage the use of innovative business models for the charging site [28].

Table 1: Largest state-funded programs for investment in EV charging

State	Funding Program	Funding Available	Funding Awarded
NY	EVolve NY	$250 million	Unknown
CA	Clean Transportation Program	$207.7 million	$20.6 million
CA	CALeVIP	$29.5 million	$134.8 million
NY	Green New Deal	$31.6 million	
TX	VW Settlement		$31.3 million
MA	Massachusetts Climate Mitigation Trust	$14 million	$11.6 million
FL	VW Settlement	-	$24.9 million
CA	Advanced Technology Demonstration and Pilot Projects	-	$23.7 million
NY	VW Settlement	$11 million	$5 million
CO	Charge Ahead Colorado	$9 million	$10.3 million
WA	Zero-emission Vehicle Infrastructure Partnerships grant	$3 million	$10.3 million

This table shows leading state-funded programs as of March 2023. The funding per program is split between “available” and “awarded”, with sum of those two categories representing the total funding. Note VW Settlement funds were not from state appropriations and were provided to states through the 2016 legal settlement with Volkswagen.

Source: [22]

Recently, California increased its overall investments through the announcement of two program plans from the California Energy Commission and California Public Utilities Commission. The Energy Commission’s investment plans for 2022-2023 proposed to increase investments in its clean transportation program by 30 times compared to 2019 with a potential infusion of $2.4 billion from the state’s general fund [29]. The most recently adopted program plan called for $900 million in light-duty infrastructure and $1.7 billion in medium- and heavy-duty vehicle infrastructure by 2026. In addition, the California Air Resources Board in December 2022 adopted an ambitious plan for $2.6 billion in clean transportation incentives, including consumer vehicle rebates and investments in medium- and heavy-duty and off-road infrastructure [30]. While these agency investment totals are in flux at the

time of this report, the latest draft plans and budget proposals retain nearly 90 percent of the state's EV investments. In addition, California continues to push on EV supply through regulatory policy (see Box 1).

Box 1. Regulation Can Drive Demand for Public Charging

Regulations such as California's Advanced Clean Cars (ACC) rule have required manufacturers to advance EV technology faster than would have occurred otherwise. ACC, which has been adopted by 17 states, includes requirements on manufacturers to make available for sale an increasing share of their passenger vehicles as EVs over time. Between 2021 and 2022, California Air Resource Board published two additional rules that similarly require manufacturers to replace internal combustion engine vehicles with EVs: Advanced Clean Trucks (ACT), and Advanced Clean Cars II (ACC II). While ACT specifically targets medium-duty and heavy-duty vehicles, the requirements of ACC II will result in the end of selling combustion engine passenger vehicles in the state by 2035. Thus far, six other states have adopted the ACCII rules though more are expected to follow in 2023. Increased EV adoption to comply with ACCII and similar regulations will accelerate activities around all use cases for EV charging.

Federal Government Regains Leadership Position (2021-Present)

Federal funding for EV infrastructure was lagging state efforts until Congress passed an historic infrastructure bill ($1.2 trillion over 8 years in funding), which was signed into law by President Biden on November 15, 2021. Substantial funding opportunities for EV charging are now being made available through the Infrastructure Investment and Jobs Act (IIJA also referred to as the Bipartisan Infrastructure Law or BIL). The law contains two primary sources of funding over five years for publicly accessible EV charging stations: $2.5 billion under the Discretionary Grant Program for Charging and Fueling Infrastructure, to be administered by the Federal Highway Administration; and $5 billion through the National Electric Vehicle Formula Program (NEVI), a formula funding program for state transportation departments, also administered by the Federal Highway Administration. Importantly, federal funding through the NEVI program can only cover 80 percent of total project costs. The remaining 20 percent is to be covered by either state- or private-funding. See Appendix B for a breakdown by state.

The discretionary grant program, which was publicly announced on March 14, 2023, is composed of two distinct programs, each with $1.25 billion of funding [31]. The first of these programs is the Corridor Charging Grant Program, which focuses on deploying

publicly accessible charging and fueling stations along designated alternative fuel corridors. The other program is the Community Charging Grant Program, which focuses on increasing EV charging access in disadvantaged communities (primarily rural communities and low- and moderate-income communities). Unlike NEVI funding, these two competitive grant programs are also open to applicants in the state who wish to propose alternative fueling stations (e.g., hydrogen or natural gas). The first Notice of Funding Opportunity was issued on March 14 and set forth up to $700 million in funding [32] though this funding is not included in the tallies shown in this report because government funding tracking is only through February of 2023.

The passage of IIJA in late 2021 marks the largest single government investment EV infrastructure by any single sector to date. This was an historic bill with bipartisan support covering many types of federal investments in infrastructure such as grid modernization, resiliency, traditional transportation investments, broadband, and water. The state transportation departments are expected to begin issuing awards for NEVI in 2023.

Less than a year after the passage of IIJA, the Inflation Reduction Act (IRA) was signed into law. The IRA includes a reformed and extended Alternative Fuel Vehicle Refueling Property Credit. The credit now runs through 2032 and the cap was raised for individual charging equipment from $30,000 to $100,000, reflecting the increased need for more expensive fast charging deployments. The cost of the credit is estimated to be $1.7 billion [33]. The IRA also contains a wealth of other EV-related direct investments and tax credits worth as much as $100 billion.

Summary of Government Investments

Government funding was an early catalyst for action on deploying EV charging. Beginning with ARRA in 2009 and through today with IIJA, the federal and state governments have been on the forefront of advancing EV charging nationwide. Table 2 and Figure 3 break down the major government funding sources. Table 2 shows how California and New York lead in state funding and Figure 3 shows the significant momentum of EV charging funding since 2018. While there is no guarantee that government will invest all of this announced funding in EV charging infrastructure, and some of these programs will last up to five years, the recent commitments by government are a clear sign that the public sector is increasingly supportive of charging infrastructure expansion.

