

Press release

February 16, 2024
Shizen Connect Inc.

Shizen Connect completes one of Japan's largest VPP demonstrations with EV charging and discharging

In January 2024, Shizen Connect Inc., a VPP^{*1} platform developer, conducted a VPP demonstration by remotely controlling 186 household EVs via EV charge/discharge (V2H) equipment as part of the "FY2023 Demonstration Project for Further Utilization of Distributed Energy Resources"(DER Aggregation Demonstration Project), implemented by the Ministry of Economy, Trade and Industry. The scale of this demonstration is one of the largest VPP demonstrations using V2H equipment in Japan and one of the largest in the world ^{*2}.

The DER Aggregation Demonstration Project aims to provide regulating power and supply capability to the electricity market, electricity retailers, and power generation companies by aggregating DER (Distributed Energy Resources) such as storage batteries and EVs into VPPs, and Shizen Connect was selected in June 2023 ^{*3}.

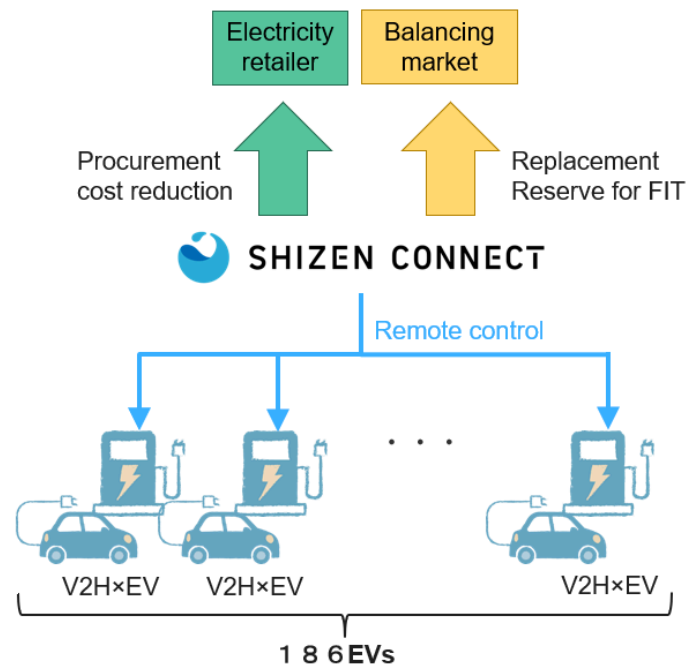
Shizen Connect has so far demonstrated a comprehensive range of VPP controls, including all types of regulating power control in the balancing market using DER, DR^{*4} control as a dispatch instructed power source in the capacity market, and economic DR control for the purpose of reducing electricity procurement costs and alleviating supply-demand constraints for electricity retailers. In December 2023, Shizen Connect announced the implementation of a joint demonstration project with eight major electricity retailers in the field of low-voltage VPP using household storage batteries ^{*5}, as well as VPP control demonstrations using EV AC chargers ^{*6}, V2H equipment ^{*7}, and EcoCute.

In this demonstration, "Shizen Connect", a proprietary aggregate energy management system developed by Shizen Connect, was used to remotely control 186 residential EVs via V2H equipment to verify the technology for economic DR control and control for the balancing market (Replacement Reserve for FIT).

As a result, it was confirmed that the system can control charging and discharging of aggregated EVs with an accuracy of 90% of the indicated values in both economic DR control and control for the balancing market. In addition, by acquiring and analyzing actual data on communication status and parking time periods, Shizen Connect was able to gain useful knowledge for the future commercialization of VPP services utilizing EVs.

Shizen Connect is developing a VPP platform business based on the belief that in order to expand and promote the use of renewable energy, it is essential not only to develop renewable energy sources but also to establish a system that balances the supply and demand of renewable energy. Shizen Connect will continue to contribute to the realization of a decarbonized society through the promotion of DER.

■ Demonstration diagram



*1 **Virtual Power Plant (VPP)** is a generic term for digital technology that collectively controls distributed power sources (power generation facilities, storage batteries, EVs, etc.) and demand facilities as if they were a single power plant.

*2 based on our research

*3 [Shizen Energy selected for METI DER Aggregation Demonstration Project](#) (June 26, 2023 press release)

*4 **Demand response (DR)** is the process of changing the pattern of electricity demand by allowing consumers to manage their electricity use wisely. This helps to balance the supply and demand of electricity.

*5 [Eight leading electricity retailers to conduct joint low-voltage VPP demonstration with Shizen Connect](#) (December 5, 2023 press release)

*6 [Nitto Kogyo and Shizen Connect to conduct DR demonstration using OCPP-compliant EV chargers for VPP construction](#) (February 6, 2024 press release)

*7 [Shizen Connect selected for Tohoku Electric Power peak shaving and VPP demonstration project using EVs](#) (December 1, 2023)

EMS “Shizen Connect” <https://www.se-digital.net/> (Japanese website)

“Shizen Connect” is an aggregation energy management system (EMS). It can provide individual control for storage batteries and EV chargers, control for microgrids connecting multiple buildings with their own private transmission lines, as well as control of VPPs for large scale energy resources. Individual control and VPP control tended to be separate, but Shizen Connect provides a one-stop service allowing energy resources to be used multi-purposefully, which also improves economic efficiency. The system can be adapted with any equipment supplier, allowing energy resources to be chosen freely without relying on a certain manufacturer.

Shizen Connect Inc.

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Founded: October 2, 2023

Shareholder: Shizen Energy Inc. 100%

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Business: VPP platform, energy management service, IoT equipment sales, etc.

URL: <https://se-digital.net/> (Japanese only)

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