
ELECTRIC CAR CHARGING FOR YOUR BUSINESS OR COMMUNITY

BY STEVE WEHR FOR SUSTAINABLE HUDSON VALLEY



Dear business and community leaders,

With the electric vehicle market growing fast and New York's commitment making it nearly free to install EV chargers, Sustainable Hudson Valley has prepared this guide especially for you. Please contact us for additional support.

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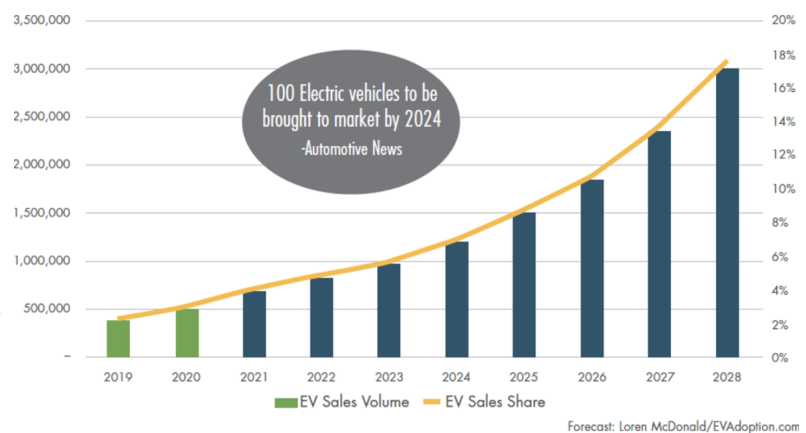
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Electric Vehicles: Here Today and More On the Way

The electric vehicle marketplace is growing fast. Over a dozen models are driving the roads today, and there will be 40 by the end of 2021. EV sales are expected to continue to grow exponentially. Most forecasts agree that we will see widespread EV adoption by the late 2020s. The adoption of EVs is

expected to be even greater in New York State, with its EV-friendly policies and the generous funding programs MakeReady and ChargeReady NY, which make public charging nearly free to install in many cases. As of December 2020, there are 60,000 electric vehicles (battery and plug-in varieties) on the roads in NY state, and 11,000 of them in the Hudson Valley region.

US Electric Vehicles Sales Forecast: 2019-2028



Graphic provided by Blink Charging

EV Charging: Win/Win for Drivers and Main Street

Like a cell phone, an EV can be charged anywhere there is electricity. But charging at ordinary outlets is slow. Most EV owners want to combine home charging with access to faster public outlets. With incentives from New York State, tax credits, and more affordable technologies, the cost of installing public chargers for EVs is low to zero. With this trend and the low cost of electricity to charge, savvy municipalities and business owners already offer EV charging to attract and serve EV owners. There are good reasons to do so right now.

A [2020 survey of EV drivers from CleanTechnica](#) concludes “Most respondents would be willing to try a new grocery store (77%) or shopping center (66%) if EV charging was provided for free. Most respondents (50%) said they would spend more time shopping.”

A [study from Morgan State University](#) shows that EV owners today are predominantly male, married, in their 50’s and 60’s, have a bachelor’s degree or higher, and have a household income over \$100,000. Most bought their EV due to environmental concerns and the desire to reduce dependence on petroleum.

Why EV charging can benefit your business and community

1

It demonstrates your commitment to sustainability goals, resulting in pride and loyalty. For example, 95 percent of business travelers say hotels should be investing in “green initiatives.” A charger shows that commitment, even to drivers who don’t have an EV yet.

2

Create a destination for people to shop, linger and return - especially the affluent, socially-aware people who favor EVs.

3

Keep people around and build word-of-mouth support. EV drivers spend up to 50 minutes longer shopping than non-EV counterparts, according to a ChargePoint study -- especially if it’s free. And they tell their friends.

4

Competitive differentiation, advantage, and visibility. Set your business and community apart by showing commitment to EVs, and reap business rewards such as visibility in charger app maps. At the same time, you’re advancing public benefits like encouraging EV adoption and reducing air pollution.

