GAMCO Investors, Inc.
GABELLI ASSET MANAGEMENT COMPANY (UK)

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Contact: Gustavo Pifano
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January 7, 2021

Dear Shareholders of the Gabelli Value Plus+ Trust:

Although we do not benchmark the Trust against any specific passive index, we would like to point out the strong investment performance so far this fiscal year, in absolute terms.

We wish to underscore the sharp recovery in the Trust's NAV and share price in the six months to September 30, generating a 22% NAV total return (which we view as very respectable on an absolute basis) and 41% share price return. This gain continued in the fourth quarter of calendar 2020 as your Trust generated an 18% NAV total return, bringing the fiscal year to date NAV total return to 44%.

Value investing in the United States has been out of favor for an extended period. The quarter which just ended was the first since the fourth quarter of 2016 when value stocks generally outperformed growth stocks by this margin.

Small cap stocks also significantly outperformed large caps, which is meaningful for the Trust based on our research-intensive approach's focus on small and mid-sized capitalization stocks. We continue to believe that smaller and mid-capitalization stocks in the U.S. will outperform, and that the portfolio is well positioned to benefit from this trend.

We would remind shareholders that there remains only eighteen months until the next scheduled continuation vote of the Trust in July 2022, at which point the largest shareholder, Associated Capital, has committed that if a majority of shareholders voted against continuation, it would not block a subsequent vote to liquidate the Trust.

Sincerely,

Gabelli Funds

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London SW1A 1NF, United Kingdom
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January 5, 2021

GABELLI FUNDS

CHARGED UP

AN ELECTRIFYING VIEW AT THE FUTURE OF THE EV CHARGING ECOSYSTEM

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-Please Refer To Important Disclosures On The Last Page Of This Report-

January 5, 2021

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CHARGED UP:
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EXECUTIVE SUMMARY

Major industries often grow from humble beginnings.

The first "drive in" gas station in the United States that was designed to sell to the public opened in Pittsburgh on October 31, 1913. The Gulf Oil station on the corner of Baum and St. Clair sold 30 gallons of fuel on the first day at a price of $0.27 per gallon (over $6.30 in today's terms). At the time, the US auto population was under 600,000, and a driver who needed fuel needed to 1) hop off the seat to access the fuel tank 2) use a dipstick as there was no fuel gauge and 3) crank the gas as fuel pumps were not invented until the late 1920's.

By 1920, 15,000 gas stations had emerged before ballooning to roughly 200,000 by the end of the "Roaring Twenties." There are roughly 115,000 stations in existence in the United States today, each with roughly four to eight active pumps – putting the number of active fueling points upwards of 700,000.

Similarities between the dawn of the Automotive Age and those of the Electric Vehicle (EV) Era are myriad. A nascent product, originally purchased primarily by wealthy buyers, finds mass adoption as prices fall and education increases regarding improvements upon the prior model (horse-drawn carriages and Internal Combustion Engine-d vehicles).

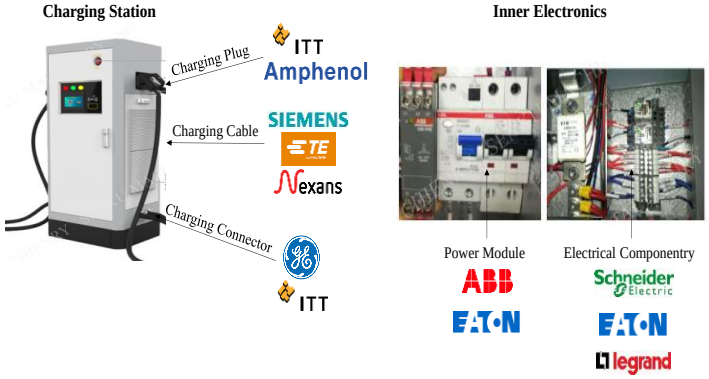
In a similar spirit to the one that gave rise to that first Gulf Oil Station, investments by major stakeholders are well underway to provide a network of nationwide charging stations – one that cultivates a welcoming environment for potential electric vehicle buyers and eliminates the "range anxiety" that to this point has been a hurdle for faster EV.

The Edison Electric Institute, an industry trade association, estimate that about 9.6 million charge ports (the fuel pumps of tomorrow) will be required to support 18.7 million EVs in 2030. Of the 9.6 million, 100,000 will need to be "Fast Chargers" capable of rapid (<1 hour) filling, with over 2 million more public chargers at either specified fueling locations (Charging Stations) or at office and commercial locations. Home chargers make up the balance (and significant majority).

Growth in EVs and the charging infrastructure will require considerable coordination among major stakeholders, including the automotive Original Equipment Manufacturers (OEMs), utilities, charging station manufacturers, municipalities and governments.

The massive expenditures required to transform American highways into hard-wired avenues for efficient fuel charging will bring opportunities for investment within the public equity markets. As we have seen in 2020, the market appetite for investments within the EV space is enormous, with share prices for TSLA, NKLA, and others more than doubling at points. Those companies that will be required to support this growth could possibly see similar treatment in time.

Ex. 1 Sample EV Fast Charging Station



Source: Google Images

This white paper, coordinated among Gabelli Funds' Automotive, Utilities, Industrials, and International Research teams, seeks to outline, project, interpret and communicate some of the many investing opportunities ahead within the Electric Vehicle charging space provided by the exponential growth expected for EVs over the next decade.

ELECTRIFICATION DRIVING EXPANSION OF CHARGING INFRASTRUCTURE

The timely convergence of increasing regulations to curb emissions, improving battery economics, an increased number of electrified options from every major automaker, and rapidly expanding charging infrastructure has finally brought the automotive industry to a true inflection point in electric vehicle adoption. As a result, we expect global electric vehicle production to grow from 2.4 million units in 2019 to 38 million by 2030 and the total number of electric vehicles on the road to grow from 7.7 million to 168 million over the same period (Table 1). This includes both battery electric/fully electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs). Below, we highlight the major growth drivers for electric vehicle adoption that should support rapid expansion of charging infrastructure over the next decade.

Table 1 **Global Electric Vehicle Production 2017A – 2030P**

(thousands)	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
Global BEV	775	1,395	1,725	2,085	2,855	3,950	5,490	7,480	9,905	12,815	16,525	21,270	27,360	35,955
Growth	*69%*	*80%*	*24%*	*21%*	*37%*	*38%*	*39%*	*36%*	*32%*	*29%*	*29%*	*29%*	*29%*	*31%*
Global PHEV	360	705	705	600	715	820	940	1,075	1,220	1,395	1,590	1,810	2,070	2,365
Growth	*29%*	*96%*	*0%*	*-15%*	*19%*	*15%*	*15%*	*14%*	*13%*	*14%*	*14%*	*14%*	*14%*	*14%*
Total Global EV	1,225	2,100	2,430	2,685	3,570	4,770	6,430	8,555	11,125	14,210	18,115	23,080	29,430	38,320
Growth	*66%*	*71%*	*16%*	*10%*	*33%*	*34%*	*35%*	*33%*	*30%*	*28%*	*27%*	*27%*	*28%*	*30%*
Mix														
% BEV	63%	66%	71%	78%	80%	83%	85%	87%	89%	90%	91%	92%	93%	94%
% PHEV	29%	34%	29%	22%	20%	17%	15%	13%	11%	10%	9%	8%	7%	6%
(thousands)														
Global EV Population	3,195	5,295	7,725	10,410	13,980	18,750	25,180	33,735	44,860	59,070	77,185	100,265	129,695	168,015

Source: Gabelli estimates, EV Volumes, Inside EVs, IEA, McKinsey

Climate Control – Emissions Regulations

Increasingly stringent emissions regulations, particularly in Europe and China, is without a doubt the single biggest driving force for vehicle electrification. European emissions regulations have already significantly altered light vehicle production in the region and are expected to further tighten in the coming years. European automakers must reduce average CO2 emissions targets for new passenger cars from 130 g/km in 2015 to 95 g/km by 2020 and 60 g/km in 2030 or face heavy fines for target exceedance which we believe could serve as a €30 to €35 billion industry headwind over the next decade. Simply put, automakers cannot be compliant without producing electric vehicles.