Government funding has been, and continues to be, a critical source of investment to roll out publicly available EV charging stations. However, there are other sources beyond public funding that are helping to transition towards established electrification goals. While the business case continues to develop for private investment to sustain the implementation

of EV stations, electric utilities play a key role in funding such stations as well as the necessary supporting electrical infrastructure.

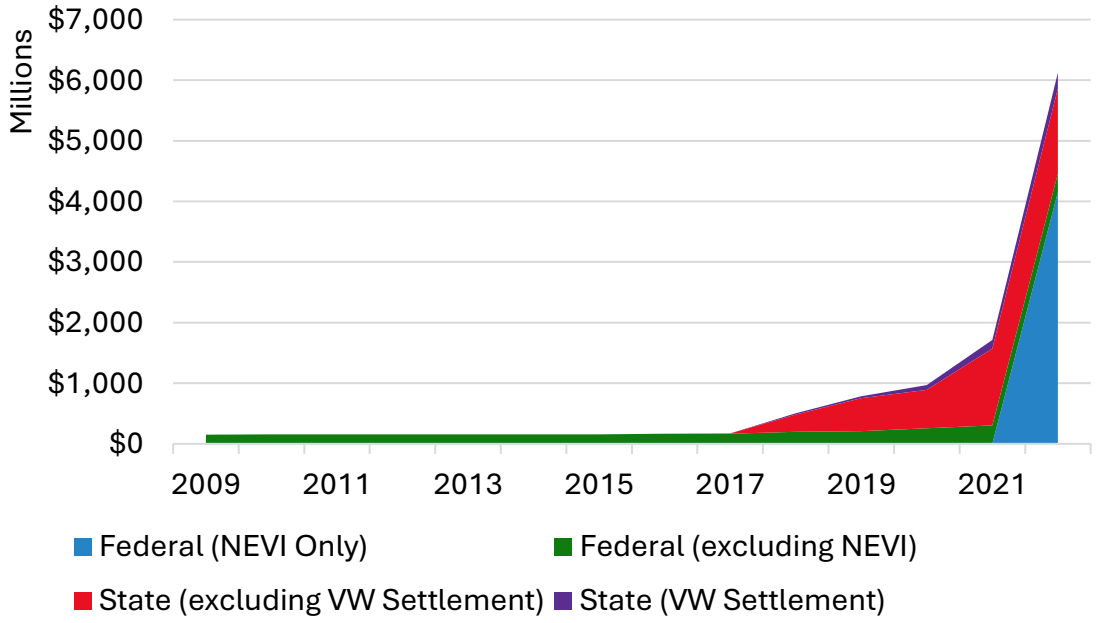
Table 2: Summary of state government investment in EV charging by funding source

State	Federal Investment (Excluding NEVI Funding)	NEVI Formula Funding	State Investment (Excluding VW Settlement)	VW Settlement Funding
California	$32.0 million	$383.7 million	$1,014 million	$5.0 million
New York	$1.7 million	$175.5 million	$303.6 million	$22.0 million
Other states	$272.7 million	$3,595 million	$86.9 million	$231.5 million
National Total	$306.4 million (5%)	$4,155 million (68%)	$1,405 million (23%)	$258.5 million (4%)

This table presents the distribution of government investment in EV charging stations through February 2023 for several major funding sources. California and New York are split out to demonstrate their relatively strong state-level investment (excluding VW settlement funding) compared to other states. The percentages included in the "National Total" row indicate how much each funding category represents of the overall total across all four categories.

Source: [22]

Figure 3: Cumulative government investment in EV charging



This figure shows the cumulative government investments in EV charging stations split out into four different categories. Federal funding is divided out to show the NEVI formula funding separately. State funding is divided out to show the VW settlement funding separately. Cumulative funding is since 2009.

Source: [22]

Electric Utility Investments in EV Charging

Utilities play an essential role in deploying EV charging infrastructure in several ways: being the primary supplier of fuel, integrating increased electrical loads into the electrical grid, conducting outreach and education to customers, and creating rate designs that benefit both customers and the grid by preparing for additional charging infrastructure. Utilities can help enable market transformation in a number of ways, including make-ready incentives that provide all or a portion of the electrical infrastructure to the charger site; EVSE rebate incentives from an approved product list; owning and operating the charging system end-to-end including the charger; leasing the EVSE to the customer for a defined period; and other partnership options with local governments or organizations.

The EV-related programs for utilities vary among the states and often include a portfolio approach, such as charging at single- and multi-family homes, at workplaces, for public transit agencies and other fleets, and public metro EVSE charging hubs or along highway corridors. Commissions must determine that the programs are designed in a way that is consistent with state policies, benefits consumers and the grid, and satisfies the balance

of costs and benefits, typically through a commission-approved cost-benefit analysis. Ultimately, state commissioners are entrusted to balance the interests of stakeholders in the EV ecosystem in a way that satisfies the public interest based on evidence in the case.

As of December 2022, investor-owned utilities have been approved to invest greater than $5.2 billion in transportation electrification in 34 states with nearly $2 billion eligible for publicly available charging stations in 31 states (see Figure 4).[2] Importantly, $333 million of the $2 billion investment in public charging is targeted at underserved communities. Utilities have an additional $1.9 billion for transportation electrification in 26 states awaiting commission decision; of this pending amount, $1 billion in 25 states would be targeted at public EV charging.

[2] The $5.2 billion in approved investments only includes funds approved in transportation electrification programs. This does not include funds invested by utilities for electrical grid upgrades or other expenditures that are related to EVs but are not included in the program spending.

