



Charging Forward

**BUILDING EV STATIONS TODAY
FOR TOMORROW'S DRIVERS**

sevan
MULTI-SITE SOLUTIONS



Introduction	3
Types of EV Chargers	4
Choosing Your Strategy	5
Rapid Dwell Times	6
Quick Dwell Times	7
Moderate Dwell Times	8
Extended Dwell Times	9
Cost Considerations	10
Conclusion	11
Sevan Can Help	12
Bibliography	13

Electric vehicles (EVs) are becoming more popular around the world.

The number of available EV models grows every year, total range is increasing while charge times are decreasing and most importantly, prices are becoming more affordable. According to Inside EVs, one of the leading online sources for comprehensive information on electric vehicles, the U.S. market share for EVs in the first half of 2021 was 2.5%, meaning 1 in every 40 newly registered vehicles on the road was an EV¹. That number is expected to rise rapidly in the U.S. over the next decade with President Joe Biden pushing for half of vehicles on the road to be EVs by 2030. By 2040, it is estimated nearly every vehicle on the road will be an EV.

Even though 2030 is still several years away, creating the infrastructure to support the shift from gas powered vehicles to EVs is happening right now. EV charging presents the unique opportunity to provide an important service almost anywhere that can support a charging station. This allows retailers the chance to earn additional revenue by offering their customers charging stations to use while on site.

There are several steps that must be taken before a business should install charging stations:

1

Consider the different types of EV chargers available for you to utilize

2

Choose an EV charging strategy that matches how customers spend time at your sites

3

Determine the costs and regulatory factors to install EV chargers at your sites

Types of EV Chargers

Before you install EV chargers, you should know what types of chargers are available. For public charging, Level 2 (L2) chargers and Direct Current Fast Chargers (DCFC) are the most viable options.



L2 chargers are the standard charger level used at public charging stations in the U.S. According to FreeWire Technologies, L2 chargers provide 3 kW to 19 kW of AC power, which roughly translates to 18-28 miles of range per hour². The standard EV has around 250 miles of range³, so getting a full charge on an L2 charger takes about 8-10 hours.



DCFCs are faster than L2 chargers. FreeWire explains that DCFC chargers provide the fastest charging with a maximum output of 350 kW. This means a DCFC charger can fill an EV battery to 80% in 20-40 minutes and can provide a full charge in 60-90 minutes². Many DCFC chargers at public charging stations operate around 50 kW, which is still considerably faster than L2 chargers.

Choosing Your Strategy

Now that you understand what types of chargers are available, you need an EV strategy for your business. Depending on the type of business you own, you can use chargers to increase dwell time, earn charging revenue or do both.

The biggest factor in determining your ideal strategy comes down to how much time your customers spend at your sites. **Most businesses can be divided into four categories of average customer dwell time: less than 10 minutes, 15-30 minutes, 1-2 hours and 4+ hours.**

The way customers are charged also depends on your site dwell time. Shorter dwell times (less than 1 hour) work best using a “per minute” pricing structure while longer dwell times (1 or more hours) work best using an “energy consumption” pricing structure. Note, some states may restrict what type of pricing model you can use for EV charging. It is important to check all state regulations on EV charging before installing chargers at your sites.

The following projections assume all customers will get the full charging benefit presented in each example and only focus on charging revenue. These projections do not explore additional revenue opportunities such as advertising, geo fencing, hybrid pricing models, subscription pricing models and rental agreements.



10
minutes
or less

Rapid Dwell Times

Convenience stores are a prime example of businesses with extremely short customer dwell times. Those customers will want to get as much as possible from their trip, so it makes sense to provide them DCFC stations. However, the rapid dwell time means they won't get the full benefit of DCFC.

The goal here should be focusing on increasing dwell time by offering free EV charging up to a certain time. The below table shows how much more revenue per transaction you could make by offering EV customers 5 minutes of free charging compared to non-EV owners.

	Non-EV Owner	EV Owner
Average time in store (in minutes) ⁴	3:33	5:00
Average per minute spend in store ⁵	\$2.54	\$2.54
Gross revenue	\$9.02	\$12.70
DCFC utility cost (per kWh)	\$0	\$.10
Total DCFC cost per session (50 kWh charge rate)	\$0	\$.42
Projected net revenue	\$9.02	\$12.28

Statista.com reported that in 2019, the average number of weekly in-store transactions for convenience stores was 2800 per week⁶. If EV owners currently make up 5% of all those transactions, 140 transactions per week would come from EV customers. The \$3.26 increase in revenue per transaction compared to non-EV owners over the course of a year translates to an additional \$23,732.80 in revenue per year.