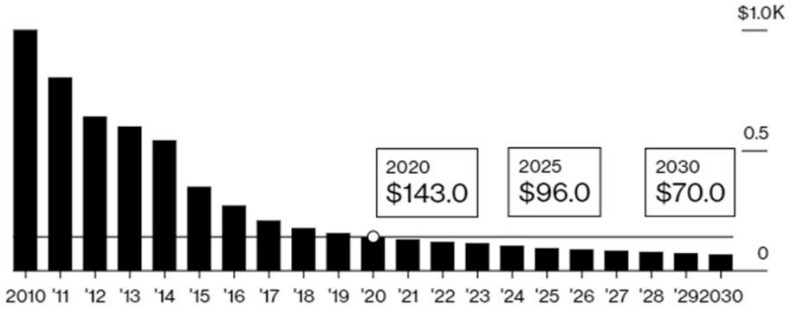
China has also enacted aggressive emissions targets as the government has stated a goal of making the country a global leader in electric vehicle production with a mandate of selling roughly six million new energy vehicles by 2025 compared to approximately 1.3 million in 2019. As the largest automotive and EV market in the world, it is no surprise that every EV maker is focusing substantial efforts to increase their presence in the region.

In the U.S., the regulatory environment is also likely to tighten, with mandated improvements in corporate average fuel economy and green energy initiatives supporting charging infrastructure and electric vehicle adoption serving as a potential pillar of the new administration. California recently announced plans to ban sales of internal combustion engine vehicles by 2035 and other states could follow suit, further accelerating long term EV adoption.

More Cost Effective Batteries Support Broader EV Adoption

Breakthroughs in battery technology and production has led to a dramatic reduction in battery costs. Comprising the most expensive part of an EV, since 2010, the price of a battery pack has fallen from roughly $1,000 per kWh to approximately $143 per kWh today and is expected to fall below $100 per kWh by 2025 as shown below in Exhibit 2. $100 per kWh is largely regarded as a “tipping point” whereby cost parity with ICE engine vehicles is achieved. TSLA aims to get its own costs down from about $110 per kWh today to roughly $50 per kWh in the next few years as the company rapidly expands cell production. Improved production techniques, simplified pack designs, standardized platforms, increasing order size, continued penetration of high energy density cathodes, and economies of scale as OEMs make additional investments into battery technology should all contribute to industry-wide cost reduction.

Exhibit 2 **Average Lithium-ion Battery Pack Prices 2010A – 2030P**



Source: BNEF

New EV Body Types Expected to Drive Further Demand

According to Cox Automotive, roughly 75% of new vehicles sold in the U.S. are trucks, crossovers, or SUVs. Compare this with the current cohort of EVs which are predominately passenger cars and it's easy to understand how meaningful EV demand is likely to be driven by body types over the coming years as major automakers are set to produce electrified versions of popular trucks and SUVs. Globally, over 100 new electric vehicle models from major automakers including Ford, GM, and Volkswagen as well as startups like Rivian and Lucid are scheduled for production by 2025. Tesla's Cybertruck, which was introduced in November 2019 and is scheduled for production in late 2021, received over 600,000 reservations in less than a year. GMC's EV Hummer introduced in the fall of 2020 sold out its reservation list in less than 24 hours. Cox believes vehicle demand has largely been a body demand story (e.g. SUVs, CUVs, Trucks) and argues upcoming EV models that match consumer preferences will be further support EV adoption over the next decade.

Exhibit 3 **Upcoming Electric Vehicle Models**

Source: Tesla, GM, VW, Rivian, Ford

Other notable announcements from major automakers and their upcoming EV plans include:

- GM – Developing 30 new EVs by 2025, $27b investment between 2020-2025
- Ford – Developing 40 new EVs and $11-12b investment between 2018-2022
- VW – Developing 70 new BEVs by 2030, €35b investment in EVs over the next five years
- BMW – Developing 25 new EVs by 2023, targeting 15-25% of sales from EVs by 2025
- Mercedes – Developing 10 new EVs by 2022, over 20 BEVs by 2030, $11b investment through 2030

Electric Vehicle Battery Recycling

Electric vehicle batteries typically last between 7 and 10 years and must be properly handled for materials extraction, recycling, and disposal. These batteries cannot simply be thrown away in a landfill due to the various toxic and flammable materials contained within each battery pack and the recycling process itself is complex and costly.

Ex. 4 Li-Ion Battery Removal

Source: Bloomberg

Batteries can be recycled through smelting, direct recovery or other processes and are not yet commercially viable. However, at this point, the cost of extracting lithium from old batteries is about 5 times more expensive than mined lithium. According to the Institute for Energy Research, the cost of fully recycling a lithium-ion battery is about €1 per kilogram but the value of the raw minerals extracted from that process is roughly a third of that. An EV owner out of warranty with a depleted battery can expect to pay roughly $10,725 to replace a battery pack assuming current $143/kWh battery prices and a 75 kWh battery pack. By 2030, the same EV owner would likely pay approximately half that amount ($5,250) to replace a battery pack assuming further battery price reductions to $70/kWh.

Given the nascent stage of the electric vehicle industry with less than 10 million electric vehicles on the road globally, most of which are less than 7 years old, the battery recycling industry is still in its early days. That being said, this is still an incredibly promising industry opportunity given the exponential increase in the amount of battery packs in the coming years - the global stockpile of end of first life electric vehicle battery packs is expected to grow from 55,000 in 2018 to 3.4 million by 2025. Additionally, most electric vehicle battery packs still have up to 70% of their energy capacity when depleted or at the end of first life and can last another 7 to 10 years in their second lives. After these batteries are recycled, there are various use cases for the materials such as battery storage, solar energy systems, and new EV battery packs.

