ELECTRIC UTILITY FILING BI-ANNUAL UPDATE

An update on U.S. investor-owned utility activity on transportation electrification for the second half of 2019

By Nicole Lepre and Conner Smith

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EXECUTIVE SUMMARY

This report examines recent trends in transportation electrification with a focus on electric vehicle (EV)-related filings by investor-owned electric utilities. Using data from the Atlas EV Hub (www.atlasevhub.com), the report summarizes utility EV investment activity in 2019 and places that investment in a broader context.[1] Throughout the year, $375 million in utility investment was approved. This investment could add an additional 1,776 DC fast charging and 15,688 Level 2 charging stations. These approvals made 2019 the second-highest year for utility investment in transportation electrification behind the high mark set in 2018.[2] The largest single investment approved was for a San Diego Gas & Electric (SDG&E) program worth more than $100 million. The program includes investment in in medium- and heavy-duty vehicle infrastructure and a school bus vehicle-to-grid program, which was authorized via a settlement agreement supported by a wide range of stakeholders, including the state's official consumer advocate.

Since 2012, utility commissions across the country have approved more than $1.4 billion in transportation electrification investments. Pending filings as of December 31, 2019 could double the amount of investment in the sector. The greatest portion of these funds would go towards the deployment of EV charging stations. Only $51 million of the $1.4 billion of approved investment in transportation electrification is allocated for outreach and education efforts. While this is a small percentage of approved investment, $51 million represents an increase in education and outreach investment of nearly 50 percent since June 30, 2019, when only $35 million was allocated for outreach and education efforts.

Higher levels of approved investment during the second half of the year generated a slight increase in the overall utility approval rate from 69.6 percent for the first half of the year to 71.6 percent for the full year. Almost 70 percent of all approved investment for the year occurred during the second half of 2019. Despite this increase, the utility approval rate for the year was lower than the 77.5 percent cumulative approval rate for all years through the end of 2019.[3] In addition to approved investments, 13 programs that represent an additional $223 million of investment and could add an additional 472 DC fast charging and more than 19,000 Level 2 charging stations were either proposed or updated in 2019.

In 2019, 11 electric utilities were denied or withdrew investment worth more than $334 million. The largest of these came from Massachusetts where the commission rejected over $150 million in investments from National Grid that would have added 300 DC fast charging stations and over 17,000 Level 2 charging stations in the Commonwealth. Almost all of the withdrawn investment for the year came from SDG&E's withdrawal of a $137 million residential charging program that would have supported more than 60,000 Level 2 charging stations.

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[1] All data from this report is from the Electric Utility Filings dashboard on the Atlas EV Hub (www.atlasevhub.com) unless otherwise noted.
[2] In 2018, $758 million in utility investments was approved, $670 million of which is attributable to the approval of five programs in California.
[3] The Atlas EV Hub has started tracking utility approval ratings and added these data to the "Utility Approval Rate" page of the Utility Filings dashboard.

The second half of 2019 saw more than $50 million in approved investment supporting charging infrastructure for schools and parks from California's three largest investor-owned utilities as well as Liberty Utilities. The Charge Parks and Charge Schools programs will support more than 30 DC fast charging stations and 870 Level 2 charging stations. The second largest approval in the back half of 2019 went to Xcel Energy in Minnesota for a $26 million program supporting make-ready infrastructure for 350 DC fast charging stations as well as make-ready infrastructure for fleet operators.

More than half of the funds approved in 2019 came from California utilities, with Maryland and New York utilities following at a distant second and third with 15 percent and nine percent of approved funds, respectively. California approvals worth almost $190 million gave the West Coast region a significant lead over other regions with more than half of approved investment for the year. The Central Atlantic and Midwest Regions accounted for 25 percent and 17 percent of the year's approved investment, respectively, with the remaining regions accounting for less than 10 percent.

Utilities continue to receive approvals for programs targeting public charging network expansion. Only one program targeting public charging infrastructure was denied in 2019. A majority of the rejected programs targeted other customer segments such as workplace, multi-unit dwelling (MUD), fleet, or residential charging.

The level of utility prioritization of underserved communities remained largely unchanged between 2018 and 2019. Through 2018, approximately 27 percent of all filed utility programs contained measures to prioritize underserved communities, which is roughly the same level of prioritization seen in 2019. California utilities continue to account for the lion's share of programs focused on underserved communities. In both years, approximately 40 percent of programs with a focus on underserved communities came from California utilities.[4]

Looking ahead, electric utilities can increase the impact of their programs by pairing them with existing public funding activities such as the VW Settlement. Several states that have invested VW Settlement funds in transportation electrification in 2019 also have significant pending utility programs that could accelerate investment in the sector. States including Hawaii, Massachusetts, Michigan, Minnesota, and Pennsylvania saw approved filings in 2019 worth a total of almost $60 million and have all invested VW Settlement funds in transportation electrification.

TRANSPORTATION ELECTRIFICATION STATE OF PLAY

U.S. passenger EV sales were down nine percent in 2019 compared to 2018, exceeding the 1.6 percent decrease in sales for the entire passenger vehicle market [1, 2]. EV market share as a proportion of all light-duty vehicles dropped slightly from 2.1 percent in 2018 to 1.9 percent in 2019. The Tesla Model 3 continues to claim the greatest portion of EV sales, representing 48 percent of the EV market in 2019. Despite Tesla's continued market dominance, domestic sales for their vehicles remained almost flat between 2018 and 2019 although sales increased by 35 percent from the first half of 2019 to the second half [1].

