



EV COMMERCIAL CHARGING STATIONS

A BROKER'S OPPORTUNITY

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EXECUTIVE SUMMARY

States and the federal government are enacting aggressive climate change and green initiative legislation. In combination with this legislative trend the federal government and many local and state agencies are actively electrifying their fleets of vehicles. This shall be a long journey and continue to fuel public opinion on EV purchases.

This legislative trend also includes incentives to purchase consumer and heavy electric vehicles (EV). Currently there are incentives available to municipalities, educational institutes, developers, and property owners to install EV charging stations. A developer can receive up to \$50,000 for the installation of EV charging stations (depending on program and factors).

The average consumer is now considering an EV to the point that experts are forecasting that there will be more EV cars on the road than conventional cars in the not-so-distant future. Investment banking company UBS forecasts an EV share of 20% of the global new car sales in 2025, a 50% share in 2030, and 100% by 2040. The current rate of EV sales has created a real-time shortage of charging stations.

The installation of EV charging has been significantly lagging behind their projected need. A current shortage combined with these forecasts presents a market with business opportunities for the real estate professional.

This paper will explore this market segment and touch upon possible ways to capitalize on the marketplace.



METHODOLOGY

A literature review of state and federal publications, industry white papers, peer reviewed, and current online articles were used to obtain data for this paper.

This strategy allowed for the qualification of industry developed data by using the governmental and peer reviewed data as a reference.



TECHNICAL OVERVIEW

This section will look at the technical basics of EV charging.

EV Charging Networks

There are networked and non-networked charging stations. A networked charging station is connected to the internet. These charging stations are not stand alone and are connected to a larger remotely controlled network. The network allows the station to provide advanced communication capabilities. This communication can be in the form of remote monitoring of the station, fee for charge collection, advertising, and restricting access to name a few.

A non-networked charging station is a standalone unit. Any driver with access can plug in and start charging without the ability to charge a fee.

There are many different types of EV charging networks each slightly different. Which type to pick depends on the charging end user and vehicle class.

EV Charging Levels

There are three levels of EV charging:

Level 1 - is standard to all EVs and uses a common household 120-volt plug outlet. This level is a very slow charge at a rate of 3-5 drive miles for each hour of charge time.

Level 2 - is significantly faster and requires either a 208-volt or 240-volt power source and professional installation. This level will charge at a rate of 13-75 drive miles for each hour of charge time.

Level 3 – Also, referred to as DC Fast Charging. There typically is a need for a significant electrical infrastructure upgrade, minimum of 480-volt power source, with professional design and installation. This level can charge up to 80% of the EV battery in as little as a 10-minute charge.

NOTE: For the remainder of this paper charging levels 2 and 3 will be discussed.

EV Charging Standards

All EVs Level 2 charging stations use the same standard connector / outlet which is the physical plug / receptor that connects to the electric vehicle. There are primarily three different types of DC fast charging connector / outlet standards which vary by manufacturer.

The higher cost for installation and difference in DC fast charging connectors make it less attractive for retrofit installations. DC Fast Charging is good for an active fleet of EVs.



CHARGING STATION PLACEMENT

Workplace

This placement can be at office buildings, industrial parks, or a single firm location. Workplace charging is essential if a company wishes to electrify their fleet and take advantage of available tax incentives and grants. Additionally, having charging stations available to the workers reduces the stress they may have due to a long commute and worry if they have enough charge to return home.

There are other benefits to the company for installing EV charging stations. There is a positive public image publicly demonstrating a company's sustainable and green practices. Presently many top candidates in the job market prefer to work for a company that is environmentally friendly this combined with existing workers of like mind helps with recruitment and reduced turnover.

Multifamily Dwellings (MUD)

Charging stations installed at apartment complexes, condominiums, and other developments with many residents. Attract higher wage earners to tenancy.

By using networked charging stations at multifamily properties Level 2 stations can be set up to allow free access for tenants and a fee for charge to members of the public. However, if MUD property owners wish to off-set the cost of charging they can develop a tenant fee structure. A Level 2 charging station is recommended for an MUD placement due to its universality, cost, and charging speed.