5

Be ready for the future. Within a decade, EV charging will be considered an “essential amenity” like wifi.

"We had a great experience, the charging station brings in customers that wouldn't stop otherwise."

--Smokey Rock BBQ, Rhinebeck, NY.

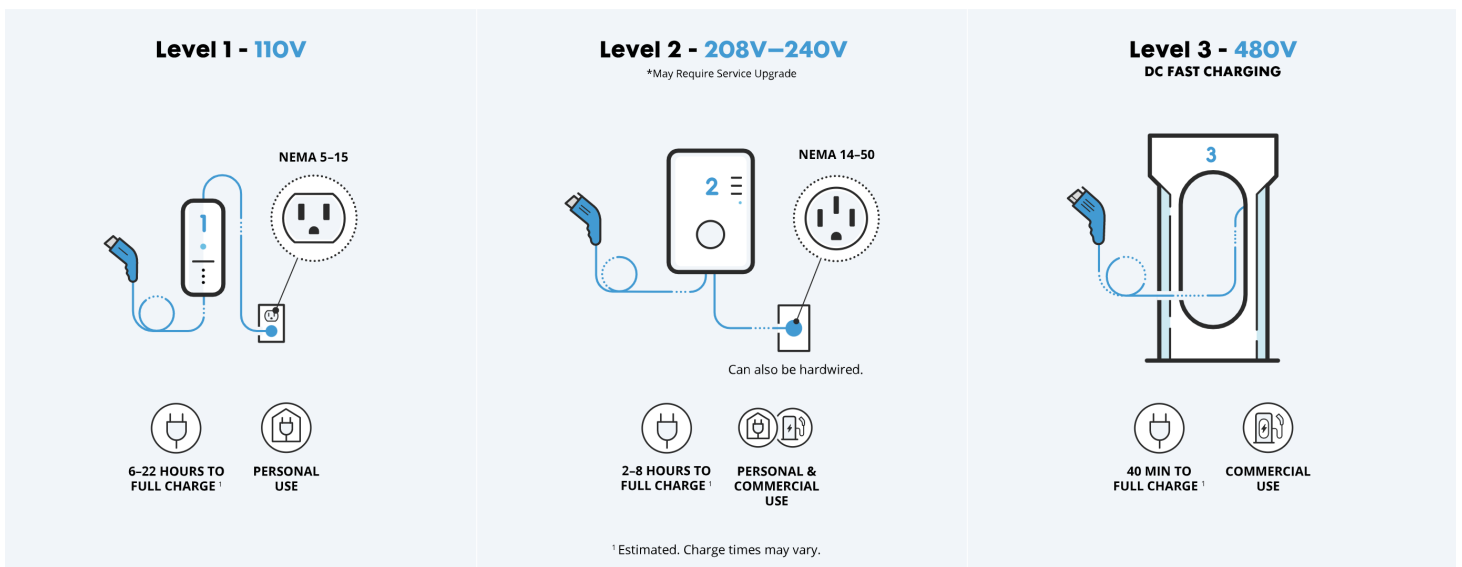
What kind of EV chargers should you install?

The type of charger needed depends on your location and expected customer needs.

Destination charging (“Level 2”) can take several hours for a full charge, while travel or fast chargers (“Level 3”) can charge a vehicle in less than an hour, often less than 30 minutes.

“Destination” chargers are the best choice for most businesses and towns that want to provide affordable public charging. As the name implies, this type of charging is used when drivers stop for an hour or more, at a destination such as a municipal parking lot, restaurant, shopping area, resort, museum, library, night club, school, apartment complex, B&B, AirBnB, hotel, or supermarket.

The cost of Level 3, or super-chargers is much greater than Level 2, typically \$75,000 to \$100,000 installed cost per charger. Level 3 chargers make the most sense at high-traffic locations where drivers are moving through rapidly, such as near major highways, larger town centers or major workplaces. Because they can draw customers from a wider region, Level 3 chargers may be a worthwhile investment for some downtowns, businesses and workplaces with high traffic flow.