Charging infrastructure deployment continues to grow despite the dip in EV sales. Through the end of 2019, there were more than 85,000 charging ports in the United States. Charging station deployment in

[4] The Atlas EV Hub has started tracking data to assess where and how utility programs specifically focus on underserved communities. These data are available on the "Equity" tab of the Utility Filings dashboard.

2019 led to a 33 percent increase over the amount of ports that were available through 2018. While this annual growth rate has remained steady since 2018, it is greater than the 28 percent growth seen between 2017 and 2018. Roughly 15 percent of charging ports are DC fast charging stations and the remaining ports are Level 2 charging stations. Nearly one-third of charging ports are located in California [3].

Government funding continues to play a major role in the deployment of medium- and heavy-duty EVs while utility investment provides significant support for charging infrastructure. More than $900 million in government funding has been allocated to electric buses and trucks through December 2019 [4]. Roughly $352 million of this funding was announced or awarded in the second half of 2019. Of the major vehicle categories, electric transit buses lead with more than $520 million in government funding. In terms of charging infrastructure, electric bus and truck charging is included as a focus in approved utility programs worth almost $729 million. Roughly $115 million of this was approved in the second half of 2019. Funding awards for transportation electrification through the VW settlement increased in 2019 with $125 million awarded, $43 million of which was announced in the second half of the year.

2019 UTILITY FILINGS

California accounted for half of utility investment for in 2019 with nearly $190 million approved. Despite this majority, investment for the year was more widely distributed throughout the country compared to 2018 when the golden state claimed almost 90 percent of all approved investment. Utilities continue to see high rates of approval for programs seeking to expand public charging infrastructure over other customer segments such as workplaces, MUDs, fleets, and residential charging. This section provides an overview of the current status of utility filings from 2012 through 2019, a summary of filing activity during the second half of 2019, and a snapshot of filings activity in each region as defined by the U.S. Energy Information Administration (EIA). The following sections will outline utility filing activity by region using these designations.

CURRENT STATUS OF UTILITY FILINGS FROM 2012 THROUGH 2019

Since 2012, electric utilities have been approved to invest more than $1.4 billion in transportation electrification across the United States. Pending filings as of December 31, 2019 could double the amount of investment in the sector. Approved investment could support more than 48,500 Level 2 charging stations and more than 2,500 DC fast charging stations in 24 states throughout the country.

A study from the University of California at Davis indicates that, even in the relatively advanced California EV market, consumer awareness regarding increases in EV range and availability did not increase significantly between 2014 and 2017 [5]. Investment in education increased by nearly 50 percent since the first half of 2019, increasing from about $35 million to more than $51 million. However, an education gap remains, as $51 million represents only a small portion of the total approved investment. *Figure 1* shows all the filings tracked on the EV Hub organized by filing status.

FIGURE 1: ELECTRIC UTILITY FILINGS STATUS IN THE UNITED STATES AS OF DECEMBER 31, 2019

Approved	Pending/Filed	Denied/Withdrawn
24 States	23 States	16 States
76 Filings	30 Filings	27 Filings
43 Utilities	24 Utilities	22 Utilities
$1,409,090,899 Investment	$1,404,181,677 Investment	$398,833,126 Investment
2,511 DC Fast Charging Stations	1,079 DC Fast Charging Stations	404 DC Fast Charging Stations
48,589 Level 2 Charging Stations	107,928 Level 2 Charging Stations	82,003 Level 2 Charging Stations

This chart highlights approved, pending, and denied filings through 2019. Pending investment could double the amount of total investment if approved.

FILING ACTIVITY DURING SECOND HALF OF 2019

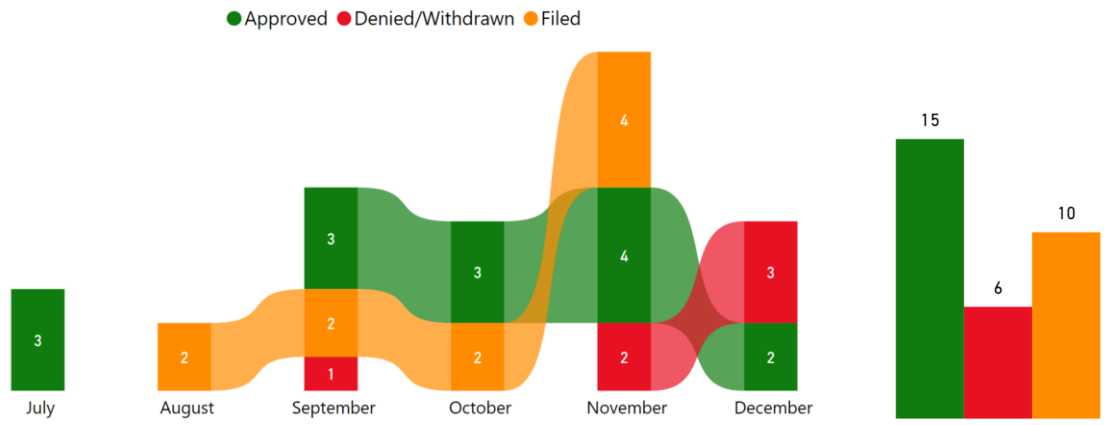
This section provides an overview of all filing activity in second half of 2019 as well as some analysis of activity throughout the year. During the second half of 2019, commissions approved almost $257 million in electric utility investment in transportation electrification, up from about $118 million in the first half of the year. Programs approved during the second half of the year are expected to add more than 500 DC fast charging stations and more than 3,500 Level 2 charging stations. Six programs totaling more than $110 million of investment were either proposed or updated in the second half of 2019. Figure 2 summarizes filing activity by status during the second half of 2019.