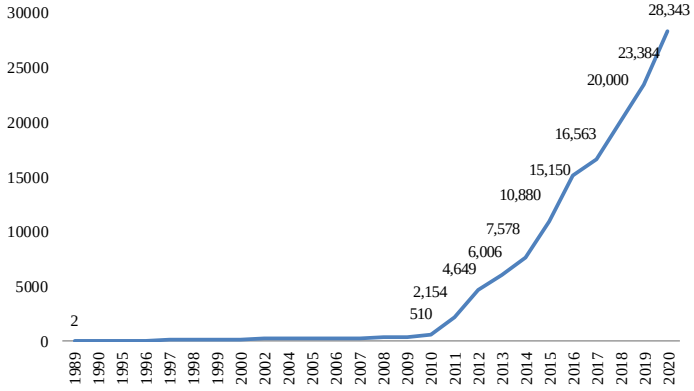
CHARGING STATIONS 101

Although the vast majority of charging is done at home or work, public perception regarding an EV running out of power without a charging station nearby (i.e. range anxiety) has been a major hurdle for consumers evaluating an EV purchase. This has been mitigated in recent years as the nationwide public charging infrastructure has significantly expanded. In the U.S., the number of public charging stations has grown from 510 locations in 2010 to over 28,000 today (49% CAGR). A charging station is comparable to a gas station and a charging port/point is comparable to a fuel pump. Each charging station can have one or several charging ports. The roughly 28,000 public charging stations across the country consist of approximately 95,000 charging ports (per the Department of Energy). Privately-held ChargePoint owns the largest network of charging stations in the U.S. with over 11,000 charging stations, representing approximately 40% of the market. ChargePoint recent announced a reverse merger IPO with SPAC, Switchback Energy Acquisition Corp (SBE), in a transaction that values the company at $2.4 billion and set to close by the end of the year. Tesla is the second- largest provider of charging stations in the country with over 5,300 locations, including ~1,000 Supercharger stations, and owns 19% of the U.S. public charging station market. Similar to the current the current fueling ecosystem in the US, we expect operators to look to profit from providing charging to consumers; to this point most third party charging systems are in pilot programs with conversations indicating some degree of uncertainty into what a pricing model will look like once charging stations become more widespread.

Ex. 5 Gas to EV Terminology

Source: Google images

Exhibit 6 Charging Stations in the U.S. 1989-2020



Source: U.S. Department of Energy

Table 2 U.S. Public Charging Networks

ChargePoint	11,428	40%
Tesla	5,375	19
SemaCharge	1,644	6
Blink	1,306	5
eVgo	836	3
Greenlots	722	3
EV Connect	641	2
Electrify America/VW	500	2
Others	5,891	21
Total	28,343	100%

Source: U.S. Department of Energy

Charging Growth in China: In China, the growth of public charging stations has been even more rapid. According to the China Electric Charging Infrastructure Promotion, as of the end of July 2020, 566,000 public charging stations have been installed in China, representing about 42% of the 1.34 million charging facilities in China. This is up from ~50k stations in 2015 and ~18k in 2012. Of the 566,000 public charging stations, it is estimated that the top 4 players represent ~75% of the stations:

- TGood/Telaidian: 163,000 units; Spun out of Qingdao TGood Electric (300001-SZ) and looking to IPO in China
- StarCharge: 133,000 units; recently closed a $125 million Series A funding led by Schneider Electric and looking to IPO in China
- State Grid Corporation of China: 88,000 units; SOE
- ykccn.com aka Yunkuaichong: 45,000 units; private

Tesla Supercharger Network

Tesla operates 5,375 public charging stations in the U.S. including ~1,000 Supercharger locations with Tesla Level 3 fast chargers. The Tesla charging network is available to all Tesla owners without additional membership fees. Tesla charges $0.28 per kWh for Level 3 supercharging and in areas where local laws prevent non-utility entities from selling power by the kWh, the company charges $0.12 per minute for vehicles charging at or below 60 kWh and $0.24 per minute above 60 kWh. Tesla also provides free Level 2 charging at various destination charging locations. Only Tesla vehicles can charge at Tesla supercharging locations, however, all Teslas can charge at any non-Tesla charging station using cable adaptors. Non-Teslas can also charge at Tesla Level 2 destination chargers using cable adaptors.

Exhibit 7 **Tesla Supercharger Station**

Source: Tesla

Charging Type Overview

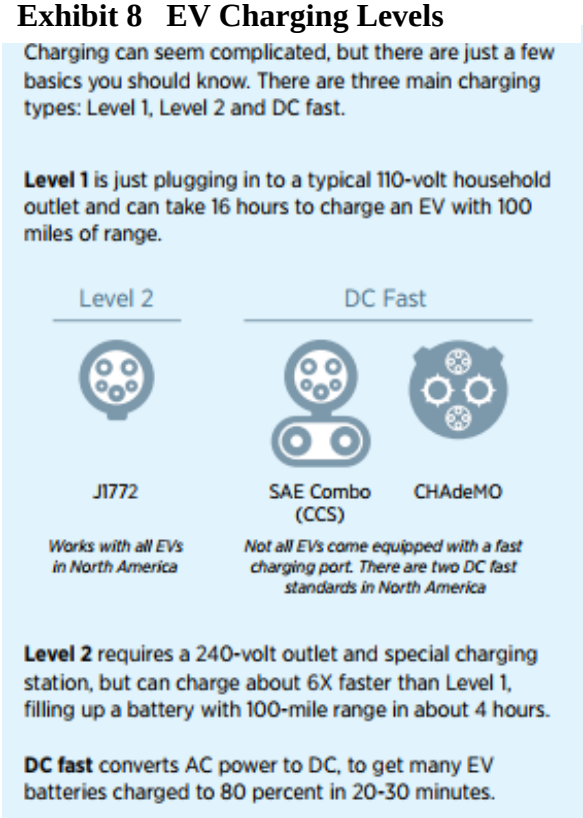
Electric vehicle charging times vary depending on the charger, the type of electric vehicle, and the desired amount of range per charge.

- ***Level 1*** charging uses a standard 110/120-volt household outlet and provides 2 to 5 miles of range per hour of charging. According to the U.S. Department of Transportation, 90% of commuters drive 60 miles or less for their daily roundtrip commute so overnight charging at home could provide sufficient range for most driving applications.

- ***Level 2*** charging requires a special 240-volt outlet and charging station and provides approximately 10 to 40 miles of range per hour of charging. 90% of public charging stations in the U.S. (25,474 stations) provide Level 2 charging.

- ***Level 3*** DC Fast charging provides 150 to 300 miles of range per hour of charging. Only 15% of public charging stations in the U.S. (4,197 locations) provide DC fast charging but that number is expected to increase as future expansion of public charging infrastructure in the U.S. and Europe is centered on high-speed charging stations. Tesla's Supercharger network uses proprietary technology and offers even greater range by providing 150 miles in 20-25 minutes of charging.

