Press Release

June 8, 2022
Shizen Energy Inc.

Shizen Energy and OMRON Social Solutions to begin EV Smart Charging and Discharging Service Demonstration Tests from July

Shizen Energy Inc. (Shizen Energy) together with OMRON Social Solutions Co. Ltd.(OSS), will start demonstration tests to control the charging and discharging of EVs in Maizuru City, Kyoto Prefecture, from July 1, 2022.

1. Background of this demonstration

Maizuru City and OSS signed a comprehensive collaboration agreement in April 2019. Looking ahead to 2030, Maizuru City and OSS are working to solve the challenges facing Japan's local communities with the aim of creating a sustainable society in which local cities can generate their own income and achieve a stable local economy, independent from the external environment. Maizuru City and OSS are promoting efforts to realize 100% renewable energy in the city of Maizuru by utilizing total energy solutions that combine energy conservation, energy creation, and energy storage, including the introduction of solar power generation, storage systems and EMS (Energy Management System), in order to create a sustainable city where society, environment and economy are in harmony.

EV and V2H Charging and Discharging Equipment

Integrating EVs with renewable energy generation facilities makes it possible to use electricity with zero CO2 emissions. Among them, V2H (*1) charging/discharging equipment, which is a power conditioner for EVs for charging/discharging, allows EVs to be used like storage batteries and can store surplus power from renewable energy generation facilities without it being wasted. Therefore, EVs can be used as a source of electricity supply in times of disaster and can also reduce electricity bills during normal conditions.

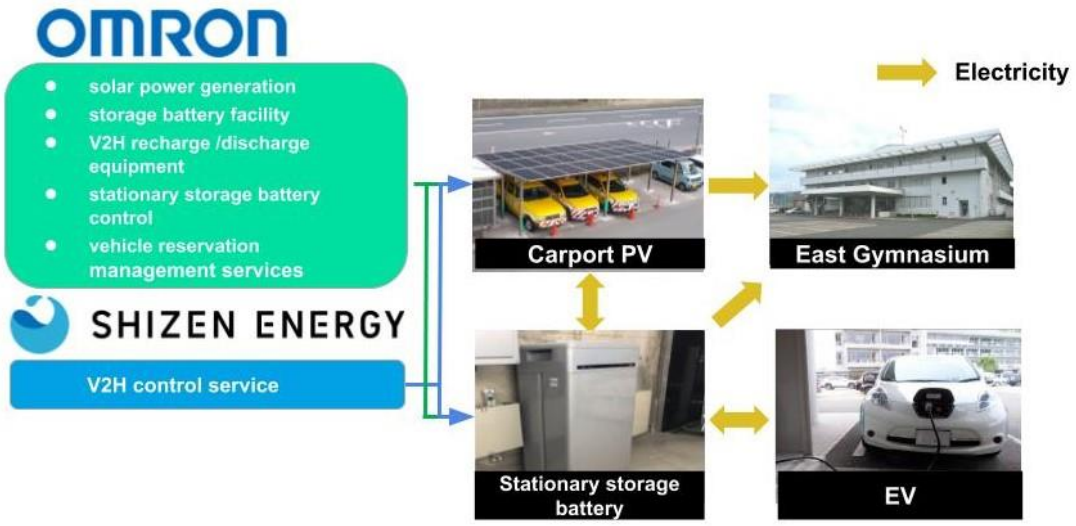
2. Project details

In this demonstration project, Maizuru City will provide official EVs, and OSS will install a new carport solar power generation and storage battery system together with a V2H recharge/discharge system at the Maizuru East Gymnasium. The stationary storage

batteries will be automatically controlled by EMS and vehicle reservations will be managed using "DriveKarte S (*2).” Shizen Energy will control EVs with Shizen Connect (*3), an aggregate energy management system developed and provided by the company.

This project is aimed to verify the improvement of the self-sufficiency rate of renewable energy as well as the economic efficiency through peak shaving. In addition, the V2H recharge/discharge facility will allow EVs to be used like storage batteries, storing surplus power from solar power generation facilities, reducing electricity usage costs, and allowing EVs to be used as a source of electricity supply in times of disaster.

