



Hawai'i Natural Energy Institute Research Highlights

Grid Integration

EV Charging Infrastructure Master Plan for USMC Camp Fuji, Japan

OBJECTIVE AND SIGNIFICANCE: Aligned with the ambitious climate goals outlined in United States Executive Order 14057, the United States Marine Corps (USMC) has partnered with HNEI's Grid System Technologies Advanced Research Team (GridSTART) to develop a comprehensive master plan for fleet electrification and electric vehicle (EV) infrastructure implementation at Combined Arms Training Center (CATC) Camp Fuji in Gotemba, Japan. The plan establishes an accessible network of EV charging stations that are efficient, convenient, and safe, with the aim of encouraging EV adoption and promoting sustainability at CATC Camp Fuji.



Figure 1. HNEI personnel at CATC Camp Fuji.

BACKGROUND: CATC Camp Fuji, situated at the base of Mt. Fuji in Gotemba, Japan, is a USMC installation and training area encompassing various facilities such as barracks, warehouses, repair shops, fleet garages, and a military police post. Following the directives outlined in Executive Order 14057, the Camp is planning to transition its non-tactical vehicle fleet to EVs in the coming years. Presently, public EV charging infrastructure in Japan is limited. Therefore, Camp Fuji's EV charging network must be thoughtfully designed to accommodate the specific usage needs of each fleet vehicle while also incentivizing the adoption of privately owned EVs at the camp.

PROJECT STATUS/RESULTS: HNEI GridSTART and CATC Camp Fuji jointly developed an EV integration Master Plan, providing detailed technical analysis and direction for the Camp's fleet vehicle transition to EVs. The Master Plan presents two distinct approaches: 1) the Targeted Infrastructure Integration Plan and 2) the Large-Scale Infrastructure

Integration Plan, with each supported by detailed schematics, cost estimates, and relevant technical data to provide Camp Fuji with flexible implementation options.

The Targeted Infrastructure Integration Plan establishes a framework for optimizing the Camp's EV fleet transition while considering current EV capabilities, Japanese public charging infrastructure, and the Camp's existing electrical systems. This approach evaluates the Camp's current fleet and facilities, identifying the most suitable vehicles and charging locations that can be electrified with minimal modifications to the Camp's existing electric infrastructure.

The Large-Scale Infrastructure Integration Plan, developed internally by Camp Fuji personnel, takes a more expansive approach by outlining the requirements for complete fleet electrification within the Camp. This plan, designed to accommodate a potential fleet of 100+ EVs, aligns with the Camp's existing Fiscal Year 2027 Energy Resilience and Conservation Investment Program (ERCIP) infrastructure improvement plans.

Both approaches provide extensive technical analyses and documentation, including schematics, concept art, electrical load information, and cost estimates for EV infrastructure integration within Camp Fuji. This level of detail enables the Camp to make informed decisions while providing a robust technical foundation for plan execution.

In February 2024, HNEI traveled to CATC Camp Fuji to present the finalized EV Infrastructure Master Plan to stakeholders within the Camp. The Plan's contents were warmly received by the Camp's personnel, with indications of prospective incorporation into future Camp developments. Following its successful reception in April 2024, this project has reached its conclusion.

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