



(19) **United States**

(12) **Patent Application Publication**
HOLCOMB et al.

(10) **Pub. No.: US 2024/0178666 A1**

(43) **Pub. Date: May 30, 2024**

(54) **SCALABLE EDGE HARDWARE SYSTEM FOR DISTRIBUTED ENERGY RESOURCES**

(52) **U.S. Cl.**
CPC *H02J 3/001* (2020.01); *H02J 3/144* (2020.01)

(71) Applicant: **PowerFlex Systems, LLC**, San Diego, CA (US)

(72) Inventors: **Chad HOLCOMB**, Salt Lake City, UT (US); **Zachary Jordan LEE**, Pasadena, CA (US)

(21) Appl. No.: **18/523,356**

(22) Filed: **Nov. 29, 2023**

Related U.S. Application Data

(60) Provisional application No. 63/385,591, filed on Nov. 30, 2022.

Publication Classification

(51) **Int. Cl.**
H02J 3/00 (2006.01)
H02J 3/14 (2006.01)

(57) **ABSTRACT**

Certain aspects of the present disclosure provide techniques for providing edge hardware system for distributed energy resources. One embodiment of a system includes a core device that is deployed in an edge environment of a site, the core device causing the edge hardware system to communicate with a cloud environment to acquire current optimization and load management set points for a charging station, dispatch the current optimization and load management set points through a local communications protocol via a local network to the charging station, and receive data from the charging station through the local network. In some embodiments, the core device causes the hardware system to communicate the data to the cloud environment via a wide area network and control charge and discharge parameters of an energy asset at the charging station using energy-related inputs.