Overall, filings by 11 electric utilities in seven states were approved during the second half of 2019. Five utilities in five states either filed new programs or received some sort of modification to previously proposed programs. During this time, commissions throughout the country denied six electric utility programs worth more than $154 million. Nearly all of the denied funding came from the denial of over $153 million of proposed investment by National Grid for their Phase II EV program in Massachusetts. This denial is discussed in more detail in the *New England* section below. Approved utility filings during the second half of 2019 were concentrated in California, where almost $190 million was approved. The *West Coast* section below provides details on the specific programs approved.

Maryland and New York utilities followed California utilities at a distant second and third with approximately $50 million and $30 million of approved funds, respectively. In Minnesota, Xcel Energy received approval in July 2019 to invest more than $26 million to support 350 DC fast charging stations as well as make-ready infrastructure for fleet operators. *Figure 3* shows the location of filing activity throughout the country in 2019.

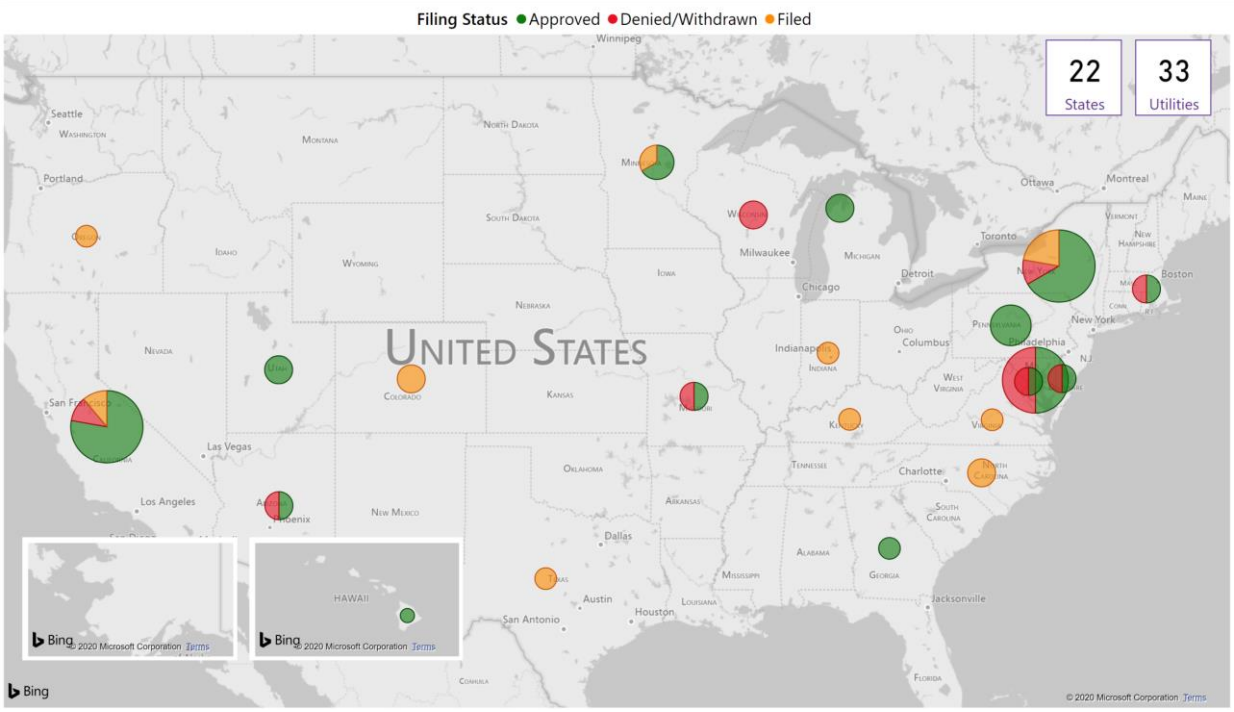
FIGURE 2: FILING CHANGES BETWEEN JULY 1 AND DECEMBER 31, 2019

Approved	Pending/Filed	Denied/Withdrawn
14 States	10 States	9 States
35 Filings	13 Filings	13 Filings
26 Utilities	10 Utilities	11 Utilities
$375,181,672 Investment	$223,223,321 Investment	$334,780,657 Investment
1,776 DC Fast Charging Stations	472 DC Fast Charging Stations	302 DC Fast Charging Stations
15,688 Level 2 Charging Stations	19,050 Level 2 Charging Stations	79,436 Level 2 Charging Stations



These charts present an overview of the utility filing activity during the second half of 2019 by number of programs. Most approvals occurred from September through November.

FIGURE 3: 2019 FILING ACTIVITY IN THE UNITED STATES

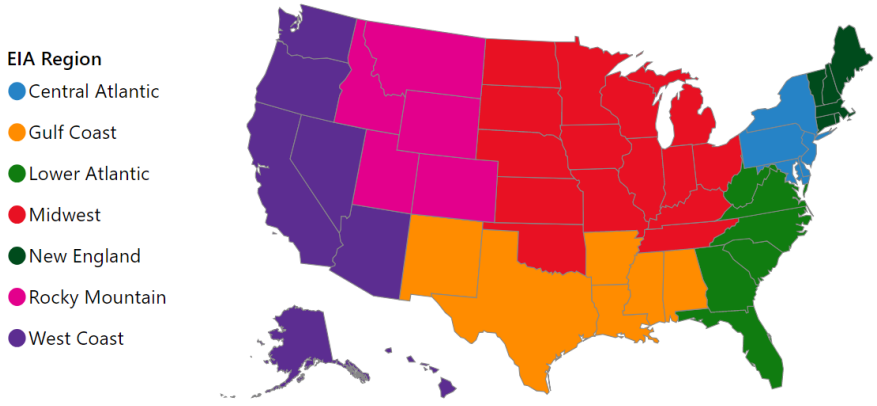


This map shows the status of different filing actions in 2019 by state. Filing activity, based on number of programs, was concentrated in the West Coast and Mid-Atlantic regions.