Retail Establishments

With more EVs on the road it is becoming more important for retail establishment to install EV charging stations in their parking lots. There are many benefits to having charging stations in the parking lot. The EV charging network provider EVgo found in a survey that 80% of the users of its charging stations often shop at local retailers while their vehicle is charging with 80% of those respondents saying that the availability of charging stations influenced their decision to shop at a particular location and the customers' average spend per shopping session equaled more than \$1 per minute spent while charging.

Furthermore, charging stations will help to attract a higher income shopper to the area and incrementally increase sales. In addition, charging stations can be outfitted with digital screens for targeted advertisement.

The retail EV charging station placement is ripe with the potential for business deals. With networked stations there are many ways to monetize the experience. The footprint that an EV charging station sits on can be treated like a leased property. Any fees collected can be shared. Let your imagination be your guide.



KEY FINDINGS

Key Findings #1 – Incentives, Rebates, and Grants

An advertisement for Pasadena Water & Power. The background is a dark green with a pattern of white geometric shapes. At the top left, the text "POWER UP PASADENA" is displayed in white, with a white plug icon and a white car icon. Below this, a white box contains the text "Businesses can get up to \$50,000 for installing EV chargers." To the right of the text are two black EV charging stations. At the bottom left, there is a circular seal for the City of Pasadena and the Pasadena Water & Power logo, which includes the text "PASADENA Water & Power" and "SERVING THE COMMUNITY SINCE 1906".

Analysis conducted by the National Renewable Energy Laboratory (NREL) and others confirm that without routine access to charging infrastructure, both at home and in non-residential locations, current market forecasts will most likely fall short.

The federal government and many states are moving towards implementing more regulations to support EVs. The federal government wants to move from 133,000 charging stations in 2020 to 500,000 EV Charging Stations by 2030. This environment will continue to support the push for EV charging station installations.

Utility companies, state governments and the federal government offer incentives, rebates, grants, and low interest loans to assist with EV charging stations. With these incentives, the federal government wants to encourage EV Charging Stations in apartment complexes, public parking lots, workplaces, hospitality, office, and retail areas.

The federal government also provides the Alternative Fuel Vehicle Refueling Property Tax Credit that allows you to offset up to 30% of the cost of installing charging stations up to a maximum of \$30,000.

Currently, 45 states and the District of Columbia provide some sort of incentive for EVs. This is either through tax credits, rebates, or exemptions from emission testing. These programs make it more attractive to install EV Charging Stations in commercial environments.



Key Findings #2 - Solar Power and EV Charging

Commercial properties that have solar installed already understand how this proven technology can improved the net operating income and cap rate. The installation of EV charging stations enhances the property's value by adding amenities. In addition, a charging station can generate revenue as users pay to charge. The facility's electric bill can be significantly reduced by combining the existing commercial solar system with storage into the EV charging station.

Properties that currently don't have commercial solar and with limited roof space can utilize their parking lots to place solar. There are ways mount solar panels above vehicles that protect them from the weather and does not interfere with parking spaces.

There are also companies that specialize in powering EV charging stations 100% with solar energy. The need for charging stations allows a small property the ability to become a solar powered charging station and benefit from its revenue stream.