Exhibit 8 EV Charging Levels

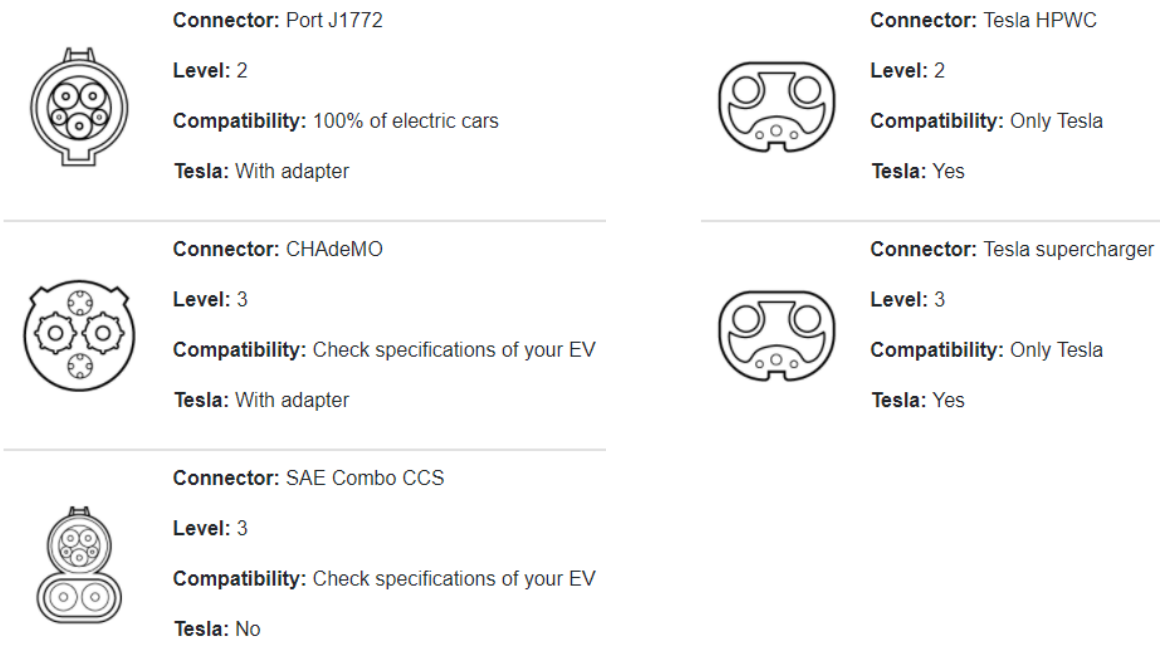


Source: ChargePoint

EV Charging Connectors

The most common connector used by EVs for Level 1 and 2 charging is the SAE J1772 plug which can be used by any EV in North America, including Teslas. The J1772 plugs come standard with all EVs. For Level 3 fast charging, the CHAdeMO and CCS connectors are the most commonly used plugs. CHAdeMO is commonly used by Japanese automakers while CCS is mostly used by American and German automakers. Tesla uses its own proprietary plugs for Level 2 charging and Level 3 supercharging that only Teslas can use. Tesla vehicles can also charge at non-Tesla charging stations using Tesla to CHAdeMO adaptors, however, Tesla to CCS adaptors are not available in North America and are only available in Europe.

Exhibit 9 **EV Charging Connector Types**



Source: Chargehub.com

Exhibit 10 **Electric Vehicle Supply Equipment (EVSE)**

Source: Chargehub.com

Charging Times

Charging times vary depending on the EV, EV battery pack, EVSE, and various other factors, however, to provide an illustrative example, Table 3 below shows the charging times for various Tesla models using Level 2 EVSE. The times range from 6 to 13 hours for the newer models with 240-400 miles of range. For most EVs, Level 2 charging provides 10-40 miles of range per hour. For Level 3 fast chargers, most EVs can fully recharge from a depleted battery pack in about an hour. Level 3 fast chargers typically provide 150-300 miles of range per hour. Tesla's Level 3 Superchargers provide superior charging times of approximately 150 miles of range in 20-25 minutes.

We would be remiss if we did not mention the emergence in recent weeks of Solid State Lithium Ion as a potential alternative battery type. While the jury is still out as the technology proves itself, the potential for a considerably faster battery charge (80% in ten minutes for a 300 mile battery) could make EV adoption all the more rapid.

Table 3 **Tesla Charging Times (Level 1 and 2 EVSE)**

Model & Year	Max Charge Rate	Battery Capacity	Charge Time on L1	Charge Time with JuiceBox Pro 40	Charge Time with JuiceBox Pro 80	Range
Model 3 2019 (Performance, Long Range)	11.5kW	75 kWh, 62 kWh	28 hours (28.2 hrs)	8 hours (8.38 hrs)	7 hours (7.05 hrs)	310 miles
Model 3 2019 (Standard Range)	7.7kW	50 kWh	22 hours (21.8 hrs)	8 hours	8 hours	240 miles
Model S 2019 (Long Range)	11.5kW	~100 kWh	53 hours (52.8 hrs)	12 hours (12.7 hrs)	11 hours (10.8 hrs)	370 miles
Model S 2019 (Performance)	11.5kW	~100 kWh	49 hours (49.3 hrs)	12 hours (11.89 hrs)	10 hours (10.14 hrs)	345 miles
Model X 2019 (Long Range)	11.5kW	~100 kWh	65 hours	13 hours	11 hours (10.83 hrs)	325 miles
Model X 2019 (Performance)	11.5kW	~100 kWh	61 hours	12 hours (12.2 hrs)	10 hours (10.17 hrs)	305 miles
Model Y (RWD)	*11.5kW	*75 kWh	43 hours (42.8 hrs)	9 hours (9.09 hrs)	7 hours (6.8 hrs)	300 miles
Model Y (Dual Motor)	*11.5kW	*75 kWh	40 hours	8 hrs (8.48 hrs)	6 hours (6.36 hrs)	280 miles
Roadster (2011)	16.8 kW	53kWh	41 hours	5 hours	2.5 hours	244 miles

Source: EV Charging/EneIX

Residential Charging Costs

The national average for electricity is approximately $0.13/kWh with states like California having much higher rates at $0.20/kWh. EVs have different EPA rated efficiency ratings as measured by miles/kWh, however, most EVs efficiency ratings range from 3-5 miles/kWh. A California resident who owns a Tesla Model 3 with a 75 kWh battery pack, 300 miles of range, and a 4 mile/kWh efficiency rating, would pay approximately $0.05 per mile or $15 to fully charge the battery. A comparable ICE vehicle with a 16 gallon fuel tank averaging 40 mpg at $3.00/gallon gas prices would pay approximately $0.08 per mile or $48 to fill up the gas tank. A Tesla Model 3 would need to fully charge twice to match the distance travelled in a comparable ICE vehicle with a full tank of fuel (i.e. ~300 miles of range for a Model 3 vs ~640 miles on a full tank for an ICE vehicle). Tables 4 and 5 below compares the costs of driving on electricity vs. gasoline.

Table 4 Cost of Driving - EV ($/mile)

Cost of Electricity	Efficiency in miles/kWh				
$/kWh	3	3.5	4	4.5	5
$0.10	$0.03	$0.03	$0.03	$0.02	$0.02
$0.15	$0.05	$0.04	$0.04	$0.03	$0.03
$0.20	$0.07	$0.06	$0.05	$0.04	$0.04
$0.25	$0.08	$0.07	$0.06	$0.06	$0.05
$0.30	$0.10	$0.09	$0.08	$0.07	$0.06
$0.35	$0.12	$0.10	$0.09	$0.08	$0.07
$0.40	$0.13	$0.11	$0.10	$0.09	$0.08
$0.45	$0.15	$0.13	$0.11	$0.10	$0.09
$0.50	$0.17	$0.14	$0.13	$0.11	$0.10
$0.55	$0.18	$0.16	$0.14	$0.12	$0.11
$0.60	$0.20	$0.17	$0.15	$0.13	$0.12
$0.65	$0.22	$0.19	$0.16	$0.14	$0.13
$0.70	$0.23	$0.20	$0.18	$0.16	$0.14
$0.75	$0.25	$0.21	$0.19	$0.17	$0.15