UTILITY TRANSPORTATION ELECTRIFICATION PROGRAMS BY EIA REGION

This section provides an overview of filing activity in each region as defined by the U.S. EIA. Figure 1 displays states divided by their respective EIA regions.

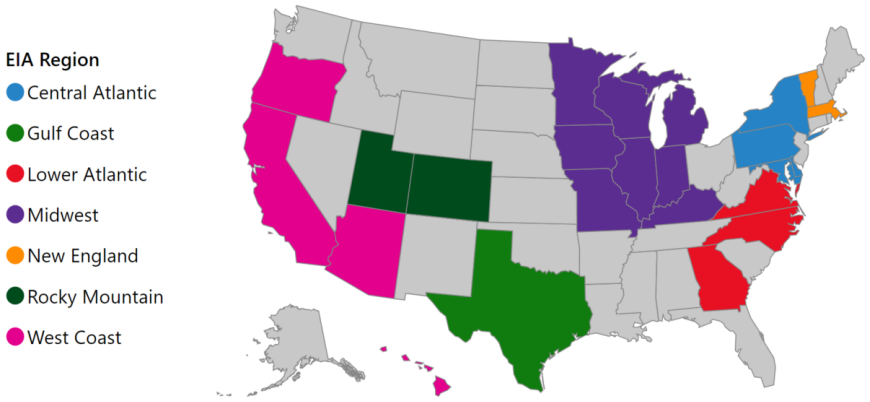
FIGURE 1: U.S. STATES BY EIA REGION



This figure shows states categorized by U.S. EIA region.

The West Coast continues to dominate in terms of utility investment in transportation electrification, accounting for more than 50 percent of approved investment in 2019. The Central Atlantic region saw the second highest approved investment for the year with more than $88 million. Figure 2 shows the states where utility programs were approved, filed, rejected, or withdrawn in 2019.

FIGURE 2: 2019 UTILITY FILING ACTIONS BY EIA REGION



This map displays 2019 filing actions by EIA region across the country for the entire year. The second half of 2019 saw filing actions in the Rocky Mountain and New England regions, compared to the first half of the year when there were no actions in these regions.

WEST COAST

Filing activity on the west coast picked up during the second half of 2019 with nine newly filed, updated, or approved filings compared to only three during the first half of the year. For the entire year, nine programs were approved, two were withdrawn or rejected, and two were filed.[5] California utilities were the most active, accounting almost all of the nearly $190 million in approved investment and $43.5 million of the $48.9 million in newly filed programs in 2019.

In November, California's three largest investor-owned utilities, as well as Liberty Utilities, a smaller utility serving the Lake Tahoe region, were approved to invest in charging infrastructure at schools and parks in their service territories.[6] In total, these programs represent over $50 million dollars of investment and could support over 850 Level 2 charging stations and over 30 DC fast charging stations.

The largest approval for any utility in 2019 came from, SDG&E, which was approved to invest more than $109 million in medium- and heavy-duty electrification programs.[7] These programs include a vehicle-to-grid (V2G) electric school bus pilot program in which SDG&E would install, maintain, and own charging infrastructure for ten electric schools buses capable of performing V2G services that could be bid into the California Independent System Operator (CAISO) markets. These programs also include make-ready

[5] Note that the number of filings activities (approvals, new filings, and withdrawals/ denials) do not add up to the 12 total filings that saw activity in 2019 because some filings were partially approved and partially denied.
[6] Filing IDs A1807020, A1807022, A1807023, and A1807025.
[7] Filing ID A1801012.

investments in electric bus and truck charging infrastructure with a 30 percent carve-out for infrastructure located in underserved communities. The program was approved via a settlement agreement supported by a broad range of stakeholders, including the state's official consumer advocate, making it the largest single utility transportation electrification investment supported by a such a consumer group.

The California Public Utilities Commission approved $22 million in bridge funding for Southern California Edison (SCE) in October as the utility awaits approval for their Charge Ready 2 program.[8] While the number of stations funded by this approval was not specified, the Charge Ready 2 program could invest up to $760 million in programs supporting 50,000 charging stations.

TABLE 1: WEST COAST FILINGS BY STATUS IN 2019

Utility	State	Filing Identifier	Date	Status	Potential Investment
San Diego Gas & Electric	CA	A1801012	7/16/2019	Approved	$109,100,000
Southern California Edison	CA	A1410014	10/14/2019	Approved	$22,000,000
Southern California Edison	CA	A1807022	11/7/2019	Approved	$19,770,000
San Diego Gas & Electric	CA	A1807023	11/7/2019	Approved	$18,728,672
Pacific Gas & Electric Company	CA	A1807020	11/7/2019	Approved	$11,281,433
Liberty Utilities	CA	A1807025	11/7/2019	Approved	$4,687,000
Pacific Gas & Electric Company	CA	A1807021	9/10/2019	Approved	$4,129,000
Hawaiian Electric Company	HI	36220	3/20/2019	Approved	No costs allocated[9]
Pacific Gas & Electric Company	CA	A1811003	10/24/2019	Approved	No costs allocated[9]
San Diego Gas & Electric	CA	A1910012	10/28/2019	Filed	$43,500,000
Portland General Electric	OR	UM-1811	2/15/2019	Filed	$5,400,000
Tucson Electric Power	AZ	E-01933A-17-0250	2/20/2019	Rejected	$2,158,000
San Diego Gas & Electric	CA	A1701020	2/7/2019	Withdrawn	$136,905,000

This table shows all filing activity in the West Coast region in 2019. California utilities were the most active.

