Energy to send and receive signals to operate DER in a manner to maximize their value. Approximately six of the sites will also be provided a residential energy storage system (ESS).

Distribution of this equipment will allow the study of several use cases under the Austin SHINES project. This includes sites with autonomous settings (established settings under a "set and forget" model that does not require active monitoring or control), sites under a direct utility control business model (directly connected to Austin Energy's DER optimization platform, which will assess each site's capability and send operation signals directly to the site), and sites (those with PV and ESS) under an aggregation model connected to Austin Energy's DER optimization platform through an intermediary (Pecan Street) who receives signals from Austin Energy and then determines how to meet the need by allocating and sending operation signals to the sites under its purview. The aggregated model provides a consolidation service to streamline interactions on behalf of the utility. Pecan Street will be responsible for the planning, testing, procurement, and installation of the equipment on all residential sites and the integration of communications between these systems and the project's control systems, as applicable. Pecan Street will collect and analyze data associated with the residential deployments, provide reports required for the grant and provide data to Austin Energy. For the aggregation model, Pecan Street will develop an intermediary software solution that controls the individual residential sites while offering any excess capacity to Austin Energy for use in optimizing the DER that are part of the Austin SHINES project.

The Austin SHINES project aims to establish a template for other utilities and regions to follow to cost-effectively maximize the penetration of distributed solar PV. In addition, the proposed solution will enable distribution utilities to mitigate potential negative impacts of high penetration levels of PV caused by the intermittency and variability of solar production which causes stress on the grid. Specific objectives include the installation of approximately four megawatts of distributed storage, approximately 30 smart inverters and other enabling technologies. All of these resources will be integrated and optimized at the utility level using an approach that allows a variety of management strategies and drive development of enabling standards as well as technology innovation.