Source: Gabelli estimates

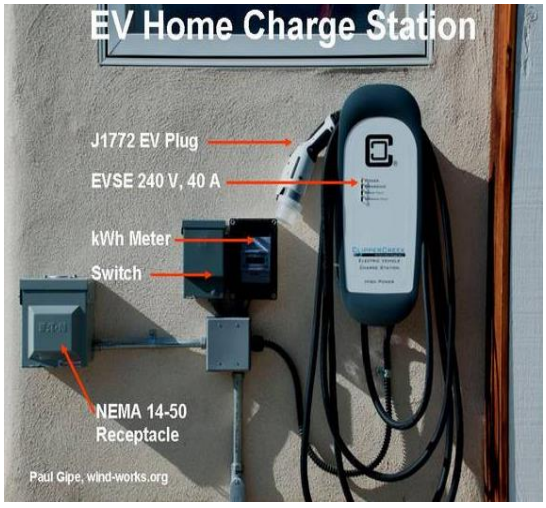
Table 5 Cost of Driving - Gasoline ($/mile)

Cost of Gas	Efficiency in miles per gallon				
$/gallon	25	30	40	45	50
$2.00	$0.08	$0.07	$0.05	$0.04	$0.04
$2.25	$0.09	$0.08	$0.06	$0.05	$0.05
$2.50	$0.10	$0.08	$0.06	$0.06	$0.05
$2.75	$0.11	$0.09	$0.07	$0.06	$0.06
$3.00	$0.12	$0.10	$0.08	$0.07	$0.06
$3.25	$0.13	$0.11	$0.08	$0.07	$0.07
$3.50	$0.14	$0.12	$0.09	$0.08	$0.07
$3.75	$0.15	$0.13	$0.09	$0.08	$0.08
$4.00	$0.16	$0.13	$0.10	$0.09	$0.08
$4.25	$0.17	$0.14	$0.11	$0.09	$0.09
$4.50	$0.18	$0.15	$0.11	$0.10	$0.09
$4.75	$0.19	$0.16	$0.12	$0.11	$0.10
$5.00	$0.20	$0.17	$0.13	$0.11	$0.10
$5.25	$0.21	$0.18	$0.13	$0.12	$0.11

Electric Vehicle Home Charger Equipment

All EVs come standard with mobile connectors and can be easily interchanged with various adaptors to match various charging standards and plugs. Besides the cost of electricity paid to utility companies, there are minor additional costs to charge an EV using the standard mobile connector and a Level 1 110/120 volt outlet (e.g. replacing, installing new outlet). 240 volt Level 2 charging requires additional electric vehicle supply equipment (EVSE) as shown to the right in Exhibit 11. Level 2 charging EVSE can be used for wall-mounted home applications or for mobile use. Level 2 EVSE range from ~$350 to $2,000, depending on the type of equipment. Privately held, ClipperCreek is a leader in EVSE and Exhibit 12 (next page) shows some of the company's 240 volt Level 2 charging EVSE. 240 volt Level 2 charging is essential for the vast majority of EV owners and the incremental cost of additional EVSE to support Level 2 charging at home or on the road should be factored in to the total cost of ownership of an EV

Exhibit 11 Sample EV Charger



Source: Google Images

Residential EV charging costs vary depending on the level of charging, EVSE, and installation/labor costs. Basic Level 1 charging generally does not require major incremental costs, however, replacing or installing a new 120 volt outlet could cost up to $300 including installation/labor. Level 2 chargers range from $350 to $2,000 with installation/labor adding another $750 to $3,700. Level 3 fast chargers are typically reserved for public and commercial applications with expensive price tags including equipment of $10,000 to $40,000 and installation/labor ranging anywhere from $4,000 to $50,000 per charger.

Exhibit 12 ClipperCreek Level 2 Charging EVSE

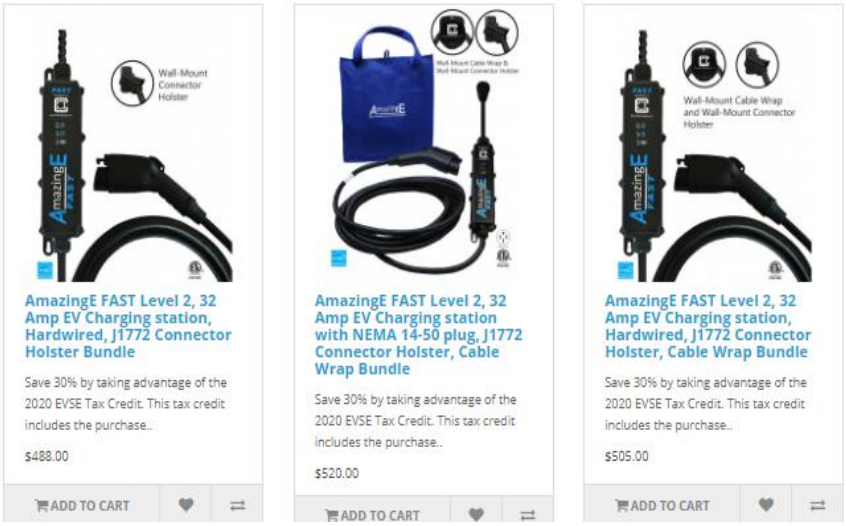


Table 6 (below) compares the average costs of home charging systems.

Table 6 Electric Vehicle Charging System Costs and Features

	Level 1	Level 2	Tesla Level 2	Level 3
Charging Station	$80-180	$350-2,000	$500	$10,000-40,000
Installation & Labor	$0-150	$400-1,700	$500-1,200	$4,000-50,000
Total Cost	$80-330	$750-3,700	$1,000-1,700	$14,000-90,000
Charging Time	8-25 hours	4-10 hours	7-11 hours	30-60 minutes
Miles Charged/Hour	2-5	10-40	5-44	150-300
Amps	12-16	16-80	15-60	80-400
Volts	120	240	240	200-600
kW	1.4-1.9	2-19.4	2.8-11.5	20-240

Source: Home Guide, Gabelli estimates

Installation and Labor Costs

Installation and labor costs represent a meaningful portion of EV charging costs and range from $250 to $400 for a basic installation, $400 to $1,700 for a standard installation, and $1,500 to $4,500 for an extensive installation. Many older homes require electrical upgrades and considerable rewiring to supply enough power to the charging point. Major installation costs to retrofit existing residences to support charging capabilities include electrical circuit and outlet installations, wiring, electrical capacity/panel replacements, underground trenching, and/or garage remodeling. An electrical permit to install an EV charging station at home range from $50 to $200 depending on local requirements, however, many utility companies offer rebates to cover the permit cost. Exhibit 13 to the right outlines the typical installation/labor costs to install a residential EV charging station.

Ex. 13 EV Charging System Install Costs

Factor	Average Cost
Labor Charges for Electrician	$40 – $100 per hour
50-Amp Outlet & 240-Volt Circuit	$300 – $800
Wiring	$6 – $8 per foot
Trenching	$4 – $12 per foot
Permit	$50 – $200
200-Amp Electrical Panel Upgrade	$1,800 – $2,500

Source: Home Guide

Besides major equipment and installation/labor, other costs associated with accessories include Wi-Fi signal boosters ($20-80), cable organizers ($35), pedestal mounts ($160-850), and charger adaptors ($35-500).

Companies providing EV charging systems and products include ClipperCreek (private), ChargePoint (SBE), Tesla (TSLA), Enel Group (ENIA, through Enel X/JuiceBox subsidiary), ABB (ABB), Siemens AG (ENR.XE), Bosch (private), Elmec (private), Phillips & Temro Industries (private) and Webasto SE.