Figure 4: Cumulative utility investment in public EV charging in leading states

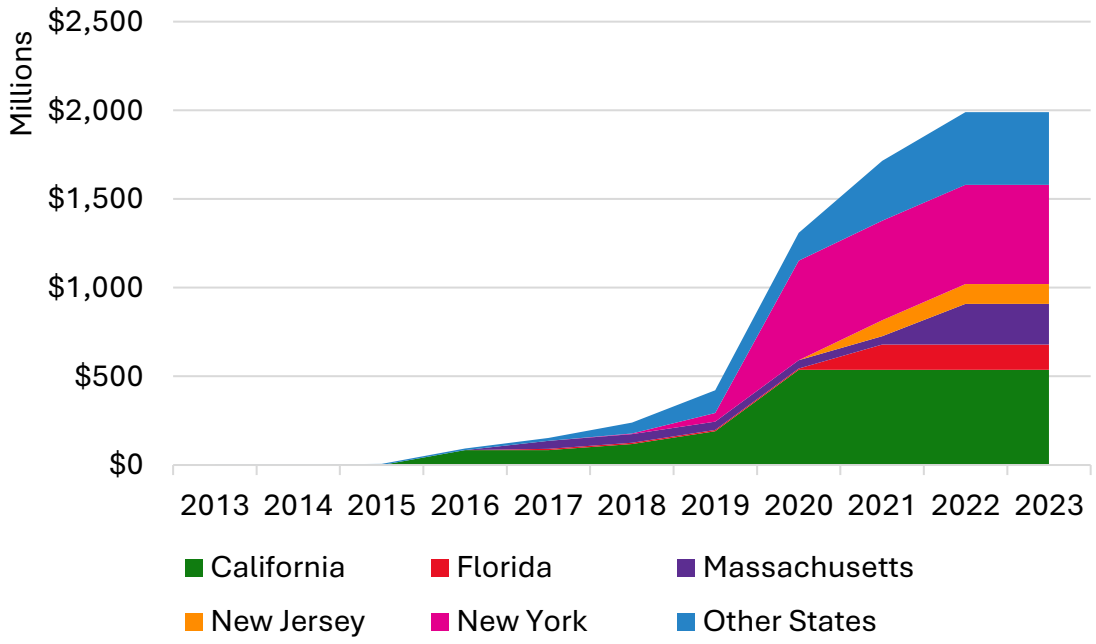


Figure 4 shows the cumulative utility investment each year for public EV charging infrastructure within leading states. States with a cumulative amount exceeding $100 million by December 2022 are called out specifically, with all other states being included in "Other States." This total includes all program funding eligible for public EV charging that has been approved.

Source: [34]

Drivers of Utility Engagement in Public EV Charging

In 2010, around the same time that projects funded by ARRA were being implemented, electric utilities began exploring their role in the EV market. Efforts from California's investor-owned utilities (IOUs) to advance transportation electrification were largely halted by the California Public Utilities Commission (CPUC) in 2011 due to concerns from the commission about the impacts of utility investments on the private market. EV infrastructure proceeded to be developed in an uneven and inequitable way in California even as adoption increased. These concerns resulted in action by the CPUC in 2014 and from the state legislature in 2015 through Senate Bill 350, which stated that regulated utilities play a key role in market transformation, that comprehensive EV planning is in the public interest, and that each utility was required to submit detailed plans and programs with tariffs to the Commission for its review and approval [35].

Other states have pursued either legislation or regulatory frameworks, or both, to emphasize the key role of the regulated utility. In some states, governors have acted through

Executive Order to set forth broad goals of EV adoption both for light-duty and medium-heavy duty vehicles and urged public utility commissions and other state agencies to take action. The requirement for the utilities to develop broad transportation electrification plans as part of a state electrification strategy became a best practice, such as California (SB 350), Colorado (SB 19-077), Oregon (SB 1547), and Washington (HB 1512 and HB 1853). Following approval of such plans, the utilities generally propose to their commissions specific programs to implement the plan either through a general rate case or separate proceeding.

In Minnesota and Arizona for example, the state commissions acted to engage with the actors in the EV ecosystem to develop policy guidance in advance of a utility proposal without specific direction from the state legislature. In the early phases of EV infrastructure when most utility engagement focused on pilot programs, this sentiment was common though many states have required additional legislative authorities to establish direction and guidance as the EV industry rapidly scales up.

Roles for Utilities in Support of Public EV Charging

The most common forms of utility programs in EV infrastructure are utility rebates for chargers often from an approved product list; utility-directed make-ready investments in front of meter and behind the meter in some cases; and direct utility ownership and operation of charging stations. Of the $2 billion that has been approved for utilities to invest in public EV charging, $1.2 billion (60 percent) has been directed towards make-ready investment; $230 million (12 percent) has been allocated for direct rebates and incentives to lower the cost of EVSE to customers; and $479 million (24 percent) has been approved for utility ownership and operation of EVSE (see Table 3) [34].[3] Importantly, publicly available charging is often one of many potential use cases for the funding programs and the total investment in public charging will only be known at the conclusion of the programs.

The amount approved for investment in a make-ready or rebate incentive is often at a maximum level and is subject to eligibility requirements as specified in the tariffs approved by public utility commissions. Utilities can often offer their customers a choice of the charger (i.e., bring your own charger) or whether the customer wants to assume responsibility for the customer side of the meter for make-ready or electrical panel upgrades, or allow the utility to undertake that work.

[3] Utility ownership and operation of EVSE includes programs where customers lease utility-owned equipment and programs where the utility may only own some of the equipment in the program.