<10 minutes

15-30
minutes



Quick Dwell Times

For businesses whose customer dwell times are around 15-30 minutes, it also makes sense to install DCFC charging stations. Since customers are on-site longer, it would be reasonable to charge customers for the convenience of getting a 40-80% charge.

Fast casual restaurants benefit from having quick turnaround times inside their building. According to franchisehelp.com, the average check in 2020 for fast casual restaurants was \$12⁷. At a fast casual restaurant, 12 minutes might be a good average to turnaround a table. EV owners may occupy a table longer to get more of a charge for their vehicle. If tables aren't being turned around quickly, owners may think they are losing money, but in reality, it is possible to bring in more revenue per table with less EV owners than having more non-EV owners per table.

	Non-EV Owner	EV Owner
Dwell time per table (in minutes)	12	20
Customers per hour	5	3
Average check amount	\$12	\$12
Average DCFC price (per minute)	\$0	\$.54
Average DCFC revenue (per hour)	\$0	\$32.40
Projected revenue per hour	\$60	\$68.40

Assuming a fast-casual restaurant averages 500 dine-in customers per day, and 5% of those customers are EV owners, the average daily revenue could increase by \$210, which over the course of a year is an additional \$76,650 in revenue.

15-30 minutes



1-2
hours

Moderate Dwell Times

When it comes to businesses whose customer base has a dwell time of 1 - 2 hours, a combination of L2 and DCFC chargers could be a good approach for generating EV charging revenue. Since customers are there longer, you could be charging them the entire time they are at your site. A health club or fitness facility is a prime example of a business whose members can benefit from both L2 and DCFCs.

If you have 300 parking spots available and 5% of your customer base owns an EV, you should have 15 parking spots dedicated to EV charging. If 25% of your members spend ≤ 1 hour at the gym and the other 75% spend over an hour at the gym, you should have a similar split between DCFCs and L2 chargers, which would equate to 4 DCFCs and 11 L2 chargers. If 1,000 customers visit your location every day, then around 12 people would use the DCFC chargers and 38 would use the L2 chargers. With these considerations in mind, the below table projects additional revenue you could earn.

	DCFC Revenue	L2 Revenue
Number of daily users	12	38
Average time spent on site (in hours)	1	1.5
Charging rate	50 kWh	10 kWh
Price per kWh ²	\$.35	\$.25
Projected daily revenue	\$210	\$142.50
Projected yearly revenue	\$76,650.00	\$52,012.50

1-2 hours



4
hours or
more

Extended Dwell Times

The last EV charging strategy is for businesses whose customer dwell time exceeds four hours. Stadiums, convention centers, hotels and housing complexes are all business types whose customers spend a significant amount of time on site. L2 charging is the most practical for these businesses since they will be on site for over 4 hours and don't need fast chargers for their vehicles. The below table shows revenue projections for an apartment/condo complex that has 1,000 residents.

	EV Revenue
Total number of residents	1,000
Percentage of residents who own EVs	5%
Total number of EV residents	50
# of times each resident charges per week	1
Average EV battery pack size	70 kWh
L2 Charge rate	10 kWh
Price per kWh ²	\$.25
Projected weekly revenue	\$875
Projected yearly revenue	\$45,500

4+ hours



Cost Considerations

Now that you have an idea on what kind of revenue you can earn from EV charging based on your business type, you need to understand what it costs to install and maintain EV chargers at your sites.

The various costs associated with installing EV chargers are broken down in the following table from the Alternative Fuels Data Center:⁸

	L2	DCFC
Chargers (per charger)	\$400 – \$6,500	\$10,000 – \$40,000
Installation	\$600 – \$12,700	\$4,000 – \$51,000
Utility rates	\$.08 – \$.15 per kWh	\$.08 – \$.15 per kWh
Network fees	\$100 – \$900	\$100 – \$900
Permitting	\$14 – \$821	\$1,000 – \$3,000
Maintenance (per machine per year)	\$400	\$400

While the initial costs can vary wildly, there are programs in place to help mitigate your expenses. Depending on what state(s) your business operates in, there may be tax credit and rebate opportunities available for installing EV chargers.

To check and see if your state is offering any tax breaks, refer to afdc.energy.gov/laws. Your EV charger provider might also offer incentives depending on whether you buy or rent and the type and number of chargers you install.