Public/Commercial Charging Fees

EV owners typically pay for charging in commercial locations based on a fee per kWh or per minute. The various public charging networks also provide monthly membership fees at around $4 to $8 per month that give the users a discounted charging fee. Some networks also charge a $1 session fee to non-members and an idling fee of $0.40 to $1.30 to discourage users from occupying a charger longer than they need to. Additionally, Level 3 fast charging costs more than Level 2 charging and some networks provide tiered pricing based on the power output of the charger (i.e. faster charge capacity costs more). Various commercial locations including office buildings, parking garages, and retail locations typically offer free Level 1 or Level 2 charging. Business owners at these locations determine pricing for their chargers and often provide them as a free service to employees or customers.

Ex. 14 Average Public Charging Station Fees

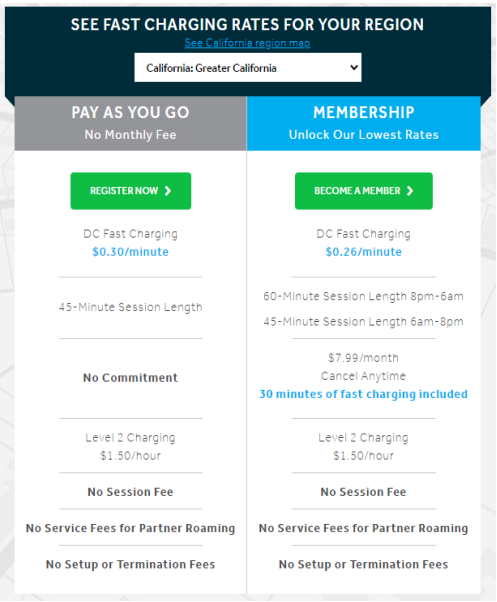
Metric	Average Cost
Per kWh	$0.28 – $0.79
Per Minute (Level 2)	$0.03 – $0.10
Per Minute (Level 3 DC Fast Charging)	$0.26 – $0.30
Per Hour (Standard)	$1.50 – $6.00
Idle Fees Per Minute	$0.40 – $1.30
Full Fill Up	$7 – $36
Monthly Membership / Subscription	$4 – $8

Source: Home Guide

As noted above, we expect operators (such as truck stops and service stations) to look to profit from providing charging to consumers; to this point most third party charging systems are in pilot programs with conversations indicating some degree of uncertainty into what a pricing model will look like once charging stations become more widespread.

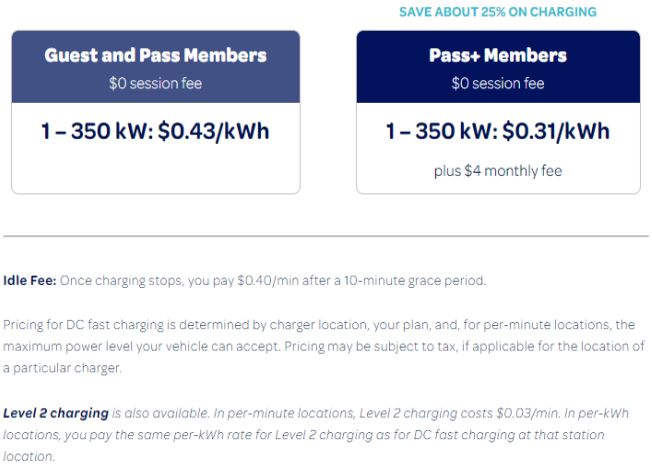
Privately controlled pricing data on commercial charging locations is not publicly available. However, privately owned fast-charging station owners typically charge $0.40 to $0.50 per kWh in California, based on anecdotal evidence.

Exhibit 15 EV Go Pricing Plans



Source: EV Go

Exhibit 16 Electrify America Pricing Plans

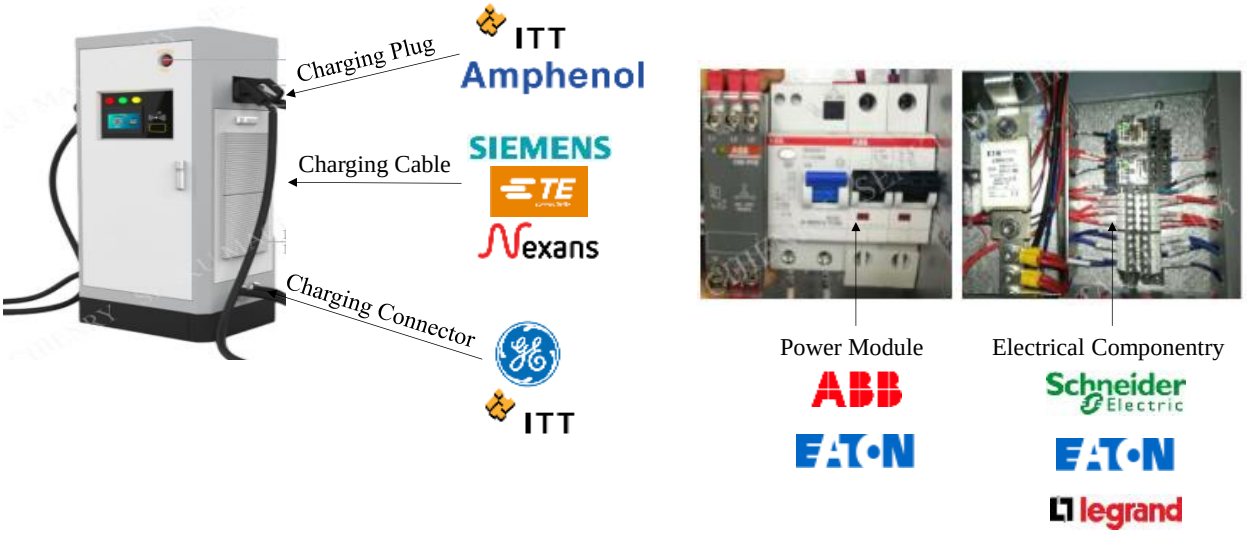


Source: Electrify America

INVESTING IN CHARGING STATION INFRASTRUCTURE

Beyond Tesla and electric utilities– by far the purest plays on Electric Vehicle and Charging growth – several companies are set to benefit from the coming investment growth within EV charging. We highlight several below.

Exhibit 17 **Sample Fast Charging Station and Vendors**



Feature Companies:

- **Chargepoint (NYSE: SBC)** – Operating more than 115,000 charging ports globally (mostly North America), the company has set sights on increasing that to 2.5 million by 2025. Chargepoint will be going public via SPAC by merging with Switchback Energy Acquisition Corp. (NYSE: SBE) in a deal that values the company at $2.4 billion (though SBC shares now put implicit valuation near $10 billion).

- **Blink Charging (NASDAQ: BLNK)** – A leading provider of over 23,000 EV charging stations (and growing), BLNK products and services include its Blink EV charging network ("Blink Network"), EV charging equipment, and EV charging services. BLNK uses proprietary, cloud-based software that operates, maintains, and tracks the EV charging stations connected to the network and the associated charging data. The company has established key strategic partnerships for rolling out adoption across numerous location types including parking facilities, multifamily residences and condos, and various commercial locations to drive growth.

- **ITT Inc. (NYSE: ITT)** – ITT's Cannon electrical connector brand manufactures and sells charging plugs and connectors. ITT's customers for this product offering include EFACEC Electric Mobility in Europe and Electrify America in the U.S. We estimate that this business accounts for approximately $30 million of sales (or 1.2% of total company revenue), though has been growing rapidly at triple-digit rates over the past two years.