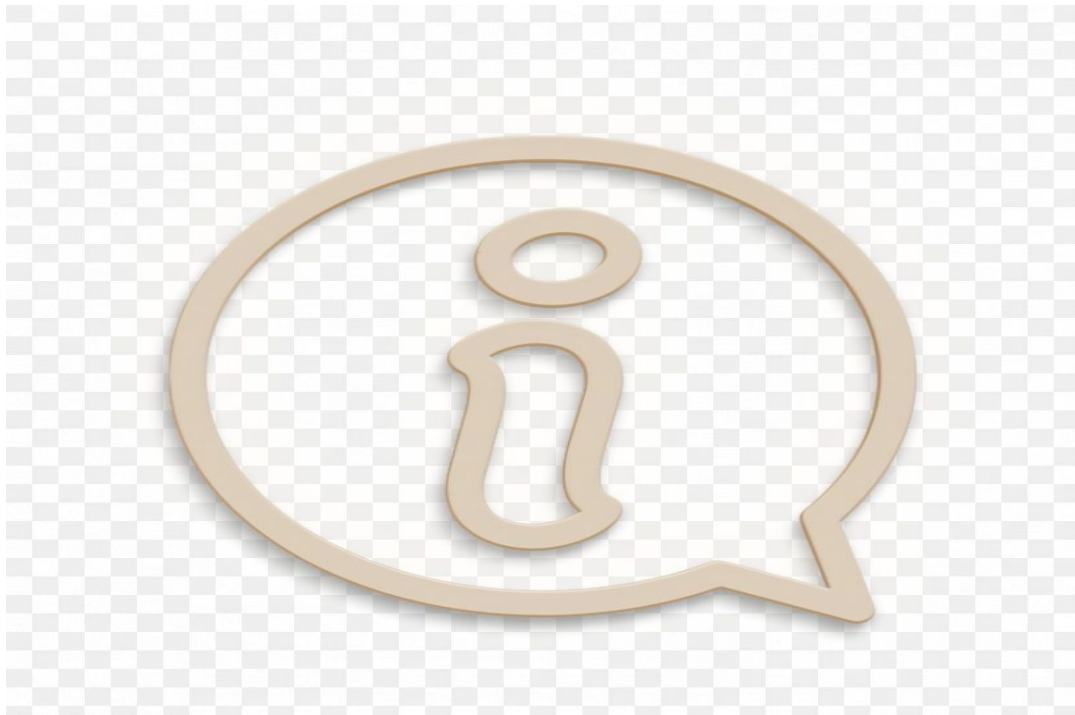
Key Findings #3 – The Real Estate Professional

The accelerated growth of the EV market necessitates that charging stations be installed across the country and in all geographic areas. This will require a concentrated effort on the behalf of property owners to set aside land for this purpose. By working together with local property owners and associations the real estate professional can help plan to meet the infrastructure needs for their region.

Current and proposed incentives and legislation indicate that EV charging station placement is targeted for multifamily complexes, retail, hospitality, workplace, healthcare, government spaces, and office space locations.

Charging stations can generate revenue for the property owner and others. Consumers tend to develop shopping habits and loyalties. This will be an added benefit to those property owners that early on install charging stations.

Given the current incentive and grant environment a developer can significantly reduce cost and maximize incentive funding value of charging station installation during the development phase. The infrastructure upgrades required after project completion will considerably increase costs and reduce the incentive value.



MISCELLANEOUS INFORMATION AND NUMBERS

Talking Points and Thoughts

Bernard Looney CEO of BP said on a conference call that EV charging stations turn out, to be about as profitable as conventional gas stations. He also stated that he is planning to increase their EV charging stations nationally to 100,000.

The Atlas report has stated that, Hosting EV charging stations can signal a retailer's commitment to advancing sustainability goals while helping to reduce transportation greenhouse gas emissions.

By utilizing the charging stations as an advertising portal will increase its revenue stream for the unit owner.