Differences between 3 levels of EV Charging. Graphic provided by Con Edison

Many companies make Level 2 EV chargers. The chargers themselves range in price from \$450 to \$5000. Some are connected to a network and some are not. Tesla destination chargers continue to be free if you apply for the [Tesla destination charging partners program](#). For other types:

- If you don't want to charge customers for the cost of electricity, then you can install simpler and cheaper chargers that are not attached to a network, and have no ongoing costs (other than electricity). These chargers are made by Bosch, Clipper Creek, JuiceBox, Siemens, Tesla, and others. Cost is typically \$500-\$695.
- If you want to have the option to charge customers to use your chargers, then you will need to go with a more expensive networked charger that uses a cellular connection to take the customer's payment. These chargers may have ongoing software costs. They are made by Blink, ChargePoint, EVConnect, Webasto and others. Cost is from \$2000-\$5000.

Know your Chargers

Brand	Model 30- 40A	Networked?	Other information
Blink	IQ 200	Yes	Very fast charge rate and smart grid savings
Bosch	EV600 Series	No	3 year warrenty included
ChargePoint	CT 4000	Yes	Control who can access your charger
Clipper Creek	HCS-50	No	Share2 Circuit Sharing*
EVConnect	BTC	Yes	App is available to easily locate other stations
JuiceBox	JuiceBox 40	No	Includes Voice control, and smart grid savings
Siemens	VC30GRYU	No	User friendly, easy set up with mount included
Tesla	Gen 3	Yes	Tesla also provides a wireless option
Webasto	TurboDX	Yes	Portable

*Connect two HCS-50 charging stations on the same 50 Amp circuit and they will share power when two cars are plugged in.

What kind of installation do you need?

Installing the electrical service for the charger isn't complicated, although the associated cost is often the biggest installation expense. It will require at least a 40 amp circuit breaker, and electrical power will have to be run to wherever the charger is installed. The connection might be on the side of your building, or it might be yards away in a parking lot. This work must be done by a licensed electrician. It can range in price according to complexity and site specifics. For example: A simple installation, close to your building, may only need a new breaker and connection to the charger (ballpark cost: \$500). A more complex installation may involve these elements plus running underground conduit to the charger location (ballpark cost: \$3000). Trenching, if needed, is by far the greatest cost varies widely according to distance and conditions.

Once the electrical service has been run to where the charger will be installed, there may be site work required, such as:

- A concrete slab to mount the charger.
- Bollards to prevent it being hit by cars as they park.
- Signs.

When the charger is ready to use, you will want to call attention to it with signage and make sure it is listed on apps like PlugShare and Google.

What does the electricity cost?

To fill most EVs from empty to full charge costs anywhere from \$12 to \$16. A driver using your EV charger for a half hour will use about \$0.60 of electricity. If we assume that 3 customers per day charge their cars at your location, and that it is open 30 days per month, then your monthly electricity cost would be about \$52.



Programs to help you pay for a charger

For businesses installing Level 2 chargers, New York State offers two complementary programs: [Charge Ready NY](#), a program of the New York State Energy Research and Development Authority (NYSERDA), offers a \$4000 per plug rebate for public charging stations. For the typical 2 plug station, that would be an \$8000 rebate. There is a federal tax credit that can pay for 30% of the cost of a charger and installation, up to \$1000. [See IRS form 8911](#). New York State also provides an income tax credit that covers 50% (up to \$5000) of the purchase and installation of an electric vehicle charging station. Even for Level 3 systems, there are NYS programs to defray the costs, such as the "[EV Make Ready Program](#)" (applicable to both levels 2 and 3), and the "[DCFC Per-Plug Incentive Program](#)." These programs can actually lower this cost by 75% -- and more if the site serves low income users. Municipalities can also apply for a [new grant from the NY state DEC](#) that can pay for the entire cost of installing Level 2 or Level 3 chargers. This grant covers site prep, installation, EV charging equipment, and electricity costs.