- **Eaton Corporation (NYSE: ETN)** – Eaton's electrical equipment supports the internal power conversion and supply of charging stations. Further, the additional electricity demands placed on the grid from new charging stations (at homes, offices, and along highways) will require incremental Eaton electrical hardware and software. For example, a typical neighborhood today with 100 homes, and only a handful of electric vehicles, is supported by a single transformer. As soon as the number of homes with electric vehicles reaches 25, it requires a change-out of the electrical infrastructure and/or software managing the flow of electricity in that neighborhood.

- **ABB Ltd. (NYSE: ABB)** – The company's power conversion equipment (including power modules) and software measures and manages the flow of power for electric vehicle charging stations. We estimate that ABB generates approximately $200 million of sales (or 1% of total revenue) from EV charger-related applications, though management has plans to rapidly grow this portion of the business – including a $30 million investment for a new EV charger center of excellence in Italy.

- **Integrated Electrical Services (NASDAQ: IESC)** – IESC provides electrical contracting services including power and control wiring and electrical equipment installation. Its work includes installation of electric vehicle charging equipment at residential, commercial, and public sites. The company generates approximately $137 million of sales (or 13% of total company revenue) from its Infrastructure Solutions business, of which EV charging station installations are a part.

- **Ideal Power Inc. (NASDAQ: IPWR)** – IPWR's bi-directional semiconductor power switches enable grid-to-vehicle as well as vehicle-to-grid power supply. Customers include Coritech Services, a provider of high-power bi-directional electric vehicle charging systems, as well as the Department of Energy. The majority of the company's revenue comes from grant revenue for its bi-directional power switch development.

- **Phihong Technology Co. (TPE: 2457)** – A leading manufacturer in the power adapter market with a product offering that includes auxiliary power, control & supervisor unit (CSU), and DC charging modules used in EV charging stations. The company is headquartered in Taoyuan, Taiwan and maintains offices in California, the Netherlands, and Shanghai. Phihong generates a total of approximately NT$ 25 million of sales (or 1% of total company revenue) from EV charger applications, though this exposure is growing rapidly and was zero as recently as two years ago.

- **Delta Electronics (TPE: 2308)** – Delta Electronics is a manufacturing company that offers charging site management systems (web-based systems for medium-scale charging networks in buildings and other facilities where 20 to 50 sets of EV chargers are installed). Delta Electronics' system has smart energy management features designed to optimize site energy usage. The company is headquartered in Taipei, Taiwan with additional global offices across Asia, North America, and Europe. The company generates approximately NT$96 million of sales (or 36% of total company revenue) from its electronics infrastructure business, of which its charging site management systems are a part.

- **Siemens AG (ENR.XE)** – Siemens offers a series of charging equipment under its VersiCharge AC Charging Solutions for both residential and commercial customers. The Level 2 charger includes WiFi enabled SmartGrid connectivity along with charging optionality that includes charging when rates are lowest.

Others public companies: Amphenol (APH), Enel Group (ENIA, through Enel X/JuiceBox subsidiary),

Exhibit 18 **Tesla Charging Accessories**

Gen 1 NEMA Adapters
$45

Corded Mobile Connector
$520

SAE J1772 Charging Adapter
$95

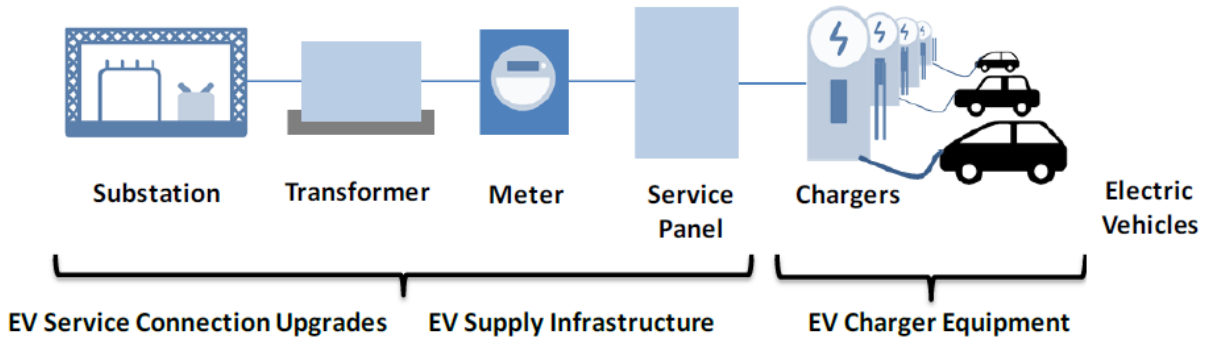
Source: Tesla

CHARGING STATION IMPACT ON ELECTRIC UTILITIES

The build-out of electric vehicle charging stations can benefit electric utilities in many ways, including growing electric demand, increased investment in rate base and lowering overall costs due to economies of scale and managing supply-demand efficiently. Utility opponents argue that the monopoly infrastructure and necessary grid connection provide unfair advantages to the utility compared with an entrepreneurial charging company. Initial utility involvement in EV charging infrastructure has been primarily through pilot programs where utilities build the charging ports and, in some cases, has been met with conflicting opinions. Many states have adopted policies to exclude utilities from the business, including Kentucky, Iowa, Vermont, Massachusetts, Connecticut, and others.

According to best practices recommended by the Smart Electric Power Alliance (SEPA), a shared utility and independent charging company responsibility is the preferred model for transportation electrification. Utility managements' core skill sets and the regulated rate-base/rate-of-return business model promote a utility focus on the electric infrastructure (make ready) investment up to the meter. The charging port and deployment and ownership are best left to independent providers. The charging station or port owner would need a formal utility interconnection review for reliability. According to consulting group Brattle, the infrastructure upgrade to achieve "make readies" result in 60% of installation cost on utilities. Assuming constructive regulation, utilities would benefit from the investment as well as the increase in electric demand. Further policy makers and utility regulators could influence the timing of charging behavior through EV specific rates. Utilities would likely be asked to play a greater role in rural and uneconomic areas.

Exhibit 19 Underlying EV Charger Infrastructure



Source: EEI

According to Brattle, the electric sector required investment to satisfy 20 million vehicles in 2030 would total over $100 billion, allocated as follows:

Table 7 Charging Station Investment Requirements

Type	Cost *	Percent of Total
Generation	$25 billion	25%
Chargers	24 "	24
Customer infrastructure	17 "	17
Storage	15 "	15
Transmission or	11 "	11
Distribution	9 "	9

