



New Single Family Dwellings Electric Vehicle Supply Equipment (EVSE) Permit Submittal Checklist

Purpose

This handout summarizes the requirements for a complete permit application for the installation of EVSE in single family dwellings. The following guidelines shall be reviewed before commencing any work.

Additional Agency Approvals

If located in **City of Gridley**, contact the City Electric Department at (530) 846-5695

If located in **City of Biggs**, contact the City of Biggs Electric Utility Department at (530) 868-5493

If located **elsewhere in the County**, contact PG&E at 1-877-743-7782

Definitions and Acronyms

- EVSE = Electric Vehicle Supply Equipment. This is the equipment that is installed between a source of electricity and the electric vehicle connection
- PEV = Plug-in Electric Vehicle. A vehicle that either runs entirely on electricity or a combination of electricity and another source of fuel.
- Hybrid = A vehicle that runs on a combination of electricity and another source of fuel
- Charger = A device that converts household AC power to DC power and regulates the charging of the PEV batteries.
- Level-1 Charging = (120 VAC, 15Amp or 20Amp).
- Level-2 Charging = (240 VAC, 30 - 100Amp).
- Level-3 Charging = Fast DC Charging. Many vehicles have the capability to be connected to a DC Fast Charger; however, these chargers are not practical for residential use due to the high electrical demand.
- Hard-Wired or Permanently Wired = EVSE that is directly wired into the homes electrical wiring.
- Cord and Plug Connected = The EVSE is plugged into an outlet that is either existing or installed for the purpose.

The chargers for Level 1 and 2 systems are actually located on-board the vehicle. The Electric Vehicle Supply Equipment (EVSE) is the interface device between the vehicle charging system and the household power. EVSE consists of the connector, cord, control device, and interface to the household power. The connector at the vehicle is typically a standard SAE J1772 coupler (with adapters available for those vehicles using a different style connector). At the other end, the device may be directly hard-wired to the home or it may be connected via a cord and plug.

Level-1 systems operate on a standard 120-volt wall outlet. This outlet may be existing on the premises, but consideration needs to be given to the minimum amperage requirements of the EVSE and what other electrical loads are on the circuit. It is recommended that a circuit dedicated solely to the EVSE be used. The installation of a new outlet for this purpose would require a permit and inspection. Load calculations shall be performed to determine adequacy of the electric service, however for a Level-1 system the additional load on most residential electrical services is likely negligible. Plug-in Hybrid Vehicles (that use both gas and electric), and those people not concerned about long charging times, may be served adequately by Level-1 EVSE.

Level-2 systems are commonly desired because of the lesser time needed to charge the vehicle. They can range from a 30-amp system all the way up to 100-amps. Thus the size of the system, and the home's capacity to support it, are critical to code compliance. Level-2 systems and circuits will always require a permit and inspection. In some cases, the home's electric service may need to be upgraded. Load calculations on the home are the only way to determine if the existing electrical service has the capacity for a Level-2 charger. There are devices available that remove an existing load from the dwelling in order to facilitate the load of the charger. These devices do not allow both loads (such as an electric dryer) to operate simultaneously; therefore, the larger of the two loads can be used in the calculations. Such devices shall be UL listed to applicable product safety standards.

Permit / Plan Submittal

Complete plans and documents can be submitted directly to the Building Division counter or by email to dsbuilding@buttecounty.net.

NOTE: Unless an existing circuit is determined to be adequate for a Level-1 EVSE device, an electrical permit is required for an EVSE system or for the installation of a circuit/outlet for a cord and plug connected unit.

If submitting digital plans, only one set of the following is required.

- Complete permit application.
- Indicate level of EV charger, level 1 or level 2.
- Three (3) site and/or floor plans showing location of existing service panel and proposed charger location.
- Two (2) manufacturers cut sheets.
- Two (2) electrical one-line diagram showing service size, proposed breaker size, proposed number of conductors, conductor size, conductor type, and EVSE.
- Electrical loads calculations to verify the service panel is large enough for the proposed load.
- Permit fees payment.
- The County may impose additional submittal requirements based upon site-specific circumstances.

Permit Issuance

The following will be required at time of permit issuance:

- Proof of current contractor's license / Worker's Compensation insurance (for contractors only).
- Outstanding building fee payment.

Questions

Contact the **Building Division** at (530) 552-3700 or by email at dsbuilding@buttecounty.net for inquiries on plan check and building fees.