Ownership Models for Chargers

Several arrangements are possible for owning and managing chargers:

- Charging company ownership - the company that makes the chargers owns and operates the charger, often leasing the land where it is sited.
- Shared ownership - a partnership between you and the charging company.
- Purchase of the unit by your business or government utilizing state and utility funding programs.

Case Study - Average Business

Installation assumes:

- Single plug commercial/residential charger
- 50 amp circuit breaker
- 20 ft of trenching from building to charger. Trenching is by far the largest installation cost.
- Concrete pad or mounting post for charger

Average Costs- Level 2 Charger

Materials and Labor	\$2,250
Charging Station	\$600
Total Installation Cost	\$2,850
Federal tax credit 30%	-\$855
NYS Tax credit 50%	-\$1425
Net Installation Cost	-\$570
Electricity for 1 year	\$624

- Higher installation cost locations can use the Make Ready program, which covers 50% to 90% of such costs.

If you happen to own a desirable location near a major travel route and have enough parking space, a charger company may approach you to install Travel (Level3) chargers in your lot at little or no cost to you. Many charging providers have already done this – Tesla, Electrify America, ChargePoint, etc. For example:

- Tesla has about 1000 charging stations in the United States, most of them in the parking lots of private businesses. Tesla charging stations typically have 8 chargers, serving up 8 parking spaces.
- Electrify America is installing chargers at Walmarts. EA typically installs 4 chargers serving 4 parking spaces.
- New York State is installing chargers at various business locations along major highways. These are typically 4 chargers serving 4 parking spaces.

These chargers bring EV drivers to your location at no cost to you. If you think your business, commercial district, or downtown would be a good candidate for such a charger, you can contact the charging companies and suggest your site to them. With today’s incentive programs, towns like Saugerties can save even more.

Case Study – Town of Saugerties

The town of Saugerties installed 5 ChargePoint destination (Level 2) chargers between 2017 and 2020. These are the average costs for those chargers. This installation included:

- Double plug commercial charger from ChargePoint.
- 2 x 40 amp circuit breakers, one for each plug. Trenching from building to charger.
- Concrete pad or mounting post for charger
- Protective bollards and signs.

Average Costs- Level 2 Charger

Materials	\$1,033
Labor (Town employees)	\$1,676
Charging station	\$6,473
4 yr ChargePoint software	\$1,820
4 year ChargePoint warranty	\$2,214
Total Installation Cost	\$13,216
Charge Ready NY Grant	-\$8,000
Net Installation Cost	\$5,216
Electricity for 1 year	\$1,300

EVs are Coming. Be Ready to Welcome Them.

If these low costs and high benefits make EV charging attractive to your business or community, the next steps are straightforward.

1. Conduct an inventory of possible charger locations, favoring those that are closest to power sources.
2. Contact your local utility to understand any financial incentives they offer.
3. Delve into the offerings of the various charger hardware companies mentioned above, and if you're a government, issue a Request for Proposals.

EV sales will be growing at an exponential rate in the US and Hudson Valley in the coming decade. EV owners are affluent and environmentally aware. They prefer locations that offer charging, and will shop longer and spend more at those locations. They prefer to live, work and vote in communities that support sustainability goals. Costs to install an EV charger vary widely, but NY State incentives can cover much of that cost. Electricity costs are moderate, especially in light of the many benefits in attracting traffic for businesses and pride in the community overall. Many businesses and towns in the Hudson Valley region have already installed charging and are realizing these advantages.

Join us!

EV Charger Inventory in the Hudson Valley

Who else in the Hudson Valley has already installed EV chargers? Here are some local hotels with destination chargers. Since 2016, almost every new hotel built in the Hudson Valley has included EV chargers in their parking lots.

