

Tohoku Electric Power selects Shizen Connect for low-voltage VPP operation

DR support service for “Equipment Control eco Challenge”

Shizen Connect Inc.(Shizen Connect), a VPP^{*1} platform developer, announces that its Equipment Control DR Support Service, which supports the low-voltage VPP operations of electricity retailers, has been selected by Tohoku Electric Power Co., Inc.(Tohoku Electric Power) for its “Equipment Control eco Challenge” (applications start from September 26, 2024).



Tohoku Electric Power Co., Inc.



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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 they will be allowed to participate in the balancing market from fiscal 2026.

This service utilizes the energy management system "Shizen Connect" developed and operated by Shizen Connect, and works in conjunction with the remote control system of residential storage battery manufacturers to remotely control residential storage batteries via the cloud. It is intended to be used as a measure to alleviate supply and demand constraints, to reduce electricity procurement costs and capacity payments of electricity retailers, and to be used in various electricity markets in the future (Figure 1). Following the launch of commercial services in May 2023, it has already been adopted by major electricity retailers ^{*2}
^{*3}.

The selection of this service by Tohoku Electric Power is the result of the joint demonstration with eight major retail electricity retailers announced in December 2023^{*4}. In the future, Shizen Connect aims to provide this service commercially to many electricity retailers, including many of the companies that participated in the demonstration.

For the control targets of this service, Shizen Connect is currently connected to the cloud with five residential storage battery manufacturers, and the total domestic market share of manufacturers that can be controlled is approximately 57%^{*5}. In the future, Shizen Connect will also expand its collaboration with manufacturers of electric vehicles (EVs) and heat pump water heaters (EcoCute)^{*6}.

Shizen Connect will also successively begin offering commercial control functions, such as balancing market and capacity market control, and reverse demand response control^{*7} to create demand and avoid curtailment^{*8} of renewable energy.

Shizen Connect will continue to work with a wide range of partners to contribute to the realization of a decarbonized society.

Tohoku Electric Power “Equipment Control eco Challenge” details

URL : <https://www.tohoku-epco.co.jp/dprivate/sl-denka/saving/dr/>

Figure 1: Service Scheme

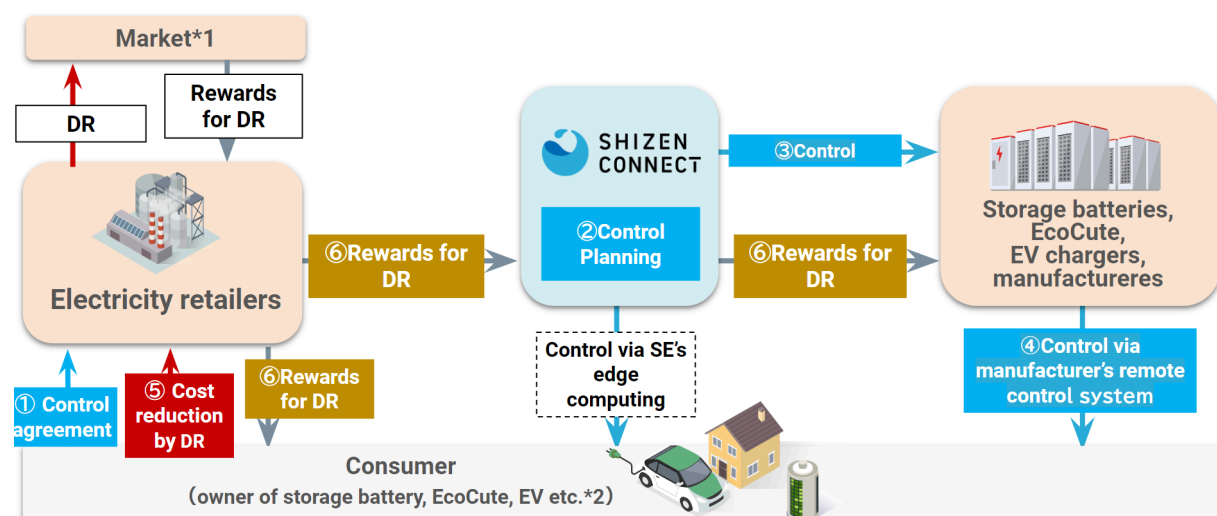
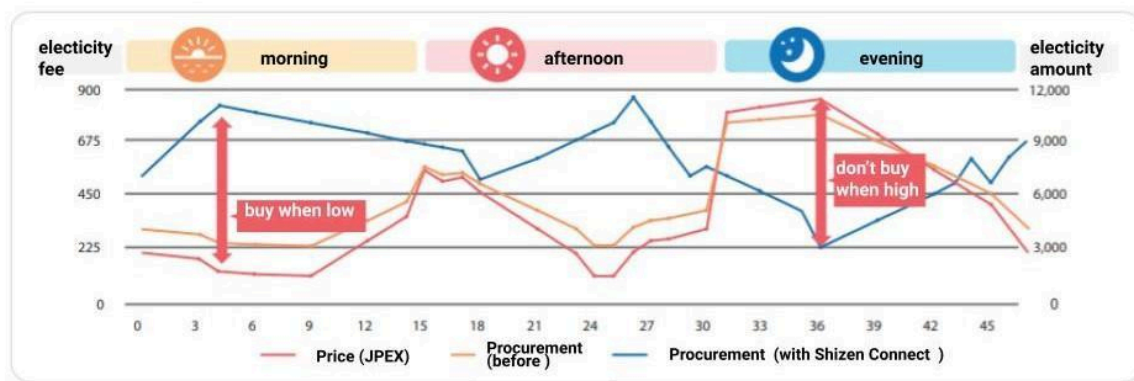


Figure 2: Mechanism for Reducing Power Procurement Costs



*1 **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

*2 "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_ignite_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_adapt_dr_support/

*4 Eight leading electricity retailers to conduct joint low-voltage VPP demonstration with Shizen Connect (December 5, 2023 Press release)

https://www.shizenenergy.net/en/2023/12/05/dr_support_demo_8_retailers/

*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 (July 41, 2024 Press release)

https://www.shizenenergy.net/2024/07/31/daikin_sc_eq_demo/ (Japanese)

*7 **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

*8 **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”

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%

*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. have concluded a capital and business alliance agreement through the issuance of convertible bonds with stock acquisition rights.

Representative Director: Munekazu Matsumura

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

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

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