Conclusion

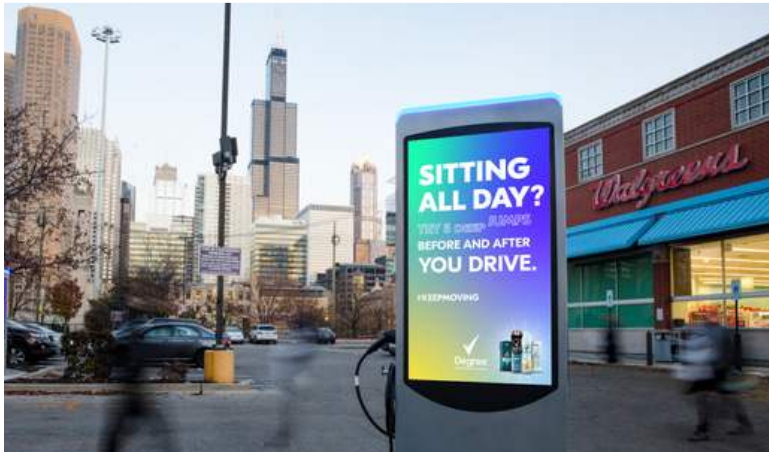
No matter what type of business you own, there are opportunities to earn additional revenue by installing EV charging stations at your sites.

If 2.5% of vehicles on the road right now are EVs and it is expected 50% of all vehicles on the road will be EVs by 2030, the number of EV drivers should go up 5.3% every year. EVs are the future of transportation and setting up the infrastructure to support EV charging now will help put you in a better place to support EV owners and your business in the future.

Sevan Can Help

Sevan is helping big companies like Walgreens install EV charging stations at their sites across the country. We partner with our clients to understand their unique needs and utilize our comprehensive suite of solutions to complete their projects on time and on budget.

Walgreens, Volta and Sevan Team Up to Provide EV Charging Stations



CHALLENGE

Walgreens and Volta teamed up to provide EV Charging stations at 49 Walgreens locations in the Pacific Northwest. Neither Walgreens nor Volta had sufficient program management capacity to deliver the initiative successfully.

SOLUTION

Sevan provided Project Management for the launch of the EV Charging Station Pilot program on Walgreens' behalf, managing the relationship with Volta to ensure the terms of the agreement were met and the project was completed within Walgreens brand design and engineering standards.

RESULTS

Sevan's expertise in project management and integrated relationship with Walgreens provided the groundwork for Sevan to successfully manage the development and installation of the EV charging station pilot programs without disrupting business traffic or the customer experience. A total of 91 EV Charging stations were installed across 49 stores in a 5-month timeframe. To date, the stations have delivered 118,000 free miles to Walgreens customers and carbon emissions have been reduced by over 52,000 pounds.



If you are looking for more guidance or if you would like to discuss EV charging solutions for your sites, please contact Sevan at www.sevansolutions.com.

Bibliography

- ¹Kane, Mark. "US: All-Electric Car Market Share Expands To 2.5% In H1 2021." InsideEVs, 14 Aug. 2021, <https://insideevs.com/news/526699/us-electric-car-registrations-2021h1/>.
- ²What's the Difference Between EV Charging Levels? - FreeWire Technologies." FreeWire Technologies, 1 July 2020, <https://freewiretech.com/difference-between-ev-charging-levels/>.
- ³"FOTW# 1167, January 4, 2021: Median Driving Range of All-Electric Vehicles Tops 250 Miles for Model Year 2020 | Department of Energy." Energy.Gov, 4 Jan. 2021 <https://www.energy.gov/eere/vehicles/articles/fotw-1167-january-4-2021-median-driving-range-all-electric-vehicles-tops-250>.
- ⁴"Time To Shop Consumer Insights on How Convenience Stores Deliver Quick Shopping Experiences. ." Convenience.Org, Nov. 2018. <https://www.convenience.org/getattachment/Research/Consumer-Insights/Time-to-Shop/White-Paper.pdf>.
- ⁵"Convenience Store Transaction Value, by Type U.S. | Statista." Statista, 2020, Directory. <https://www.statista.com/statistics/1016017/convenience-store-transaction-value-by-format-us/>.
- ⁶"Number of Weekly Convenience Store Transactions U.S. | Statista." Statista, 2021, <https://www.statista.com/statistics/308818/number-of-us-c-store-transactions-per-week/>.
- ⁷Center, Franchisee Resource. "Fast Casual Industry Analysis 2020 - Cost & Trends." Franchisee Resource Center, 2021 <https://www.franchisehelp.com/industry-reports/fast-casual-industry-analysis-2020-cost-trends/>.
- ⁸"Costs Associated With Non-Residential Electric Vehicle Supply Equipment Factors to Consider in the Implementation of Electric Vehicle Charging Stations." U.S. Department of Energy, Nov. 2015, <https://www.afdc.energy.gov>.