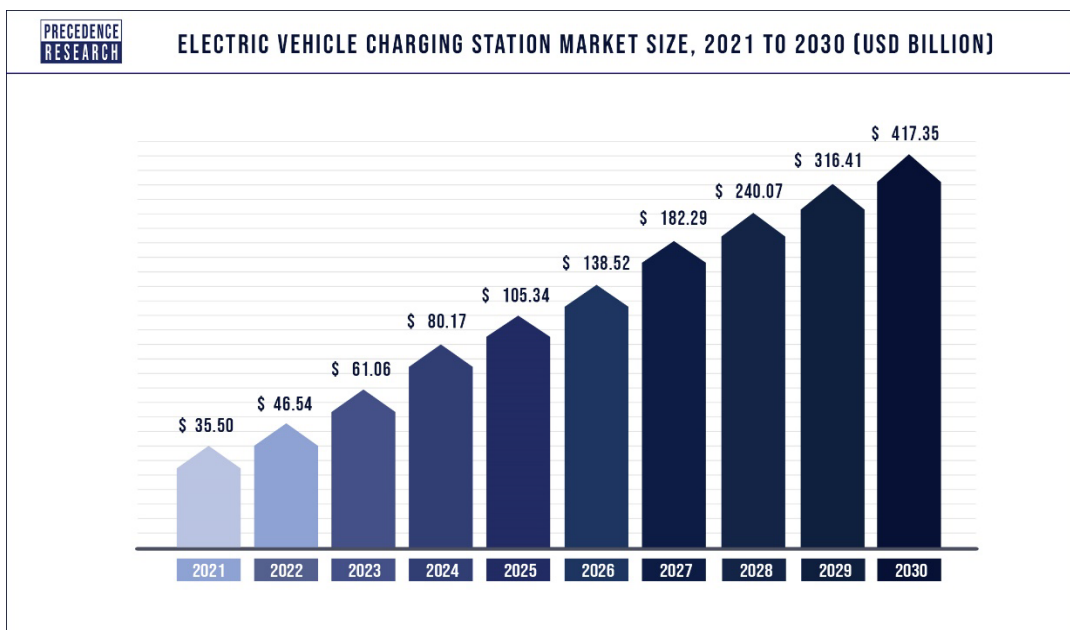
Many drivers either forget to connect to their home EV charger or do not have the capability to do so. Furthermore, due to the slow charge rate of a Level 1 home charger they cannot always effectively charge their EV at home.

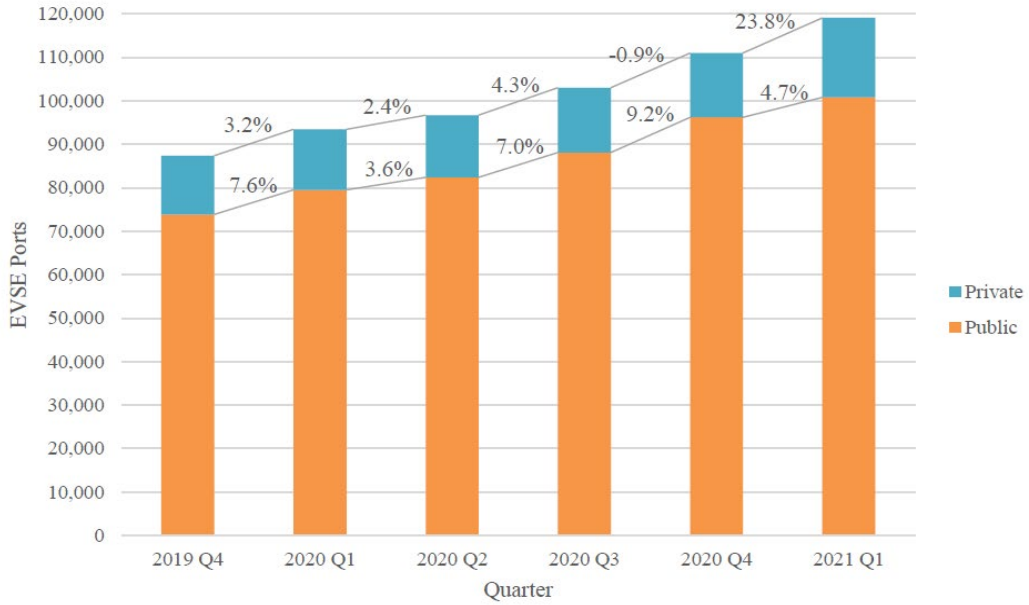
According to a survey conducted in 2020 by E Source, a data science firm, most respondent that are EV owners who already have a Level 2 aftermarket charger at home and are paying approximately 75 cents per hour in utilities costs are willing to pay up to \$3 per hour for public charging solutions.