■Demonstration Overview



3. Verification details

The following effects will be verified through this demonstration project.

- Improvement of self-sufficiency in renewable energy by supplying electricity from a carport solar power generation facility to the Maizuru East Gymnasium
- Use of V2H charging and discharging facilities to reduce peak demand by using electricity stored in EVs during periods of high electricity use, reduce electricity use costs, and increase self-sufficiency in renewable energy
- Optimization of energy management by combining automatic control of stationary storage batteries and remote automatic control of V2H recharge/discharge facilities

In the future, by controlling renewable energy generation facilities, storage batteries, and EVs on a regional basis, the goal is to realize VPP (*4) at the regional level, where multiple distributed power plants are controlled and integrated with digital technology to function like a single power plant.

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Shizen Energy and OSS aim to contribute to the realization of a decarbonized society by expanding the model case of Maizuru City as a successful example to other local governments in Japan that face similar energy management challenges.

※1. **V2H（Vehicle to Home）**：Not only charging EVs, but also sending electricity from EVs to the home. In case of a natural disaster, household appliances can be used as usual by supplying power from the EVs.

※2. **DriveKarte S**：Safe driving management service using a smartphone app and cloud computing provided by OSS

※3. **Shizen Connect**：Aggregate energy management system provided by Shizen Energy that collectively controls energy resources such as renewable energy generation facilities, storage batteries, EVs, and EcoCutes.

※4. **VPP（Virtual Power Plant）**：Virtual power plant that controls and integrates multiple distributed power plants with digital technology

＜**Related Information**＞

Shizen Energy's Aggregate EMS "Shizen Connect" added with EV Smart Charging Function
https://www.shizenenergy.net/en/2022/03/14/shizen_connect_v2h/

【Project Outline】

Objective	Verification of remote control technology for charging and discharging solar power generation facility and V2H equipment
Period	July 2022 to March 2023
Location	Maizuru East Gymnasium
Allocation of roles	Maizuru City ● Provide government EVs ● Provide East Gymnasium reservation information OSS ● Demonstration test main party ● Installation of solar power generation, electricity storage facilities, and V2H charge/discharge facilities ● Stationary storage battery control, vehicle reservation management with DriveKarte S Shizen Energy ● V2H (EV) peak shaving control

【About OMRON Social Solutions Co. Ltd.(OSS)】

An OMRON Group company responsible for the social systems business. With its unique automation technology, the company has created many world's first and Japan's first social and public systems, including automated ticket gates and other train station automation systems. OSS will continue to contribute to the creation of a safe, secure, and comfortable society by quickly grasping social issues such as labor shortages, energy, and resilience, and by building total service solutions that include cutting-edge technologies such as IoT, AI, and robotics, software, operation, and maintenance.

【About Shinze Energy Inc.】

Founded in June, 2011. With the company purpose of "We take action for the blue planet," the company's business includes development, financing, and asset management of renewable energy power plants using solar power, wind power, small-scale hydroelectric power, and biomass. Since 2016, the company has also been focusing on its overseas operations, expanding its development and power generation projects in areas such as Southeast Asia and Brazil. In 2019, the company also entered the Energy Tech business, offering micro-grid and VPP construction, smart charging and discharging services for EVs, and other services through its self-developed EMS (energy management system). Shizen Energy Group has been involved in more than 1 GW of renewable energy generation in Japan and overseas.

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【About Shizen Connect】

Shizen Connect is an aggregation energy management system that collectively controls energy resources such as renewable energy power generation, storage batteries, EVs and EcoCutes. Shizen Connect can control residential solar power generation with storage batteries and V2H equipment, as well as operation of microgrids connecting multiple buildings with transmission lines, and VVP construction of several thousand units of energy resources. Individual control and VVP control tended to be separate, but Shizen Connect provides a one stop service allowing energy resources to be utilized with multi-purpose 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.

<For inquiries regarding this press release>

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