- Holiday Inn Express & Suites, Saugerties.
- Hampton Inn, Kingston.
- Residence Inn by Marriott, Kingston.
- Courtyard by Marriott, Kingston.
- Hampton Inn, New Paltz
- Home2 Suites, Middletown
- Crowne Plaza, Suffern
- Best Western Plus, Poughkeepsie
- Residence Inn by Marriott, Poughkeepsie
- Hyatt Place, Poughkeepsie
- The Rose Motel, Durham
- Winwood Inn, Windham

Other local businesses with destination chargers:

- A Tiny House Resort, Cairo
- Bank of Millbrook, Pine Plains.
- Bard college, Red Hook.
- Basilica, Hudson
- Bear Mountain Inn and Overlook Lodge, Tompkins Cove.
- Bogarts Auto, Poughquag
- Borland House B&B, Montgomery.
- Buttermill Falls Inn and Spa, Milton.
- Catamount ski Area, Hillsdale
- Cortlandt Crossing Shopping Center, Mohegan Lake.
- Crossroads Plaza, Yorktown Heights.
- Hawthone Valley Waldorf School
- Hopewell Animal Hospital, Hopewell Junction
- Hyde Park Animal Hospital, Staatsburg
- Kohls, Hudson
- Mohonk Mountain House
- Montgomery Place, Red Hook.
- Oakwood commons, Poughkeepsie
- Omega Institute, Rhinebeck.
- Price Chopper, Warwick.
- Price Shopper, Glenmont
- Reidbauer's Resort, Round Top
- Silvanus Lodge, Hillsdale
- Smokey Rock BBQ, Rhinebeck
- Storm King Tavern and Golf Club, Cornwall.
- Taste NY Market, Lagrangeville
- The Garrison and Highlands Country Club, Garrison.
- The Wick Hotel, Hudson
- Thomas Cole Historic Site, Catskill
- Town center dental, Lagrangeville
- Troutbeck, Amenia.
- Tuthilltown Spirits, Gardiner.
- Van Kleek's Tire, Kingston
- Vassar College
- Windham Mountain, Windham
- Woodbury Common Premium Outlets, Central Valley.

Almost every car dealership. Almost every train station. Many municipal and private parking lots. This list does not include dozens of chargers in the Albany area, or the lower Westchester area. This list does not include chargers for employees installed in company lots, which several employers in the Hudson Valley have done.

Municipalities that have installed chargers:

- City of Kingston
- SUNY New Paltz
- SUNY Ulster
- Town of Bedford Hills
- Town of Chatham
- Town of Germantown
- Town of Hillsdale
- Town of Livingston
- Town of Lloyd
- Town of Marbletown
- Town of New Paltz
- Town of Ossining
- Town of Peekskill
- Town of Rhinebeck
- Town of Saugerties
- Town of Wallkill
- Ulster County offices
- Village of Croton on Hudson
- Village of Kinderhook
- Town of Rosendale
- Village of Valatie

Resources

NYSERDA — [ChargeNY](#) EV rebates through participating dealerships.

- [Charge Ready NY](#) offers a \$4000 per plug rebate for public charging stations.

New York Power Authority — Fast charging infrastructure, electrified transit [and more](#).

Clean Cities Programs — part of national Department of Energy supported partnership to support EVs and other clean transportation solutions

- [Empire Clean Cities](#) serving New York City, Westchester, Rockland and Putnam Counties
- [Capital Region Clean Cities](#) serving Columbia, Greene, and Albany counties plus others farther north.

[CalStart](#) helps major cities, industry and other stakeholders design programs to scale up electric transportation including trucks, buses and specialty vehicles

Sustainable Westchester's [Clean Transportation Program](#) is leading in bringing EV infrastructure to communities, education and discounts to drivers and more, throughout Westchester County.

Sustainable Hudson Valley's [Drive Electric Hudson Valley](#) provides “acceleration through coordination” with driver education and support, dealer training, infrastructure rollout and stakeholder engagement.

Additional NY State Programs

- [EV Make Ready Program](#) covers covers eligible site preparation expenses for charger installation such as electrical and trenching.
- [DCFC Per-Plug Incentive Program](#) cost-shares electricity expenses



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