Most online driving direction apps including Google Maps have interactive features that will locate near-by EV charging stations. By placing public access EV charging on your website, the online app can find it during the search. This feature increases public visibility when the driver gets the search results.

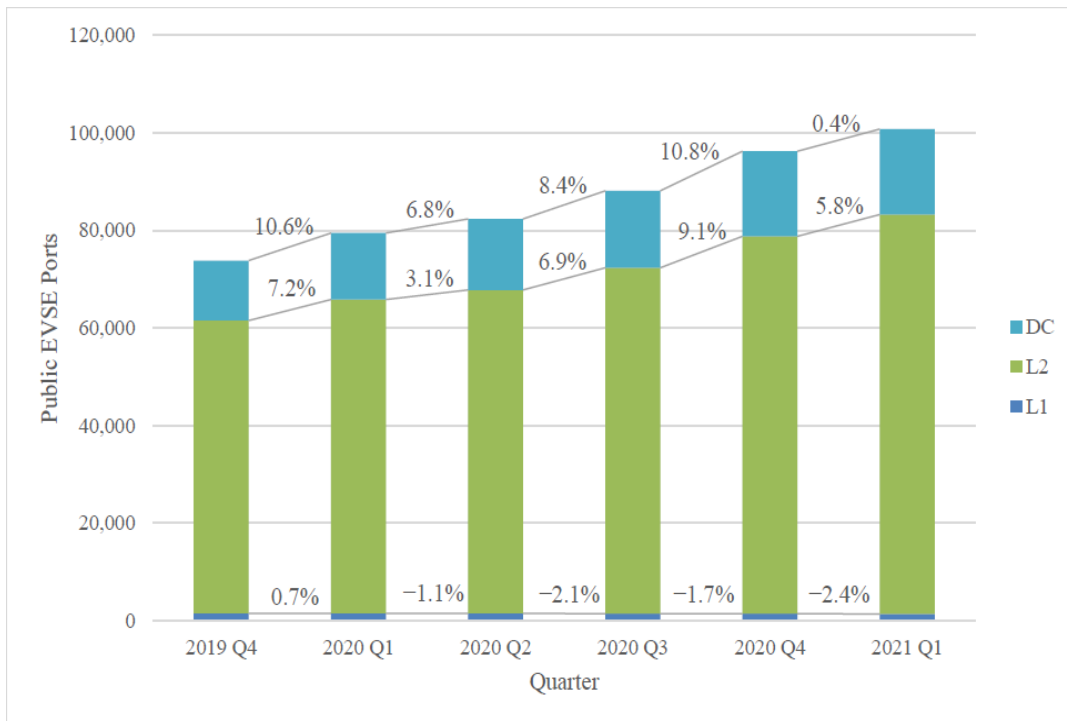


Visual Data

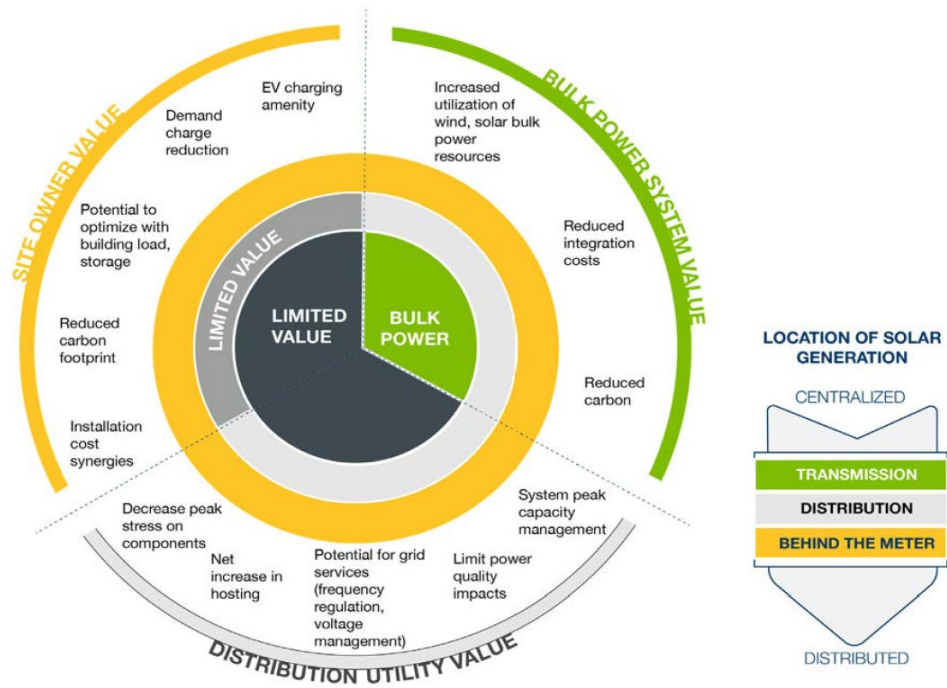




NREL Survey – Quarterly Growth of EV Station Ports by Access

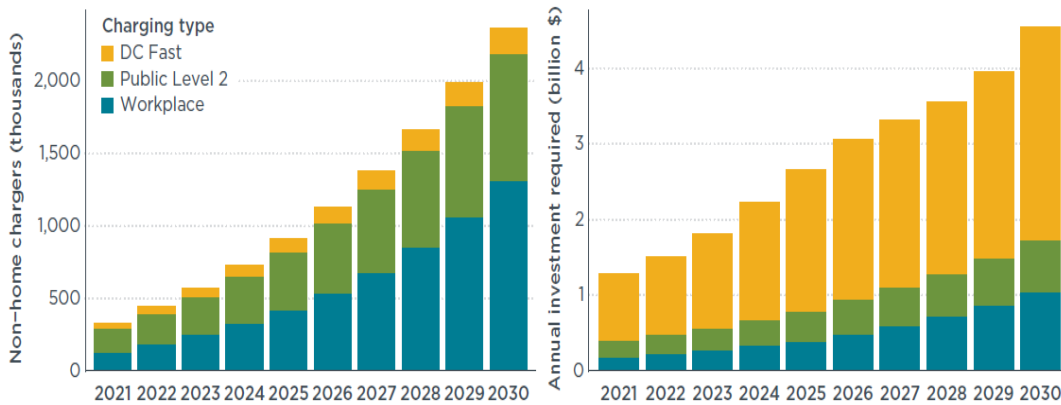


NREL Survey – Quarterly Growth of Public EV Station Ports by Level



Value Stream for Synchronizing Solar Production with EV Charging

<https://rmi.org/wp-content/uploads/2017/03/RMI-TheEconomicsOfBatteryEnergyStorage-FullReport-FINAL.pdf>



International Council on Clean Transportation

Projection for EV Charging Infrastructure

Funding Required to Meet Projection



CONCLUSION

Electric vehicles are no longer a science fiction movie plot. They are here to stay and are steadily increasing the demand for a charging infrastructure. It is this demand that presents the commercial real estate professional with great opportunities.

The real estate professional can be instrumental in guiding the public and private sectors on trends and projections. As an integral part of any commercial realtor's practice, we study the markets and perform both market and financial analysis for our clients. These same skills make for a natural fit for our profession to take a leading role into the EV charging station marketplace.

Given current climate change initiatives to reduce GHG emissions the market will be protected and stabilized against outside forces through government programs. Even if the projections fall short the sheer volume of need still presents for a strong marketplace.

NOTE: Keller Williams Government Services Team (www.kwgovernment.com) specializes in assisting local, state, and federal government agencies in monetizing underutilized and distressed assets. We co-broker nationally with all market centers. Contact Stuart Kirshner: stuartkirshner@kw.com for assistance with your public sector clients.

REFERENCES

Ads tec Energy

Argonne National Laboratory - U. S. DOE

Clean Energy Coalition - U. S. DOE

Great Plains Institute

International Council on Clean Transportation

NHS - U. S. DOT

NREL - U. S. DOE

RCLCO - Real Estate Advisors