Table 3: Range of roles for utility in public EV charging programs

Utility Role	Description	Example Program	Approved Investment	Utilities (States)
Make-ready investments	Utilities invest in the electrical infrastructure needed to support EVSE operation, either on the utility-side (utility-owned) or the customer side (utility-incentivized)	Joint Utilities of New York's EV Make-Ready program investing $701 million over 5 years; primarily make-ready incentives [36]	$1.2 billion	26 (14)
EVSE rebates	Utilities provide customers a financial incentive to purchase, install, and operate EVSE	Entergy's eTech program providing Arkansas customers a rebate of $250 for installing an L2 and up to $1,500 for a DCFC station [37]	$230 million	26 (19)
Utility owned & operated EVSE	Utilities purchase and operate EVSE within their service territory	Florida Light & Power's $205 million program, which includes a $100 million budget for the utility to own and operate DC fast chargers. [38]	$479 million	28 (22)

The make-ready investment model, namely offering incentives to build the electrical infrastructure all the way to where the vehicle will be charged, has been looked at favorably by many public utility commissions. The make-ready model provides considerable benefits to the business of providing charging services through reduced upfront costs and allows the utility to be more closely engaged in projects with large electric loads. These programs have tended to have larger funding levels than other programs. In fact, 60 percent of approved funding for public EV charging is for make ready programs and more than 90 percent of proposals for make-ready have been approved. Only three filings were denied with the two top reasons from commissions being an insufficient demonstration of benefits to the ratepayer and an insufficient evaluation of data from existing programs [34].

The EVSE rebate role for utilities is similar to how utilities operate energy efficiency and other electrification programs, like hot water or air source heat pump appliance rebates. In these cases, the utilities require customers to provide straightforward documentation on the charger. Evaluating the effectiveness of these programs, such as customer responses to rate designs or managed charging, can be challenging because the utility role is more

limited. Rebate programs make up just 11 percent of total funding approved for utilities and programs have been approved more than 80 percent of the time. For the seven filings that were rejected, the top reason cited by commissions was the insufficient demonstration of benefits to the ratepayer. Although early pilot programs usually did not require a full-scale cost-benefit analysis, commissions usually insisted on the utility measuring carefully the costs and benefits of such programs, and gauging how customers respond to the incentives.

Although the model where the utility owns and operates the charger can be more contentious, Washington, Colorado, Maryland, Arizona, California, Hawaii, and other states, have approved this role through multiple proceedings providing evidence of their success. Importantly, utilities have an obligation to serve all customers regardless of income or geography when service is requested. In regulatory proceedings, the utility is often asked to dedicate resources to the more challenging use cases for the private sector, such as multi-family dwellings, underserved and environmental justice communities, and rural areas. Utilities have successfully made the case to provide charging in this manner, albeit at smaller funding levels than make ready programs, accounting for less than 25 percent of approved funding for public EV charging. In the seven filings where commissions have denied the utility proposal, the top three reasons cited were an insufficient demonstration of benefits to the ratepayer, concerns over market competition, and the belief that owning and operating charging equipment is not the role of the utility. Despite the greater scrutiny given to this role, utilities have been approved to pursue this approach to charging in nearly 90 percent of filings.

Utility Programs Evolve from Pilot to Greater Scale

While some electric utilities have well-established programs through which to fund investments in electric vehicle charging infrastructure, others have been more recent to start exploring such opportunities. For these utilities, it is often a pragmatic approach to launch transportation electrification programs in new market segments or for novel concepts as “pilot programs.” State commissions often prefer these pilot programs as a means of testing a specific use case or type of portfolio to gauge how customers and host sites respond. A pilot program, which usually requires a general assessment of costs and benefits instead of a formal cost-benefit analysis, can be launched with relatively modest funding and a narrow scope.

In assessing where best to pilot new use cases, an understanding of the current and near-term state of the charging market is warranted. As stated earlier, electric utilities can play a vital role in filling public charging infrastructure gaps that the private sector may not address adequately [39]. Some of the challenging use cases include the siting of DCFC stations in underserved communities in both rural and urban environments, multi-family

properties (either rental or condominiums), and properties where a tenant-landlord dilemma4 may be present. In these cases, the utility can ensure adequate service to all ratepayers and geographies and earn a return on investment over a longer time period than the private sector may be willing to accept.

New York, Massachusetts, Florida, and New Jersey, the four states with the largest approved public charging programs outside of California, have charging markets that are at or below the average deployment of fast charging stations on a per capita basis. New York, with the largest approved public charging program is well above average for L2 charging, but well below the national average for fast charging. The lack of charging in these states and the interest in supporting EVs likely influenced the commissions' approval for a large role for utilities in these states. States with smaller, pilot-based programs like Georgia and Washington have fast charging deployment levels at or above the national average. A new phase for Georgia Power's charging program was approved in late 2022 while a follow-on to the approved programs in Washington have not been proposed (see Table 4).

Table 4: Leading states with approved utility investments in public charging

State	Total Utility Approved Investment for Transportation Electrification	Approved Utility Investment eligible for Public Charging	Public DCFC ports per 1 million people	Public L2 ports per 1 million people
New York	$712 million	$560 million	74	459
California	$2,832 million	$537 million	276	861
Massachusetts	$355 million	$229 million	105	781
Florida	$278 million	$143 million	101	269
New Jersey	$266 million	$112 million	100	228
Nevada	$104 million	$56.8 million	179	379
Washington	$25.9 million	$10.4 million	137	442
Georgia	$82.5 million	$68.1 million	99	297
Other States	$554 million	$270 million	80	240
Nationwide	$5.230 billion	$1.985 billion	95	348

[4] In these instances, neither the landlord nor the tenant have sufficient financial motivation to install and operate charging equipment similar to challenges related to energy efficiency upgrades.

This table selects with approved utility investment in programs that include public EV charging infrastructure. The table also includes the number or DCFC and L2 ports (as of December 2022) per million residents as of 2021. “Other States” accounts for the remaining 42 states and the District of Columbia.

Source: [34, 3]

In addition to approved utility filings, several programs that would invest in publicly accessible EV charging stations are still pending. The largest such example, in terms of funding requested, is Xcel Energy’s request filed with the Minnesota PUC in August 2022 that includes $298.7 million allocated to both make-ready and “own & operate” programs with a specific focus on publicly accessible charging stations [40].