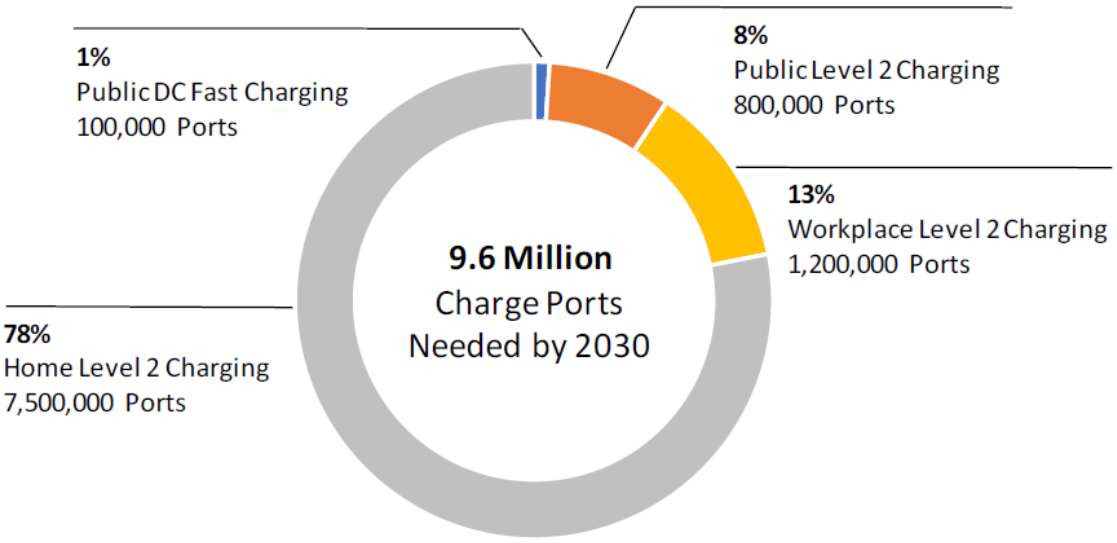
**Source: The Brattle Group*

Obviously, the level of investment is a direct function of the number of vehicles on the road as well as type, cost and number of charging stations placed in service and over what timeframe. According to Brattle, the US has roughly 100,000 charging stations, including 66,000 Level 2 chargers (124 miles of charge in 5 hours) and 12,000 DC fast chargers (124 miles of charge in 30 minutes). To satisfy 20 million EV's, the US needs 1.25 million public chargers (1.2 million Level 2s and 60,000 fast chargers).

To date, the majority of EV charging occurs in users' homes. However, workplaces are increasingly installing charging infrastructure, charging at workplaces or in public settings allows EV owners to drive to the office, charge, and reduce range anxiety, one of the more meaningful barriers for consumer adoption thus far. The Edison Electric Institute, an industry trade association, estimates that about 9.6 million charge ports will be required to support 18.7 million EVs in 2030. The majority of these are expected to be at home Level 2 chargers, representing roughly 78% of the total.

The Brattle Group estimates that power demand could grow 60-95 TWh per year, which represents roughly 1.4% of US annual demand of nearly 3,888 TWhs, and increase US peak load by 10-20 GW's. Platts Analytics forecasts light-duty PEVs alone to add over 40 TWh of load to the US demand by 2030. Assuming 13,500 miles driven per year (FHA) and 20 million BEVs on US roads in 2030, at 4 miles per kWh, the incremental demand load would be equivalent to 1,080 TWh, or roughly 75% of the annual demand by residential retail customers in 2019. This additional demand represents approximately 27% of the 3,955 TWh of electric demand the US had in 2019. Given that ongoing conservation and efficiency efforts will partially offset EV demand growth, we consider the ten-year growth net growth profile to be manageable. Assuming $20-30/kWh, the additional capacity required would require additional spending of $21.6-$32.4 billion, which is consistent with other providers.

Exhibit 20 EV Charging Infrastructure by Location (2030)



Source: EEI

To accelerate deployment and efficiently manage supply/demand, Public Utility Commissions (PUCs) and policy makers would be best served to encourage utility investment and more importantly use rates to influence charging behavior. A scenario where customers only charged at home could create an extremely high early evening peak usage, but would be more manageable if spread through the 8-12 hour night. Sufficiently differentiated time-of-use rates, demand response opportunity, and advanced meters could provide the economic signals to charge at night. An even greater differentiated charging distribution through workplace charging could not only lower the peak usage but also match with peak solar generation times. The ideal scenario would be a "fully optimized" one where PEV could provide additional services to the grid (vehicle-to-grid charging. A PEV could be a large mobile battery system with power flowing back and forth.

On August 28, 2020, the CPUC approved Southern California Edison's (SCE) Charge Ready 2 infrastructure program, with a $436 million budget that will fund ~37,800 electric vehicle charging ports in the utility's service territory, making it the largest single-utility EV charging program in the country. Southern California Edison offers "**TOU-D-PRIME"**. Charge your EV at home when rates are lowest ($0.16/kwh vs peak rates of $0.43/kwh)—between 8 a.m. and 4 p.m.—it's roughly equivalent to a gas-powered driver paying less than $2 for a gallon of gasoline.

On 7/15/2020, the NYPSC approved a $700 million program funded by electric bills to build more than 55,000 chargers.

We expect utilities to benefit from the growing rate base investment as well as the growing electric demand. California utilities, including PCG, EIX and SRE, will be the earliest beneficiaries. However, the benefits are modest and dwarfed by the size of utility rate bases and capital budgets relative to the incremental investment and demand growth.

IMPACT ON FUELING STATIONS

The emergence of electric vehicles and EV charging stations will place pressure on retail fuel stations, which total an estimated 115,000 in the United States. This loss of revenue will be even more prevalent since many users are expected to charge their electric vehicles at home rather than a station, making trips to convenience stores less commonplace. This would negatively impact companies that manufacture equipment for the retail fueling industry such as Vontier Corporation (VNT-NYSE) (fuel dispensers, fuel management, point-of-sale software), Dover Corporation (DOV-NYSE) (fuel dispensers, storage, vapor recovery), and Franklin Electric (FELE-NASDAQ) (underground pumps, pipe, sumps, vapor recovery).

However, we note that despite the tremendous growth rates that BEVs are expected to see, internal combustion engines will still be in the US car parc, and thus require gasoline or diesel fuel. Additionally, these businesses are expected to benefit from global growth in safety and compliance regulations, new infrastructure build-out in emerging economies, and increased sophistication and digitization of convenience and fuel retailing.

- Realities of charging: With battery capacity approaching 100 kilowatt-hours, it is not realistic to assume Level 2 chargers can recover these batteries overnight. It will take longer, especially as demand increases and utility companies implement rate differentials and hours of use for chargers.
- Realities of charging, part two: Stated vehicle ranges from the Energy Information Administration and automakers fail to account for the 80 percent rule. DC fast chargers will take a lithium battery up to only an 80 percent state of charge. That's because of voltage hysteresis, which proves permanently damaging to battery packs if a fast charger is allowed to push higher. Thus, in practice, a vehicle with a stated 300-mile range being fast-charged will have a true range of 240 miles.
- Cost of electricity: SAE's *Automotive Engineering* tested driving a Jaguar I-Pace from western Pennsylvania to Detroit and back. They made the trip, but the cost of electricity at fast charge stations was about $7.20 per gasoline gallon equivalent. This cost will only rise as utilities scrape for cash to fund fast charge infrastructure.
- Queuing: Interstate fuel stations can be crowded during heavy travel periods as things are. Petroleum vehicles need only spend a few minutes at the pump. Has anyone studied the impact of 30-minute-plus charge times on, say, the Pennsylvania Turnpike during a holiday weekend?

Research firm Guidehouse Insights estimates there are 1.1 million battery-electric vehicles on the road in North America and 1.7 million chargers. It says there still will be more chargers than BEVs in North America in 10 years. By this standard, there isn't much for consumers to worry about on the charging front.

Finally, we expect retail fuel stations to become operators of charging systems as well – initially at a smaller scale until pricing models can be better proven so that systems can be profitably run.

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