

Preston residence 6121 Soter Pkwy Austin TX 1.5 kW batteryless solar array for charging a Tesla EV battery.



The panels are on wheels for manual tracking of the sun and pivot around a ground rod at the base. Clamps at the base and an anchor to ground prevents the panels from blowing over in high winds.



The metal tubes are triangular shaped and give the panels rigidity. The angle is set to slightly over 30 degrees elevation to maximize the sun angle for the year. The south facing panels are spaced in the back yard to receive maximum sunshine considering the surrounding fences and trees. The panels can be rotated during the day for morning and evening collecting more energy than if left just facing south.

The Harris's home to the south has vines on their fence mostly hiding the panels from their view.



Below is looking at the panels from the the Harris's point of view but on the Preston side of the vines:



Looking south from the Keffer's fence on the north side of our pool shows the panels are hidden from view.



From the Preston driveway the panels are barely visible near the ground compared to highly visible if they were on the garage roof. The roof is too old to put panels on it and not old enough to replace the shingles. One thing the solar panel installers universally emphasize is to not put panels on an old roof.



The electrical cable to the bottom left goes underneath the sidewalk in a metal conduit. The conduit will be run to the solar panel pivot point and the wiring will be tucked in along the panels so it will not be dangling. Conduits are run between the panels. A DC switch for disconnecting the panels will be added for safety.



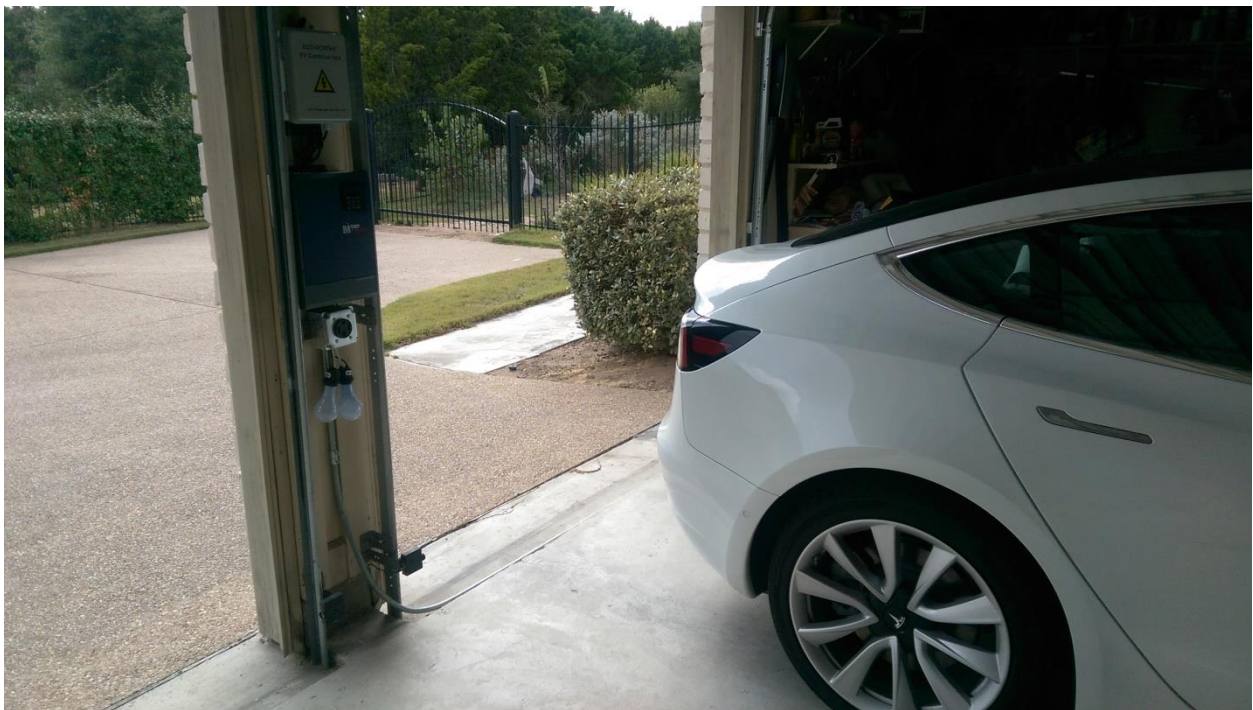
Electrical conduit runs under the sidewalk and behind planters along the wall entering the garage door.



Here is the detail how the conduit runs along the garage opening. The garage door does not touch the conduit at any location.



Another view showing the routing of the conduit to the inverter box and 240 volt outlet.



The PV combiner box has a switch and a surge protector. The DC current from the panels is about 330 volts at 8 amps full sun. Wiring is enclosed for safety and NEC standards.

The inverter uses sunlight to drive a water pump motor directly. No battery is needed in this system. If the sunlight is strong enough the inverter switches on the 240 VAC power.

The light bulbs are just for testing and are 300 watts. They will be removed when the system has been checked out and is working.

This off grid system is designed to power the car even if there is a power failure. It will decrease energy that would have come from Austin Energy at the upper tier rate. This \$1000 system has a payback period of about two years if it works as planned.