[8] Filing ID A1410014.

[9] Programs listed as "no costs allocated" are programs such as EV rates where the utility has not allocated costs to that program.

SDG&E also accounted for most of the proposed investment in 2019 and filed a $43.5 million charging infrastructure program targeting workplace charging and MUD charging in October.[10] SDG&E proposes to invest in make-ready infrastructure for 1,500 charging stations at workplaces and to own 500 charging stations at MUDs.

In September, Pacific Gas & Electric (PG&E) was approved to invest over $4 million in its Empower EV program to provide point of sale incentives for Level 2 charging stations. The entire program targets low-moderate income customers.

Despite a slower start in 2019 compared to 2018 and the large withdrawal from SDG&E, the West Coast continues to lead investment in transportation electrification. The region accounts for almost 80 percent of all approved utility investment in the sector and nearly 60 percent of pending investment since the first filing activity in 2012. Equity continues to be a focus for utilities on the West Coast, with all except two of the eight programs filed or approved included a focus on underserved communities. The West Coast also leads in terms of medium- and heavy-duty electrification with more than 98 percent of the total approved investment.

CENTRAL ATLANTIC

The Central Atlantic region had the second highest approved investment in 2019 with almost $89 million approved across 16 programs. Two new programs worth $68 million were filed and seven programs worth almost $37 million were rejected or withdrawn.

In terms of total investment, the two filings in New York made up the most significant filing activity in the Central Atlantic region for the second half of 2019. A new program proposed by Consolidated Edison ("ConEd") valued at nearly $40 million program filed by proposes to invest $30 million in make-ready infrastructure to support the deployment of 25 publicly-available DC fast charging stations and $9 million in make-ready infrastructure to support the deployment of seven DC fast charging stations for use by owners of private and public fleets. The proposal also includes off-peak EV rates for commercial electric trucks and residential customers through the Smart Charge NY Program and would provide financial incentives to customers participating in this new rate. New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation co-filed additional EV charging programs worth $29 million. Table 2 shows the breakdown of these filing changes.

TABLE 2: CENTRAL ATLANTIC FILINGS BY STATUS IN 2019

Utility	State	Filing Identifier	Date	Status	Potential Investment
Consolidated Edison Company	NY	19-E-0065	10/16/2019	Filed	$39,000,000
New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation	NY	19-E-0378	5/20/2019	Filed	$29,000,000
Baltimore Gas and Electric Company	MD	9478	1/14/2019	Approved	$25,677,101

[10] Filing ID A1910012.

Utility	State	Filing Identifier	Date	Status	Potential Investment
Potomac Electric Power Company	MD	9478	1/14/2019	Approved	$14,246,027
Potomac Electric Power Company	MD	9478	1/14/2019	Rejected	$12,558,000
National Grid	NY	18-E-0138	2/7/2019	Approved with Modification	$9,000,000
Baltimore Gas and Electric Company	MD	9478	1/14/2019	Rejected	$7,261,788
Potomac Edison	MD	9478	1/14/2019	Approved	$6,890,574
Consolidated Edison Company	NY	18-E-0138	2/7/2019	Approved with Modification	$6,400,000
Potomac Electric Power Company	DC	FC1130	4/12/2019	Postponed or rejected	$5,605,150
Delmarva Power	MD	9478	1/14/2019	Approved	$5,339,065
New York State Electric & Gas Corporation	NY	18-E-0138	2/7/2019	Approved with Modification	$5,120,000
Rochester Gas and Electric Corporation	NY	18-E-0138	2/7/2019	Approved with Modification	$5,032,000
Delmarva Power	MD	9478	1/14/2019	Rejected	$4,807,333
Potomac Edison	MD	9478	1/14/2019	Rejected	$4,558,335
Central Hudson Gas & Electric Corporation	NY	18-E-0138	2/7/2019	Approved with Modification	$4,400,000
Potomac Electric Power Company	DC	FC1130	10/31/2019	Approved	$4,319,300
Orange and Rockland Utilities	NY	18-E-0138	2/7/2019	Approved with Modification	$1,664,000
Delmarva Power	DE	17-1094	6/4/2019	Rejected	$1,222,050
Delmarva Power	DE	17-1094	6/4/2019	Approved	$583,500
Baltimore Gas and Electric Company	MD	9478	12/18/2019	Postponed	$166,667
Potomac Electric Power Company	MD	9478	12/18/2019	Postponed	$166,667
Delmarva Power	MD	9478	12/18/2019	Postponed	$166,667
Penn Power	PA	R-2019-3007072	2/28/2019	Approved	No costs allocated[9]

Utility	State	Filing Identifier	Date	Status	Potential Investment
Penn Power	PA	R-2019-3007071	2/28/2019	Approved	No costs allocated[9]
Penelec	PA	R-2019-3007070	2/28/2019	Approved	No costs allocated[9]
Met-Ed	PA	R-2019-3007069	2/28/2019	Approved	No costs allocated[9]
Consolidated Edison Company	NY	19-E-0065	2/6/2019	Postponed	No costs allocated[9]

This table shows all filing activity in the Central Atlantic region in 2019. Maryland and New York lead the way in terms of approved investment with more than $50 million and more than $31 million in new investment, respectively.

MIDWEST

The Midwest also experienced significant utility activity in 2019 with 11 filing actions. Five programs were approved for investment worth more than $60 million. Newly filed programs could bring in an additional There were five approved programs, three proposed programs, and three denied programs.[11] Table 3 shows the breakdown of these filing changes.

