

EV CHARGING PLAYBOOK

by  ampUp



EV CHARGING BASICS

As the number of electric vehicles (EVs) on the road steadily increases, more and more drivers are looking for accessible charging options at home, work and in their communities.

There are three levels of charging for EVs today:

Level 1 - All EVs come equipped with a plug for standard 120-volt outlets.

Level 2 - Requires 240-volt outlet and an installed charging unit.

DC Fast Charging (DCFC) - Requires 400-volt or higher for fast-charging.

Charge range depends on the car battery, type of charger, charger kilowattage, and time charging. Typically, a Level 2 charger is ideal for cars that will be parked for a few hours, like at workplace or home. DCFC is better for quick and effective charges while on the go.

BENEFITS OF COMMUNITY CHARGING



Workplace & University

- Coordinate charging based on your work schedule with AmpUp Reservations
- Notifications to employees when plugs are available
- Automate management of different user types and pricing (staff, students, visitors)
- Earn revenue during off-peak hours to offset costs
- Ongoing sustainability, utilization and revenue reports



Utility & Governments

- Set dynamic pricing such as time-of-use rates
- Schedule load management for demand response events
- Manage multiple charging sites in one place
- Detailed reports on station usage, energy use by location



Retail

- Attract customers with reservable storefront charging
- Entice customers with discounted charging coupons
- Offer employee and guest access
- Offset network and energy costs with public charging



Multi-Unit Dwelling

- Intuitive platform makes for hassle free charging
- Reservations create charging certainty for tenants & helps organize who charges when & for how long
- Notifications to tenants when plugs are available
- Set unique time or energy based pricing for different groups



Fleet

- Load scheduling for energy optimization
- No app needed, RFID charge authentication
- Fleet telematics integration
- Dedicated access
- Ongoing reports of station usage & mobility trends



Hospitality

- Reservable and dedicated charging as an amenity to hotel guests
- Provide guest and public pricing or expiration codes
- Tie RFID access to stations with room key

PROJECT CONSIDERATIONS

FSG and AmpUp make sure that our features cover all your EV charging needs.

HARDWARE

Networked Stations

Today, EV drivers use networked stations to schedule, authenticate, and pay for their charging sessions in a convenient and familiar way. Networked stations also provide important data for maintenance.

Open Charge Point Protocol (OCPP)

OCPP is a protocol that offers a gold standard of customer choice and charge station control. Charge stations that are OCPP-compliant allow for seamless communication between charging hardware, software, and consumers.

Other Features to Consider

Current: 7.2 and 7.7kW of power are most common in Level 2 chargers.

Cord Length: longer cords give more flexibility. 25 feet is recommended.

Size : consider the site dimensions and size of the unit(s).

Connectivity: smart chargers with WiFi or Cellular connectivity allow hosts to monitor energy usage and drivers to schedule sessions.

SOFTWARE

Hardware-Agnostic

Is your software and networking provider compatible with multiple hardware companies? Make sure a station upgrade or vendor switch is easy with the correct hardware-agnostic software.

Net-Zero Cost

Does your software allow for custom pricing and accessibility to the public? Site hosts are earning money for sharing their stations, helping offset ongoing network costs to achieve.

Reporting

Do you need insights to your charging community, such as station usage, electricity consumption, and revenue? Ensure your software provides these metrics and more to keep you most informed.



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COSTS TO CONSIDER

Some core costs associated with owning and operating charge stations include:

- **Charge station hardware costs** including unit costs, accessories, warranty packages.
- **Installation costs** including labor and materials for connecting stations to electrical service, permitting and inspection, and engineering review and drawings.
- **Operations & maintenance costs** including electricity consumption and demand charges, network subscription, billing transaction costs, preventative and corrective maintenance and repair.

COMMUNITY NEEDS

- Who are the various user groups? Public, private, or semi-private users?
- How many EV drivers are in or projected to be in the community?
- How many parking spaces can you dedicate to EV charging?

AmpUp provides turnkey charging solutions for communities of all shapes and sizes.

