

Hokuriku Electric Power selects “Shizen Connect” for low-voltage VPP operations

- First Equipment Control DR Service via “Shizen Box” edge terminal -

Shizen Connect Inc. (Shizen Connect), a VPP^{*1} platform developer, is pleased to announce that its Equipment Control Demand Response Service, which supports electricity retailers in low-voltage VPP operations, has been selected by Hokuriku Electric Power Company (Hokuriku Electric Power) for its “Easy Solar” energy storage service plan . This is the first project where the “Shizen Box,” an edge terminal for energy IoT developed and manufactured by Shizen Connect, will be used to control the storage batteries with the Equipment Control Demand Response Service.



In order to achieve carbon neutrality by 2050, it is considered important to build a stable power system by making the best use of distributed resources such as renewable energy sources and storage batteries. In this context, low-voltage VPPs that control energy resources such as residential storage batteries in an aggregated manner are expected to play an important role in stabilizing the power system as flexibility, as they will be allowed to participate in the balancing market from fiscal 2026.

This service utilizes the “Shizen Connect” energy management system developed and operated by Shizen Connect, which remotely controls residential storage batteries to alleviate supply and demand constraints, reduce electricity procurement costs and capacity payments for electricity retailers, and will also be used for trading in various electricity markets in the future. This service started commercial operations in May 2023, and has been providing services to multiple major electricity retailers by linking the “Shizen Connect” with the remote control servers and cloud services of residential storage battery manufacturers^{*2 *3}.

With the adoption of this service by Hokuriku Electric Power, “Shizen Connect” can now directly communicate with and control storage batteries compatible with the ECHONET Lite standard using “Shizen Box” (Diagram 1). This development also enables the control of storage batteries and other energy resources lacking a manufacturer’s cloud service. The scope of this service is expected to expand further.

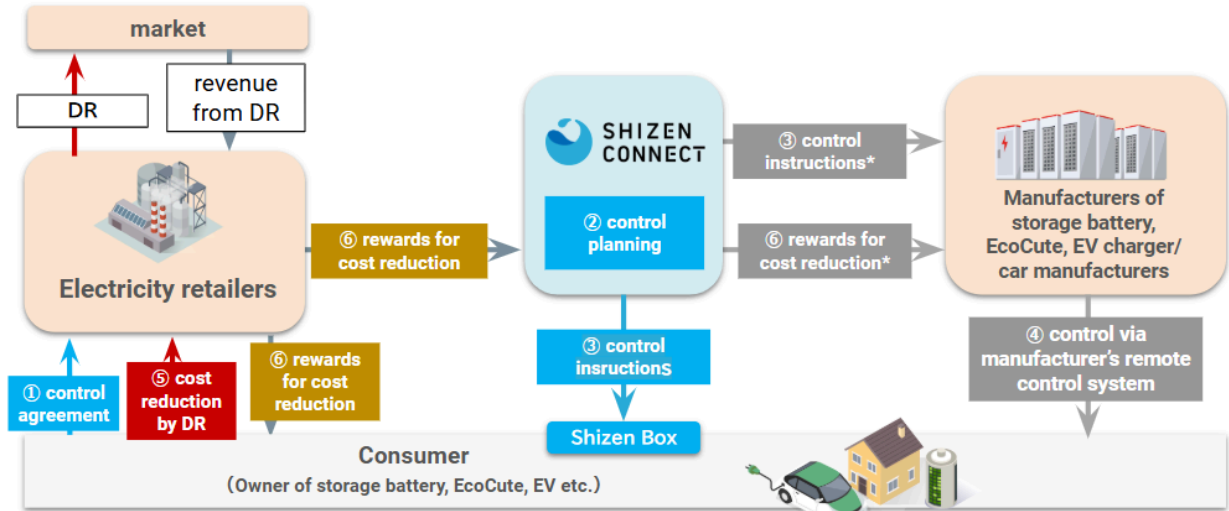
In September 2023, Hokuriku Electric Power launched the “Easy Solar” energy storage service plan, which offers a service package of solar power generation equipment and storage batteries for existing houses. From November 2024 onwards, this plan will include the introduction of the “Shizen Box” alongside storage batteries, which will be used to implement a “demand response service” using the storage batteries. Hokuriku Electric Power and Shizen Connect announced a capital and business alliance agreement*⁴ on July 9, 2024, and plan to continue promoting collaboration in the low-voltage VPP sector, such as the expansion of controllable resources.

In terms of the scope of this service, Shizen Connect has a domestic market share of approximately 60%*⁵ for residential storage battery manufacturers with a track record of commercial control operations, including cloud-based control with five residential storage battery manufacturers and control via the “Shizen Box” with one company. Moving forward, there are plans to expand collaborations with manufacturers of electric vehicles (EVs) and heat pump water heaters (EcoCute)*⁶, among others.