The most significant filing activity in the region occurred with the approval of Xcel Energy's proposed Fleet EV Service and Public Charging pilots in Minnesota. These programs add up to more than $26 million and seek to enable make-ready investment for up to 700 charging ports serving fleet vehicles and infrastructure to support an estimated 350 DC fast charging stations on corridors and at community mobility hubs.

In addition, in October 2019, the Missouri Public Service Commission voted to approve more than $6 million of investment in public, MUD, workplace, and fleet charging programs as part of Ameren Missouri's Charge Ahead Program. The additional investment will support 130 DC fast charging stations and nearly 700 Level 2 charging stations. This $6 million approval brings the total value of the Charge Ahead Program to $11 million, supporting the potential deployment of more than 150 DC fast charging stations and over 700 Level 2 charging stations.

The Midwest follows behind the Central Atlantic region in terms of approved utility investment in transportation electrification in 2019. Despite a gap of only $29 million in approved investment between the two regions, the Midwest lags far behind in terms of DC fast charging station investment with just over 500 stations supported by approved or pending programs compared to over 1,300 in the Central Atlantic. With regard to Level 2 stations, the Midwest leads the Central Atlantic, supporting more than 13,500 stations compared to the Central Atlantic's approximately 7,400.

[11] Note that the number of filings activities (approvals, new filings, and withdrawals/ denials) do not add up to the 10 total filings that saw activity in 2019 because some filings were partially approved and partially denied.

TABLE 3: MIDWEST FILINGS BY STATUS IN 2019

Utility	State	Filing Identifier	Date	Status	Potential Investment
Xcel Energy	MN	M-18-643	7/17/2019	Approved	$26,379,000
DTE Energy Company	MI	U-20162	5/2/2019	Approved	$13,115,000
Ameren Missouri	MO	ET-2018-0132	10/17/2019	Approved	$11,000,000
Consumers Energy	MI	U-20134	1/9/2019	Approved	$10,000,000
Ameren Missouri	MO	ET-2018-0132	2/6/2019	Rejected	$7,000,000
Duke Energy	KY	2019-00271	9/3/2019	Filed	$2,833,650
Indiana Michigan Power	IN	45235	5/14/2019	Filed	$2,100,000
Xcel Energy	MN	19-186	2/22/2019	Filed	$201,566
Wisconsin Public Service Corporation	WI	6690-UR-126	11/14/2019	Rejected	No costs allocated[9]
We Energies	WI	5-UR-109	11/14/2019	Rejected	No costs allocated[9]
Minnesota Power	MN	19-337	9/5/2019	Approved with Modification	No costs allocated[9]

This table shows all filing activity in the Midwest region in 2019. Minnesota and Michigan lead in terms of approved investment with more than $26 million and $23 million in new investment, respectively.

LOWER ATLANTIC

Filing activity for the Lower Atlantic and other regions drops off significantly compared to the regions covered above. There were just four filing actions in the Lower Atlantic throughout 2019 and only $24 million approved in one program in Georgia late in the year. Despite low approvals for the year, 2019 brough a surge in newly proposed funding across two programs that could bring in a potential investment of $97 million. There were no rejections or withdrawals in this region in 2019. Table 4 shows the breakdown of these filing changes.[12]

The $76 million Electric Transportation Pilot program filed in March by Duke Energy Carolinas and Duke Energy Progress remains pending a commission decision. The multi-faceted plan could support more than 4,000 Level 2 charging stations, about 380 electric bus and truck charging stations, and about 240 DC fast charging stations. The program includes a combination of utility-owned charging stations as well as utility-offered incentives for charging stations. It also includes an electric school bus pilot program in which the utility would offer subsidies for 85 electric school buses. Duke Energy would also install and own the charging stations for the electric school buses and test the ability of electric school buses to act as bi-directional energy storage grid resources. The program would be split between the subsidiaries Duke

[12] Note that the number of filings activities (approvals, new filings, and withdrawals/ denials) do not add up to the three total filings that saw activity in 2019 because some filings were partially approved and partially denied.

Energy Carolinas and Duke Energy Progress. The goal of the program is to assess best practices of vehicle-to-grid integration and the potential cost savings for the utility under increased EV and infrastructure adoption throughout North Carolina. The pilot would include education and outreach elements to raise awareness of the benefits of transportation electrification.

The region's only approval came in December when the Georgia Public Service Commission approved Georgia Power's proposed rate base increase to cover the cost of $3 million that has already been spent on programs included in the 2014 Electric Transportation Pilot as well as an additional $3 million anticipated to be spent over the course of the project on capital expenses. The rate case approval includes an additional $18 million to be spent on grid upgrades and infrastructure needed to support the growing EV charging network. The program covers investment in EV charging for residential, workplace, and public use customer groups.

In September 2019, Dominion Energy Virginia filed a $20 million Smart Charging Infrastructure Pilot Program as part of its Grid Transformation Plan 1B. The pilot program will support charging infrastructure for MUD, workplace, public, and transit bus customers and includes rebates for make-ready charging infrastructure, rebates for smart charging equipment that enables managed charging, and utility-owned charging infrastructure at strategic locations. The program could support more than 400 Level 2 charging stations, more than 30 DC fast charging stations, and approximately 60 electric bus and truck charging stations.

