Press release

June 17, 2024
Yanekara Inc.
Shizen Connect Inc.

# Yanekara and Shizen Connect to conduct VPP PoC with Toho Gas using EV charging control

Electricity procurement cost reduction by remote control of EV charging controllers

Yanekara Inc. (Yanekara) and Shizen Connect Inc. (Shizen Connect) will begin a joint proof of concept (PoC) project with Toho Gas Co., Ltd. (Toho Gas) from August 2024 to verify the technical and economic feasibility of remote control of electric vehicle charging, with the aim of further expanding the platform for "Equipment Control DR Support Service"[*1], which uses VPP[*2] to address supply and demand constraints and reduce electricity procurement costs for electricity retailers.

In order to achieve carbon neutrality by 2050, it is considered an important issue to build a stable power system by making the most of distributed resources such as renewable energy power sources and storage batteries. In this context, there is a growing expectation to control electric vehicles, which are expected to rapidly spread and expand in the future, as one of the distributed resources and utilize them to create balancing capacity.

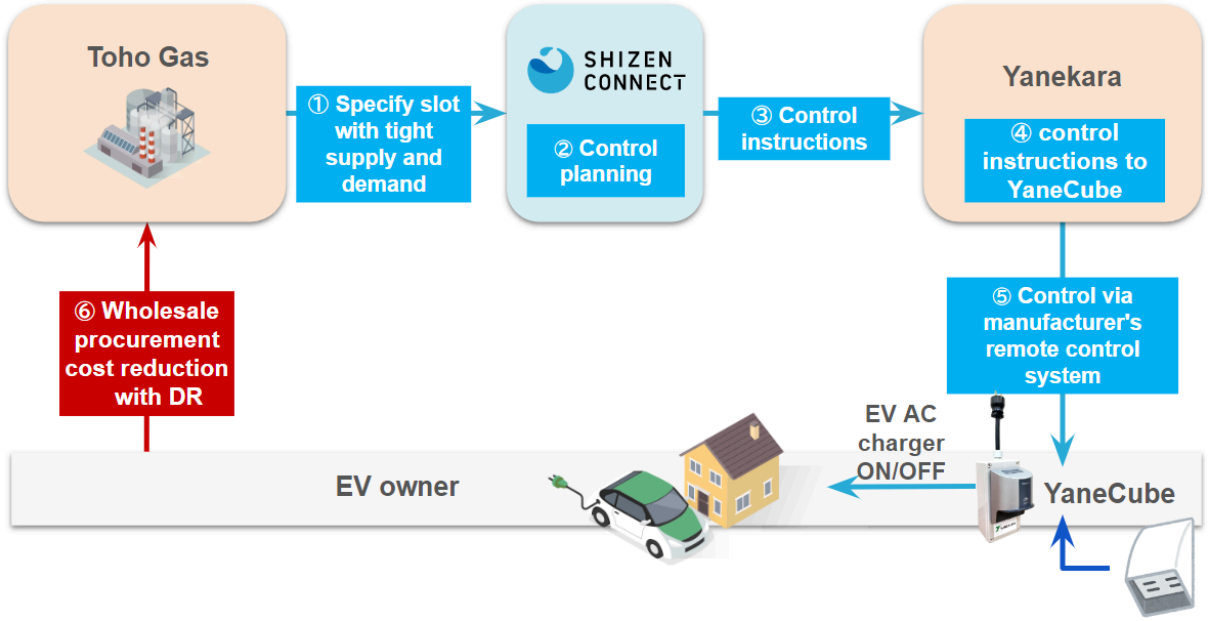
In this PoC, Shizen Connect will use the "Shizen Connect" aggregate energy management system developed and operated by Shizen Connect, and remotely control EV charging via the "YaneCube" EV charging controller provided by Yanekara through a web API connection to the control cloud. The aim is to reduce the wholesale procurement costs of Toho Gas, the electricity retailer, by suspending EV charging during periods of high JEPX prices and shifting to EV charging during periods of lower prices.

Shizen Connect has been commercially providing "Equipment Control DR Support Service" in the area of low-voltage VPP since May 2023, and has achieved cloud connectivity with five residential storage battery manufacturers, accounting for 57% of the domestic market share[*3]. In addition, to utilize EVs as distributed resources, Shizen Connect has conducted numerous PoCs for commercialization, including control via V2H devices[*4] and control via EV AC chargers[*5*6].

Through this PoC, Shizen Connect aims to achieve the collaborative use of "Shizen Connect" and "YaneCube", and to verify the technical and economic feasibility of controlling EVs via EV charging controllers, with the goal of future commercial deployment.

Shizen Connect will continue to work with leading companies in various fields to contribute to the realization of a decarbonized society.

**Image of VPP PoC using EVs**




**PoC Overview**

| | |
|---|---|
| Objective | 1.Technological verification of remote control of "YaneCube" through web API integration between "Shizen Connect" and Yanekara's control cloud<br>2. Economic evaluation of reduction in wholesale procurement costs for electricity retailers by shifting EV charging time |
| Duration | August - September, 2024 (tentative) |
| Role of Yanekara | ・Web API compatibility with Shizen Connect<br>・Implementation of EV charging control using ”YaneCube" based on Shizen Connect's control instructions and reporting of response results |
| Role of Shizen Connect | ・Web API compatibility with Yanekara<br>・Development of control plans and control commands<br>・Verification of PoC results<br>・Overall coordination of the PoC, etc. |
| Role of Toho Gas | ・Provision of PoC environment<br>・Examining business models based on PoC results |

*1 **“Equipment Control DR Support Service”:** a service that changes the pattern of electricity use by remotely controlling the residential storage batteries and other energy devices owned by consumers, balancing electricity supply and demand according to the needs of retail electricity providers, and creating balancing capacity

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

*3 "Shizen Connect" selected as control platform for Tokyo Gas IGNITURE storage batteries (April 23, 2024 Press release)
https://www.shizenenergy.net/2024/04/23/shizen_connect_igniture_saas/ (Japanese)
*4 Shizen Connect completes one of Japan's largest VPP demonstrations with EV charging and discharging（February 16, 2024 Press release）
*5 Nitto Kogyo and Shizen Connect to conduct DR demonstration using OCPP-compliant EV chargers for VPP construction(February 6, 2024）
*6 Shizen Energy launches "Equipment Control Demand Response Service" for electricity retailers for supply and demand strain countermeasures and cost reduction (press release May 15, 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.

**EV charging controller "YaneCube"**
An EV charging controller developed by Yanekara. This is the only product in Japan that can be installed on existing EV charging sockets to add remote control functionality. By simply plugging it into an EV charging socket, it automatically controls charging and reduces electricity costs. It is possible to obtain charging data for each EV, and it is possible to extract and analyze data such as number of charges and power consumption. It is possible to analyze electricity consumption by combining mileage and EV charging data, and calculate the amount of CO2 reduction for each EV, making V1G a reality with minimal initial investment.
"YaneCube" website: https://yanekara.jp/yanecube (Japanese only)

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Founded: October 2, 2023
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