Shizen Connect also plans to roll out control functions for the balancing market and capacity market, as well as reverse demand response*⁷ control to avoid renewable energy curtailment*⁸.

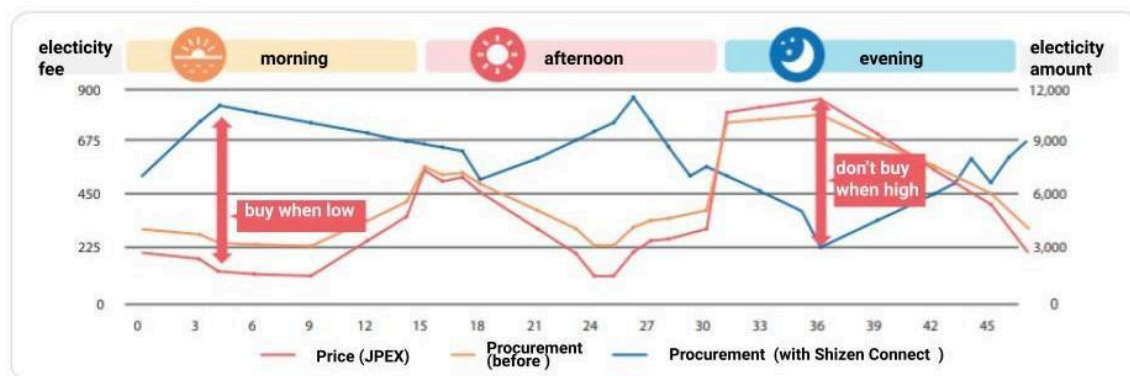
Shizen Connect remains dedicated to contributing to the realization of a decarbonized society, continuing collaborations with leading companies in various fields.

Diagram 1: Service scheme



*Hokuriku Electric Power is currently considering remote control via the manufacturer's remote control system, but this is not available as of November 28, 2024.

Diagram2: Mechanism for reducing power procurement costs



*1 **Virtual Power Plant (VPP)**: digital technology that remotely integrates and controls distributed energy resources (power generation facilities, storage batteries, EVs, etc.) and demand-side facilities as if they were a single power plant

*2 "Shizen Connect" selected as control platform for Tokyo Gas IGNITURE storage batteries (Press release April 23, 2024)
https://www.shizenenergy.net/2024/04/23/shizen_connect_igniture_saas/ (Japanese)

*3 TEPCO Energy Partner selects Shizen Connect for low-voltage VPP operation (Press release June 21, 2024)
https://www.shizenenergy.net/en/2024/06/21/sc_tepco_adopt_dr_support/

*4 Shizen Connect enters capital and business alliance agreements with 8 companies, including 3 major electric power companies, to advance VPP's social implementation (Press release July 9, 2024)
https://www.shizenenergy.net/2024/07/09/sc_capital_business_alliance/ (Japanese)

*5 Calculations based on storage battery manufacturer market share on Smart House monthly magazine No.108 (Feb. 2024 issue)

*6 Shizen Connect and Daikin in PoC with 3 major power companies for effective use of surplus RE (Press release July 31, 2024)
https://www.shizenenergy.net/2024/07/31/daikin_sc_eq_demo/

*7 **demand response (DR)**: 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. In particular, deliberately increasing electricity demand to help balance the grid during periods of excess renewable generation by operation of customer-side equipment or the charging of storage batteries is called "**reverse demand response**"

*8 **renewable energy curtailment**: the practice of stopping the generation of electricity from renewable energy sources when the amount of electricity supplied in an area exceeds demand

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

"Shizen Connect" is an energy management system that uses IoT/AI technology to control energy equipment such as storage batteries, EVs, and EcoCute heat pump water heaters, and enables market trading of the control value. It can reduce electricity bills by cutting peak demand, be used

to build microgrids, and create VPPs (virtual power plants) by performing control for various electricity markets. It has been adopted by Tokyo Gas and TEPCO Energy Partner as a VPP platform for residential storage batteries, and by Osaka Gas and Tokyu Land Corporation for controlling storage batteries for power grids.

Shizen Connect Inc.

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Founded: October 2, 2023

Shareholder: Shizen Energy Inc. 100%

* Shizen Connect has concluded a capital and business alliance agreement through the issuance of convertible bonds with stock acquisition rights with JERA Co., Inc., Shikoku Electric Power Co., Inc., Shin Nippon Air Technologies Co., Ltd., Tokyu Land Corporation, Tokyo Gas Co., Ltd., Nishi-Nippon Railroad Co., Ltd., Hokuriku Electric Power Co., Inc., and Hokkaido Electric Power Co., Inc.

Representative Director/CEO: Munekazu Matsumura

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

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

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