TABLE 4: LOWER ATLANTIC FILINGS BY STATUS IN 2019

Utility	State	Filing Identifier	Date	Status	Potential Investment
Duke Energy Carolinas and Duke Energy Progress	NC	E-2, Sub 1197	3/29/2019	Filed	$76,018,500
Georgia Power Company	GA	42516	12/17/2019	Approved	$24,000,000
Dominion Energy Virginia	VA	PUR-2019-00154	9/30/2019	Filed	$20,779,565

This table shows all filing activity in the Lower Atlantic region so far in 2019. The proposal of Duke Energy's $76 million pilot program was the most significant activity in the region.

While the number of filings that saw activity in the Lower Atlantic region in 2019 is small, these filings represent substantial investment in transportation electrification. With $120 million of approved and proposed investment in 2019, the Lower Atlantic Region surpassed the $72 million of approved and proposed activity in the Midwest and trails not too far behind the Central Atlantic's nearly $200 million.

GULF COAST

There was no new filing activity recording during the second half of 2019 in the Gulf Coast region. The only filing action in the region for the year was the filing by CenterPoint Energy's subsidiary Houston Electric during the first half of 2019 in which the utility requested a tariff restructuring and increased allowance to help cover costs associated with grid improvements necessary to accommodate increasing EV demand in the Houston area. This would help the company prepare for and facilitate increased expansion of the charging network in the area. This is the first filing recording on the EV Hub for this region. Table 5 summarizes this filing.

TABLE 5: GULF COAST FILINGS BY STATUS IN 2019

Utility	State	Filing Identifier	Date	Status	Potential Investment
CenterPoint Energy	TX	49421	4/5/2019	Filed	No costs allocated[9]

This table shows all filing activity in the Gulf Coast region in 2019. The EV Rate filed by CenterPoint Energy is the only activity in the region.

NEW ENGLAND

The only recorded filing activity in New England in 2019 was the substantial rejections and partial approval of National Grid's more than $160 million proposal for Phase II of their EV program. Denied program elements for $153 million of investment would have supported more than 17,000 Level 2 charging stations and 300 DC fast charging stations. The commission justified this rejection based on timing, stating that the proposal for Phase II came too soon to incorporate learnings from Phase I of the EV program. Approximately $8.8 million of the program was approved. These approved elements include a research and development plan, an off-peak charging rebate for residential customers, and a fleet advisory services program, which will support the electrification of public and private light, medium, and heavy-duty fleets by providing fleet electrification studies to 100 fleet operators. Table 6 summarizes the rejected and approved elements of National Grid's proposal.

TABLE 6: NEW ENGLAND FILINGS BY STATUS IN 2019

Utility	State	Filing Identifier	Date	Status	Potential Investment
National Grid	MA	18-150	9/30/2019	Rejected	$153,700,000
National Grid	MA	18-150	9/30/2019	Approved	$8,825,000

This table summarizes the rejected and approved elements of National Grid's proposal and represents the only recorded filings activity in New England in 2019.

ROCKY MOUNTAIN

There were four filings that saw activity in the Rocky Mountain region in 2019, representing more than $6 million. There were two approvals and two new filings. All of this filing activity occurred during the second half of 2019. Table 7 summarizes this activity.

In Utah, Rocky Mountain Power received approval for a $2 million proposal to partner with Utah State University and the Utah Transit Authority (UTA) in order to develop a power balance and demand response system which will include charging stations with outputs of up to 400 kilowatts to be installed at UTA's Intermodal Hub located in Salt Lake City, Utah. The Intermodal Hub Project is designed to address the high cost of grid infrastructure needed for high output charging stations by researching methods to adaptively manage power flow between the grid and various electric charging needs. The project will combine a diversity of electric charging needs (light rail, bus, passenger, truck, and ride hailing services) at

an intermodal transit center to create a multimegawatt, co-located, coordinated, and managed charging system.

TABLE 7: ROCKY MOUNTAIN FILINGS BY STATUS IN 2019

Utility	State	Filing Identifier	Date	Status	Potential Investment
Xcel Energy	CO	19A-0471E	8/29/2019	Filed	$3,612,000
Rocky Mountain Power	UT	16-035-36	6/28/2019	Approved	$2,000,000
Xcel Energy	CO	18A-0606EG	8/22/2019	Filed	$778,040
Rocky Mountain Power	UT	19-035-T16	12/31/2019	Approved	No costs allocated[9]

This table summarizes filing activity in the rocky mountain region in 2019. all filing activity occurred during the second half of the year.

In Colorado, Xcel Energy requested deferred accounting treatment for $3.6 million in order to allow the utility to pursue several transportation electrification projects prior to receiving approval for its Transportation Electrification Plan, which it will file on or before May 2020. These projects would support 205 Level 2 charging stations, 20 DC fast charging stations, and 18 electric bus and truck charging stations.

Despite a slow first half of the year in the Rocky Mountain region, the second half of 2019 saw significant filing activity and 2020 is likely to see more activity in Colorado once Xcel Energy submits its Transportation Electrification Plan required by legislation adopted in 2019 [6].