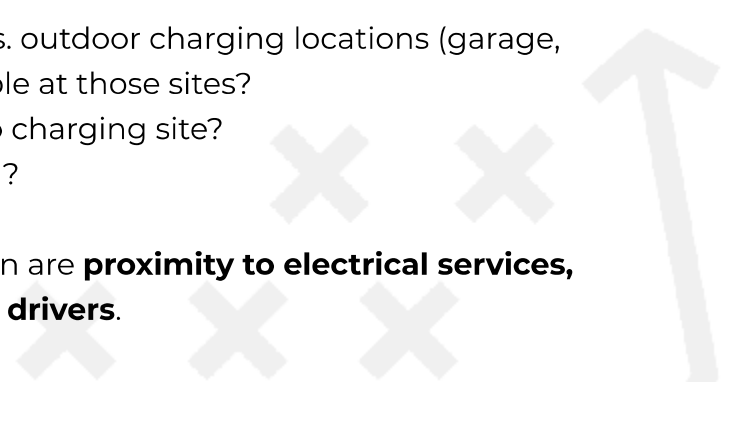
GRANTS, REBATES, & INCENTIVES

Many states, cities, and local utility providers offer incentives for commercial and residential charging stations such as tax credits, rebates, grants, and loans. These incentives can help **cover costs of charge station equipment, installation, and networking fees**. AmpUp and our many regional partners can help you navigate available incentive programs that you may be eligible for.

SITE SELECTION

- What site options are available for indoor vs. outdoor charging locations (garage, parking lot, curbside, etc.)? Is power available at those sites?
- What is the proximity from electrical box to charging site?
- Are parking spaces assigned or unassigned?

The main factors for determining site location are **proximity to electrical services, availability of voltage, and accessibility for drivers**.



FREQUENTLY ASKED QUESTIONS

Do these charging stations work with all EV car models?

Yes, the standard for the Level 2 plug type is called J1772 and it's compatible with all EV manufacturers. Tesla uses a different type of connector, but their cars come with an adapter so Tesla drivers can use the J1772 plugs.



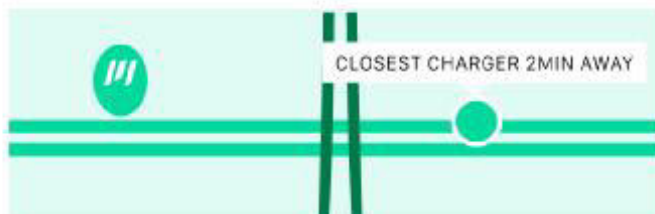
How do they use it once they find it?

The quickest & easiest way to initiate a session is scanning the QR code displayed on each charger with the AmpUp app or via a registered RFID card (available to order in the AmpUp app or through your installer).

We also support scanning a QR code without the AmpUp app and processing the charging session through a web browser. If a payment is necessary, this will be slower compared to using the app, but in this way we make it easy to use in case drivers don't have the app.

How does our site get reimbursed for the electricity used by the charging station?

AmpUp's platform allows site hosts to set their own prices to the drivers - the cost of electricity or higher - collect 100% of the revenue from the charging sessions and receive these funds via direct deposits into their bank account.



How do drivers find the chargers?

The AmpUp driver app allows drivers to see both AmpUp stations as well as all other plug types and networks. PlugShare is another popular app among EV drivers that can be used to find the charging stations.

FREQUENTLY ASKED QUESTIONS

Turn off public access



Who manages and has access to the network? Will our stations be listed publicly?

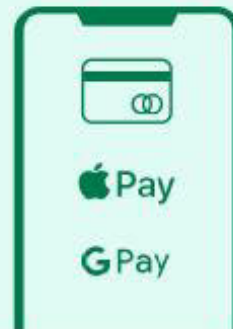
AmpUp manages the platform that allows site hosts to control not just who can access this platform & the aforementioned revenue, but also who can charge at the stations. Site hosts may choose to turn off both public access as well as public visibility on the driver app.

* Station owners who wish to increase utilization would likely want to keep the public access on.

Do the charging stations accept payment? How do they process transactions?

Yes, networked stations can accept payments via the mobile app which allows drivers to link to their form of payment (credit card, Google & Apple Pay).

Transactions are processed by a secure & trusted payments provider and never shared with third-parties.



How do we ensure that the charging stations are being used only by EV drivers and that those stations are being shared?

Proper signage and striping of EV parking spots will help make it clear to non-EV drivers what the intended use of the stalls are for. However, some properties may experience ICEing, i.e. when an internal combustion engine (ICE) parks in an EV stall. In this case, good old fashioned parking enforcement may be needed.

In order to ensure fair sharing of the chargers between EV drivers, AmpUp allows site hosts to set customizable session limits and idle fees on top of the normal price to charge.