Table 5: Approved and pending utility investment in public charging and funded port count

Status	Investment Eligible for Public Charging	Number of public L2 ports funded	Number of public DCFC ports funded
Approved	$1.985 billion	127,998	8,214
Filed, pending approval	$1.088 billion	50,107	7,083
Total	$3.073 billion	178,105	15,297

Table 5 lists the total approved funding for utility programs that invest in public EV charging stations across the United States, as well as such program funding that has been filed and is still awaiting approval. The table also lists the total number of L2 and DCFC ports that have been funded through these programs. These figures are current as of December 2022. [34]

Utility investment in charging infrastructure has played and will continue to play a key role in building out EV charging infrastructure to support the rapid growth in EV adoption. Utilities work to develop programs and rate designs that comport with the policy guidance provided by public utility commissions, and consistent with any public policies in the state regarding decarbonization and transportation electrification.

The utility role in proactive infrastructure planning becomes more important as scale is reached in light-duty vehicle adoption and as medium- and heavy-duty vehicle sales starts to accelerate. The traditional utility planning process for electric loads and generation and distribution resources, such as integrated resource plans, is based on historical data and straight-line forecasting for load growth projections for their systems. The electrical infrastructure needs to meet electric truck and bus load are not based on historical data and

will likely be concentrated and create "hyper-local demand" for the grid. To counteract this issue, future proofing of sites will help lower costs and provide more economical solutions for vendors, utilities, and local governments. It may be challenging for some state public utility commissions to address these future infrastructure needs using traditional planning models.

Significant electric utility engagement in public charging deployment is a necessary piece of a multi-faceted approach to installing reliable equipment that meets the expectations of everyday EV drivers. Increasingly, the reliability and uptime of public EV infrastructure has become a high-priority issue for the EVSE firms and vehicle manufacturers to address. The utilities can play a constructive role in this area as well since they have strong obligations imposed on them for high reliability of electric infrastructure assets in front of the meter. For the private sector, the provision of make-ready investments and incentives help to improve the business case for them to operate successfully as private businesses owned by their investors. The next section of the paper discusses private sector investment in more detail.

Private Investments in EV Charging

Over the past decade, a blend of government and utility funding has helped to build a foundation for private companies to explore and pursue viable business models around building, installing, and operating publicly accessible EV charging. As EVSPs continue to develop their planned long-term profitability, private investment in public EV charging from these companies has steadily increased with a large spike following the enactment of IRA, reaching nearly $13 billion by March 2023 (see Figure 5).[5]

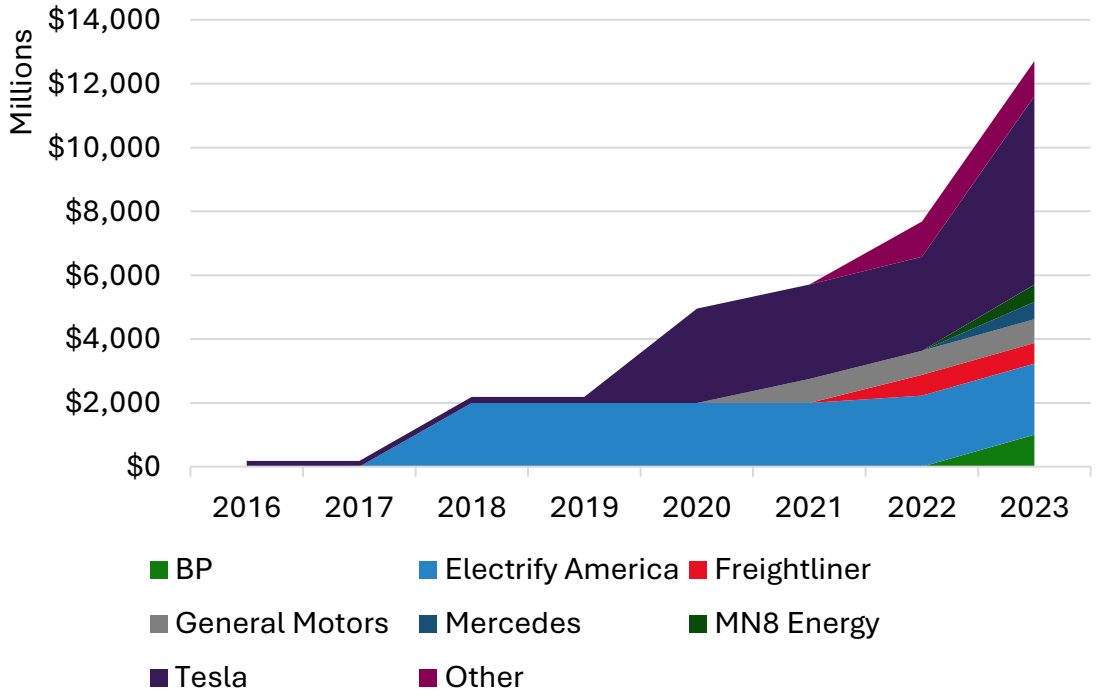
Private investment can come from a variety of sources, including private equity, venture capital, and even the unregulated affiliates of electric utilities. Due to the inherent lack of visibility into private investments, tracking and aggregating this source of funding comprehensively is difficult. Even when investments are publicly announced, it's often uncertain how much of those net proceeds will be used for operations, sales and marketing compared to actual investments in EVSE, especially publicly accessible charging infrastructure.

This section therefore aims to focus on large or notable announcements of private investment in EV charging, rather than attempting to present a comprehensive aggregated national view of funds raised by these companies. Funds raised through Initial Public Offerings or other private sources that are not tied to EV charging through public statements are

[5] This funding tally does not include funds raised either through Initial Public Offerings or other means that was not explicitly announced as funding for EV charging.

excluded from the overall tally. Note, these raised funds are considerable, reaching $3.6 billion by early 2023 [41].