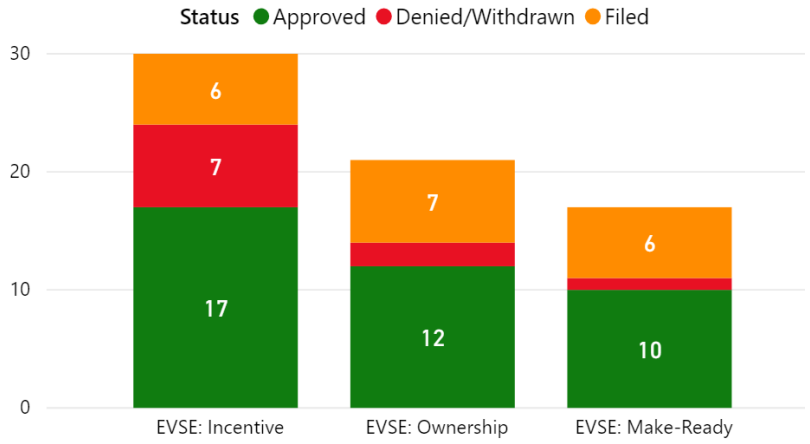
KEY TAKEAWAYS FROM FILINGS IN 2019

Overall, 2019 saw a total of more than $598 million in approved and pending filings. While this represents a significant amount of filing activity, it is down from 2018, which saw a total of more than $1.9 billion in approved and pending filings. Approvals for 2019 were worth more than $375 million compared to the $758 million of approvals in 2018. Outside of California, however, approvals are up, with more than $185 million in approved utility investment compared to about $87 million in 2018. In terms of the number of Level 2 charging stations that approved and pending filings could support, 2019 was also down from 2018 with a potential approximately 35,000 Level 2 charging stations compared to almost 99,000 in 2018. However, the number of potential DC fast charging stations is up, with over 2,200 potential DC fast charging stations supported by approved and pending filings in 2019 compared to only 1,200 in 2018.

2019 saw two rejections of utility proposals to own and operate charging infrastructure and seven rejections for incentive programs, indicating challenges for utilities pursuing these investment approaches in 2019. Conversely, programs focused on make-ready investment saw the fewest denials, with only one such program denied in 2019. This is consistent with activity in 2018 and 2017, which both saw no denials of make-ready investment proposals. Despite the fact that make-ready proposals have consistently seen the fewest denials, it is worth noting that the approval rate of programs in which the utility proposed to

own EV charging infrastructure has increased annually since 2017, with two ownership programs approved in 2017, 11 approved in 2018, and 17 approved in 2019, representing approval ratings of 70 percent, 83 percent, and 76 percent, respectively. Figure 3 shows filing types by their status for 2019.

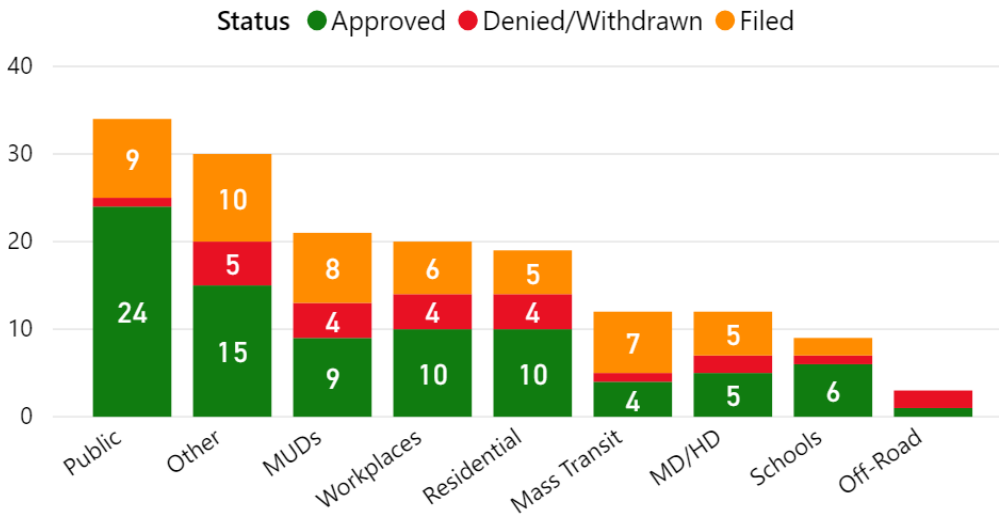
FIGURE 3: 2019 FILING ELEMENT TYPE BY STATUS



This chart shows the number of approvals, pending filings, and denials by filing element type. Make-ready investments saw the fewest denials in 2019. This was the case in 2017 and 2018, which both saw no denials of make-ready investments.

In terms of use targets, programs targeting public charging infrastructure saw the most approvals in 2019. This was also the case in 2018. Figure 4 shows the number of filings, by status, for various use targets.

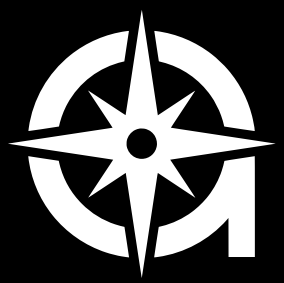
FIGURE 4: 2019 FILING USE TARGETS BY STATUS



This chart shows the use targets for different filings separated by use target. Programs targeting public charging have been the least likely to be rejected in 2019. This was the case in 2018 as well.

Utilities continue to pursue EV rates in order to push EV charging load to off-peak hours. Programs including EV rates were approved in eight states and the District of Columbia in 2019. These jurisdictions include Arizona, California, Delaware, Hawaii, Maryland, Massachusetts, Minnesota, Pennsylvania, and the District of Columbia. Utilities and their regulators are increasingly adopting either modifications to existing commercial and industrial rates or new commercial and industrial rates designed for public DC fast charging, medium- and heavy-duty vehicle charging, and other applications with higher power requirements that are often disadvantaged on existing rates that have high demand-based charges.

Looking ahead, only $43.5 million of the $223 million in new programs filed in 2019 are located in California, likely leading to an increased share of utility funding from outside the golden state. However, approval for bridge funding for Southern California Edison's $760 million Charge Ready 2 program in October 2019 indicates that the commission could be preparing to approve this large program in 2020. Statewide electrification strategies issued by New York and Jew Jersey in the early days of 2020 call for utility participation and could also lead to new investment in the EV sector.



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