

FUTURE PROOFING EVSE

To ensure that your investment is sustainable and efficient it is important to encourage EVSE standards and protocol when installing public EVSE. Such standards and protocol will help protect your investment from and provide reliable customer service.

Charging Stations

There are two recommended types of EVSE for public charging sites, Level 2 and DCFC. Each of which has its own usefulness in the locations and consumers they serve.

LEVEL 2

Level 2 charging is ideal for consumers that may want a small battery boost while out shopping or a full charge in 2-4 hrs. L2 chargers will provide access to consumers that do not have the ability to charge at home without the need for a heavy duty electrical capacity.

DC-FAST CHARGING

Although the more costly, DC fast chargers are the most efficient in charging time with the ability to charge heavy and light duty EV's up to 80% in 30 minutes. They require extensive electrical infrastructure and can have a greater impact on the electrical grid if not managed properly. With this investment it is important to monitor the amount of electricity being used by your site to avoid utility service issues.

Connectors

Providing your state with the right connectors are essential to make charging accessible to all consumers and build out EVSE Corridors to alleviate consumer anxiety.



Connectors are essential to equitable EVSE access. Currently there are no universal chargers in the market, but by requiring a charging standard of the J1772 L2 and CCS DCFC connectors you will be able to build out the most efficient and consumer friendly charging stations.



BEST PRACTICES

Providing the right infrastructure for consumers is important but so is having software protocol that help hosts manage and protect their charging stations. Having essential protocol installed in your EVSE enables smart charging capabilities while also can prevent stranded assets. Protocol is important to consider when building out EVSE as it will provide more flexibility with monitoring all of your charging sites needs.

Essential Protocol

Open Charge Point Protocol (OCPP)
Allows operation by multiple companies and will better allow you to switch between charging networks without any stranded assets.

Open Charge Point Interface (OCPI)
Exchanges information about charge points and enables roaming so that consumers can easily find and use compatible EVSE outside of their standard network

Open Automated Demand Response (OpenADR)
Allows for information signals between distribution system operators, utilities, energy management, and control systems to balance demand during peak charging times and simplifying customer energy management

eMobility Interoperation Protocol (eMIP)
Provides authorization and a data clearinghouse application programming interface. Also includes ISO 15118 which is an international standard feature for bi-directional digital communication between EV's and charging stations that allows vehicles to sell power back to the grid to minimize grid load.

Open Smart Charging Protocol (OSCP)
Facilitates capacity-based smart charging and provides open communication between a charge point management system and an energy management system to predict grid capacity

GRID MANAGEMENT

INDIVIDUALS HOSTING CHARGING STATION LOCATIONS MUST CONSIDER THE SITE'S ENERGY CONSUMPTION AND ITS IMPACT ON OUR ENVIRONMENT. LOCAL GOVERNMENTS SHOULD BE AWARE OF LOCAL ENERGY DEMAND AND USE OF RENEWABLE ENERGY TO PROMOTE SUSTAINABLE EVSE USE AND PROLONG THE LIFESPAN OF YOUR INVESTMENT

POWER SHARING

There are three types of power sharing used to support the delivery and management of increased charging capacity.

1. Circuit Sharing allows a circuit to support more than one charging spot.
2. Panel Sharing enables a charging site to maximize the number of charging ports electricity can be distributed to support more charging spots than an area rated capacity.
3. Site Sharing which sets a power ceiling to limit the load for all charging stations if the available power is limited.

BATTERY STORAGE SYSTEMS

HELPS STABILIZE CHARGING COSTS AND MANAGE GRID USE DURING PEAK DEMAND IN THREE WAYS:

BATTERY PROTECTION
BATTERY MONITORING
STATE OF HEALTH OF BATTERY DURING CHARGING AND DISCHARGING