Figure 5: Cumulative private investment in EV charging over time by company



This figure shows the cumulative private investment each year for public EV charging infrastructure in the United States. Only companies with greater than $500 million in cumulative announced spending are called out; the remaining investments are lumped into the "Other" category. It is very difficult to assess how much of these announced investments will go into charger deployment as opposed to personnel or company operating costs.

Source: [41]

Government Kickstarts the Private Charging Market

Much of the early private investment in publicly accessible EV charging stations was spurred by government funding. For example, ChargePoint, a private EV service provider (EVSP), received a $15 million grant from ARRA and $3.4 million from the California Energy Commission in 2010. The company used those funds to deploy 4,600 charging ports (many of which were publicly accessible) by 2013 [42]. Since that time, ChargePoint has attracted significant amounts of private investment and as of March 2023 has deployed more charging ports in the United States than any other EVSP with more than 50,000 publicly accessible ports deployed at more than 27,000 locations [3].

While early public investments led to the creation of new EV charging companies and encouraged private investments, EVSPs faced challenges turning initial public funding into viable businesses. For example, after receiving almost $100 million in federal grants through the ARRA to build a nationwide charging network, ECOtality, which established the Blink network of chargers, went bankrupt in 2013 and sold their assets to CarCharging Group [43, 44]. CarCharging Group faced many challenges improving the reliability of the network and many of their stations sat idle, leading some stakeholders in the EV charging industry to express concerns around overstating charging station availability in some areas [45]. However, the fortunes of many private EVSPs have improved in recent years despite these early challenges. CarCharging Group, for example, rebranded in 2017 as Blink Charging, Co. and has more than tripled its number of public EV charging ports from around 950 in 2020 to over 3,100 in 2022 [3].

Charging Companies Raise Capital through Public Equity Markets

In 2021, EVSPs picked up on the trend of raising capital through Initial Public Offerings via Special Purpose Acquisition Companies (SPACs). Many of the leading private sector companies took this approach, including ChargePoint, Blink, EVBox, and EVgo, taking advantage of strong investor interest in the EV market. For example, ChargePoint pursued a SPAC and then an IPO which was completed in March 2021, in which it went public with an offering price of $32.30 and raised net proceeds of $480 million [46].

In 2022 and 2023, losses in the equity markets have led to declines in market valuations of more than 50 percent for EVSPs that went for public listing. These declines in valuation have led to layoffs at EVSPs and greater uncertainty on the share of capital raised from the IPOs going to infrastructure deployment [47]. For example, Volta Charging raised over $200 million in equity financing and was expected to raise considerably more through a public offering in 2021 [48]. Less than two years later, the charging provider was acquired by Shell Recharge for $169 million, a fraction of what investors expected the company to be valued at when it went public [49].

Other EVSPs have stayed private and relied on equity financing through firms like Energy Impact Partners, which invested in a $53 million funding round for FLO in 2021 [50]. With the recent struggles of publicly listed EVSPs and the associated transparency required to trade on public markets, EVSPs will likely pursue private equity and debt financing for the near term. This approach makes it difficult to tally investment totals from the private sector unless public statements are available.

Leading Charging Service Providers

Tesla is recognized as the largest provider of fast charging and has invested hundreds of millions into its infrastructure over the past decade. As of March 2023, they have deployed nearly 18,000 fast charging ports and 13,000 Level 2 ports, all publicly accessible, in 38 states [3]. However, until February 2023, all Tesla charging was only accessible to Tesla's vehicles when the company committed to make 7,500 charging ports available to all EVs by the end of 2024 [51]. With the opening and expansion of its network, Tesla is poised to become a major competitor to existing EVSPs this decade. It is difficult to estimate Tesla's total investment in charging infrastructure because they do not disclose these costs in their public filings. Atlas Public Policy estimates the investment to be upwards of $6 billion based on public disclosures.

Electrify America is second to Tesla in terms of investment with a focus on higher-powered DC fast charging. Electrify America was established as part of the Volkswagen Settlement and therefore has reporting and other compliance requirements far exceeding other EVSPs reducing their flexibility until the conditions of the settlement are satisfied. The settlement required Volkswagen invest $2 billion to develop and build out charging infrastructure nationwide. Volkswagen Group established a subsidiary, Electrify America to control the investments; Electrify America benefits from Volkswagen being one of the world's largest automakers through improved access to capital, relative to other EVSPs. In fact, Electrify America announced in June 2022 a new capital raise of $450 million from Volkswagen Group and Siemens Financial Services [52].

As of March 2023, Electrify America has installed more than 4,000 fast charging ports at 823 locations in 38 states [3]. The company's stated goal is to build out 10,000 ports by the end of 2026 in its public statements and investment plans submitted to the U.S. EPA and California Air Resources Board [53].

As mentioned earlier, ChargePoint is the single largest charging provider with more than 50,000 stations nationwide. The vast majority of these stations are Level 2 charging intended for long dwell parking or opportunity charging. ChargePoint's IPO in 2021 helped it raise nearly $0.5 billion though it is difficult to estimate how much of those funds would go directly towards charging deployment. The company's business model largely relies on the customer owning the equipment and paying ChargePoint network access fees. And like most charging companies, ChargePoint relies on a combination of utility and government funding to offset installation and equipment costs. From public statements, the company has committed to invest more than $1 billion in publicly accessible charging as of March 2023.

Veteran EVSPs like EVgo and newcomers like TeraWatt Infrastructure have raised additional billions in private investment to fund their build out of charging for the public (see Table 6).

For TerraWatt, it's unclear how much of their initial $1 billion investment will be spent on charging infrastructure, or how much of the resulting infrastructure will be publicly accessible [54]; the magnitude of the amount raised, however indicates an interest in large-scale investment in EV charging startups.

General Motors has steadily increased its commitments to facilitate the deployment of public EV charging in recent years, including a 2021 commitment to invest $750 million to expand access to public charging. As part of this commitment, the company announced in 2022 a collaboration with Pilot Company (operator of Pilot and Flying J travel centers) and EVgo to locate and deploy DC fast charging at 500 locations across the country with 2,000 ports. This commitment includes partnerships with the company's dealers to install 40,000 (Level 2) community charging ports and with EVgo to deploy 3,250 fast charging ports [55].

As of March 2023, the total amount of private investment announced by companies that implement or operate publicly accessible EV charging infrastructure in the United States reached nearly $13 billion. This does not include cost-share investment from the site hosts themselves, which can match the amount of investment from the charging service provider or government entity, in some cases. For state rebate programs like the California Electric Vehicle Infrastructure Project, site hosts can be required to provide at least 25 percent of the total investment for fast charging stations [23]. Private investment figures are based on the best available information and some companies that are not publicly traded have limited investment information. For example, these investment estimates also do not include major industry developments including the acquisition of Greenlots by Royal Dutch Shell in January 2019 [56].

Although the private funding listed in Table 6 can be attributed to EV charging stations and related infrastructure, it's not possible to always drill down to determine how much investment specifically targets publicly accessible EV charging. However, there are certain companies that focus specifically on providing public charging. For example, the $650 million investment in Freightliner represents a shared investment in a public commercial electric charging network by Daimler Truck North America, NextEra Energy Resources, and BlackRock Renewable Power, which was launched as a joint venture in April 2023 [57].

Table 6: Private investment into EV charging infrastructure by company

Company	Private investment ($)
Tesla	$5,904,556,000
Electrify America	$2,450,000,000
BP	$1,000,000,000
General Motors	$750,000,000
Freightliner	$650,000,000
Mercedes	$538,562,500
MN8 Energy	$538,562,500
EVgo	$325,842,000
ChargePoint	$318,628,000
Volta Charging	$232,002,000
Total	$12,708,153,000

This table lists the total committed private investments into EV charging infrastructure in the United States tracked by Atlas Public Policy. These investments only capture official figures that have been publicly announced and total nearly $13 billion. It is very difficult to assess how much of these announced investments will go into charger deployment as opposed to personnel or company operating costs.

Source: [41]

Private investment in recent years, particularly since the enactment of IRA, is providing a jolt to government and utility programs and will result in the deployment of many thousands of new publicly available charging stations in the next few years. Partnerships or joint ventures with automakers, fleet operators, and other private companies will likely continue to play a valuable role in the development of the market [58]. These relationships have already started to emerge, with General Motors for example, partnering with seven major EVSPs to integrate their charging networks for its customers [59]. Uncertainty still exists regarding the extent to which these new private investments will yield a scalable, sustainable investment market for charging infrastructure, but recent developments reveal an increasing appetite in the private sector to play a larger role in charger buildout.

Challenges and Opportunities for the Road Ahead

Demand for publicly accessible EV charging infrastructure will increase nationwide, as EV adoption continues to accelerate. EV sales reached eight percent of all passenger vehicle sales nationwide in early 2023 while EV adoption in California is approaching 25 percent [1]. Key drivers will help continue this growth including California's ACC II and ACT regulations adopted by a growing number of states,[6] commitments from several manufacturers to fully electrify their vehicle offerings, and unprecedented funding from the federal government through IIJA and IRA. Moreover, on April 12, 2023, the federal EPA announced a broad rulemaking for both light-, medium-, and heavy-duty vehicles where successful implementation would result in further increased EV adoption further if the final rule reflects the proposal. Such an increase in the number of EVs on the road will necessitate more public chargers that are available and reliable to all EV drivers.

This creates a rare opportunity for charging companies to deploy equipment through a combination of government and utility programs along with direct private sector investment. Unless a large number of new charging stations, including both L2 and DCFC, are installed to meet the anticipated demand in states with ambitious transportation electrification goals, the "charging gap" between the expected amount of public charging deployment and the amount needed to reach expected EV market growth will continue to grow.

Importantly, the charging that is installed in the near term must meet the expectations of everyday drivers in terms of ease-of-use, convenience, reliability, and performance. As the EV market expands beyond early adopters, more drivers will be unfamiliar with the technology and less patient with technical glitches and long wait times to charge. To that end, the reliability and performance of stations is a focal point of the federal government's new NEVI program, which aims to establish standards for the charging industry that meet the expectations of everyday drivers.

Recent research from Atlas Public Policy found that to achieve 100 percent electrification of passenger vehicles in the United States by 2035 would require more than $87 billion of total investment in EV charging from 2021 through 2030, including roughly $39 billion to install 495,000 public and workplace charging ports [13]. Similarly, Atlas Public Policy also estimated that 100 percent nationwide electrification of medium- and heavy-duty vehicles

[6] Of the 17 states that have adopted at least part of California's prior standards (Sec. 177 states), five states have started the process to adopt the new at least one of the ACC II or ACT as of November 2022, with more expected to follow during 2023.

would require between $100 and $166 billion,[7] with much of that needing to be committed by 2035 [60].

While the investment for charging needs can appear daunting, the funding sources for public EV charging, including federal and state programs, funding through electric utilities, and funding from the private sector, are well defined and can be scaled to meet the significant needs in the near term. No single source of capital and funding can be relied upon to solve the current charging gaps in metro centers along with rural and underserved areas. Much work remains to be done in some of the more difficult use cases such as environmental justice communities, rural areas, and multi-family housing. Moreover, especially with the utility and state and federal government funding, the foundation of a sustainable, long-term market for the private sector players can be established in a collaborative way.

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Appendix A: VW Settlement

Table 7: Planned and awarded VW settlement funding for EVSE per state

State	Percent of Total Allocation Planned for EVSE	Planned EVSE ($1,000s)	Funding Awarded for EVSE ($1,000s)	Percent of Planned EVSE Awarded
AK	15%	$1,219	$961	79%
AL	13%	$3,249	$3,250	100%
AR	15%	$2,197	$1,722	78%
AZ	0%	$0	$0	0%
CA	2%	$10,000	$10,000	100%
CO	15%	$10,311	$10,299	100%
CT	15%	$8,358	$8,000	96%
DC	0%	$0	$0	0%
DE	15%	$1,452	$1,400	96%
FL	15%	$24,942	$24,942	100%
GA	0%	$0	$0	0%
HI	15%	$1,219	$1,219	100%
IA*	15%	$3,180	$3,195	100%
ID	15%	$2,602	$2,353	90%
IL	12%	$13,042	$12,600	97%
IN	15%	$6,140	$6,028	98%
KS	15%	$2,349	$2,000	85%
KY	15%	$3,057	$0	0%
LA	15%	$2,977	$1,244	42%
MA	15%	$11,311	$11,260	100%
MD	15%	$11,357	$7,470	66%
ME	15%	$3,158	$3,150	100%
MI	15%	$9,721	$6,056	62%
MN	11%	$5,288	$4,784	90%
MO	15%	$5,967	$5,508	92%
MS	10%	$987	$330	33%
MT	15%	$1,890	$1,323	70%

State	Percent of Total Allocation Planned for EVSE	Planned EVSE ($1,000s)	Funding Awarded for EVSE ($1,000s)	Percent of Planned EVSE Awarded
NC	15%	$13,807	$13,394	97%
ND	10%	$813	$1,194	147%
NE	15%	$1,837	$1,818	99%
NH	15%	$4,637	$3,070	66%
NJ	15%	$10,832	$7,600	70%
NM*	15%	$2,697	$2,698	100%
NV	15%	$3,731	$3,320	89%
NY	15%	$19,155	$19,155	100%
OH	15%	$11,295	$10,250	91%
OK	15%	$3,138	$2,810	90%
OR	0%	$0	$0	0%
PA	15%	$17,785	$4,793	27%
RI	10%	$1,437	$1,437	100%
SC	10%	$3,390	$0	0%
SD	13%	$1,016	$1,219	120%
TN	15%	$6,864	$5,200	76%
TX	15%	$31,398	$31,334	100%
UT	11%	$3,870	$3,832	99%
VA	15%	$14,045	$14,000	100%
VT	15%	$2,804	$2,750	98%
WA	15%	$16,912	$3,434	20%
WI	0%	$0	$0	0%
WV	4%	$516	$600	116%
WY	15%	$1,219	$0	0%
Total	**11%**	**$319,172**	**$263,000**	**82%**

This table lists the planned allocation and awarded funds per state of the VW Settlement available for clean fueling infrastructure such as EV charging stations. Allocated funds represent funding that has been made available to states, while awarded funds have been committed to identified programs or projects.

** Iowa and New Mexico have reported awards for EVSE above the 15 percent maximum set by the settlement. This discrepancy may be due to declined or rescinded awards that were not publicly announced.

Source: [22]

Appendix B: NEVI Formula Funding

Table 8: NEVI formula funding program allocations per state

State	Federal Funding, 80% ($1M)	State or Private Funding, 20% ($1M)	Total Funding ($1M)	State	Federal Funding, 80% ($1M)	State or Private Funding, 20% ($1M)	Total Funding ($1M)
TX	$407.77	$81.55	$489.33	AR	$54.12	$10.82	$64.95
CA	$383.67	$76.73	$460.41	CT	$52.50	$10.50	$63.00
FL	$198.06	$39.61	$237.67	AK	$52.42	$10.48	$62.90
NY	$175.47	$35.09	$210.56	OR	$52.25	$10.45	$62.70
PA	$171.51	$34.30	$205.82	IA	$51.37	$10.27	$61.65
IL	$148.62	$29.72	$178.35	MS	$50.56	$10.11	$60.67
OH	$140.12	$28.02	$168.14	WV	$45.68	$9.14	$54.82
GA	$134.98	$27.00	$161.97	MT	$42.89	$8.58	$51.47
MI	$110.06	$22.01	$132.07	KS	$39.50	$7.90	$47.40
NC	$109.02	$21.80	$130.83	NM	$38.39	$7.68	$46.07
VA	$106.38	$21.28	$127.65	NV	$37.96	$7.59	$45.55
NJ	$104.37	$20.87	$125.25	UT	$36.30	$7.26	$43.56
IN	$99.61	$19.92	$119.53	NE	$30.21	$6.04	$36.26
MO	$98.96	$19.79	$118.75	ID	$29.90	$5.98	$35.88
TN	$88.33	$17.67	$106.00	SD	$29.48	$5.90	$35.38
AL	$79.31	$15.86	$95.17	WY	$26.78	$5.36	$32.14
WI	$78.65	$15.73	$94.39	ND	$25.95	$5.19	$31.14
AZ	$76.48	$15.30	$91.78	RI	$22.86	$4.57	$27.43
LA	$73.37	$14.67	$88.04	VT	$21.22	$4.24	$25.46
WA	$70.87	$14.17	$85.04	ME	$19.30	$3.86	$23.16
SC	$70.00	$14.00	$84.00	DE	$17.68	$3.54	$21.22
KY	$69.46	$13.89	$83.35	HI	$17.68	$3.54	$21.22
MN	$68.16	$13.63	$81.80	NH	$17.27	$3.45	$20.73

State	Federal Funding, 80% ($1M)	State or Private Funding, 20% ($1M)	Total Funding ($1M)	State	Federal Funding, 80% ($1M)	State or Private Funding, 20% ($1M)	Total Funding ($1M)
OK	$66.30	$13.26	$79.56	DC	$16.68	$3.34	$20.02
MA	$63.49	$12.70	$76.19	PR	$13.66	$2.73	$16.39
MD	$62.82	$12.56	$75.38				
CO	$56.54	$11.31	$67.84	**Total**	**$4,155**	**$831**	**$4,986**

This table lists the federal NEVI formula funding available to states. This table splits the funding between the federally allocated funds and the 20 percent cost share that must either be covered by state or private investment.

Source: [61]

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