

December 22, 2022  
NTT Anode Energy Corporation  
Shizen Energy Inc.

## **NTT Anode Energy and Shizen Energy form business alliance in energy management to achieve carbon neutrality**

- NTT Anode Energy and Shizen Energy agreed to a business alliance in the area of energy management using IoT technology to promote carbon neutrality.
- EV Smart Charging and Discharging Service, an electricity peak shaving service, will launch in March 2023.

NTT Anode Energy Corporation and Shizen Energy Inc. have agreed to a business alliance in the area of energy management using IoT/AI technology to promote carbon neutrality. The two companies will jointly develop integrated solutions with the aim of promoting carbon neutrality among municipalities and corporate customers throughout Japan.

As the first step, the two companies will launch the EV Smart Charging and Discharging Service in March 2023, which is being jointly developed and piloted with the cooperation of the Yamaguchi Branch of Nippon Telegraph and Telephone West Corporation from September 2022.

### **1 . Background**

In light of the Japanese government's declaration to become carbon neutral by 2050, communities and companies are facing the challenges of introducing renewable energy sources, shifting to electric vehicles (EVs), and strengthening their power resilience to cope with the severity of recent natural disasters. By jointly developing solutions that contribute to solving these issues, NTT Anode Energy and Shizen Energy will contribute to the realization of carbon neutrality and the enhancement of power resilience in communities and companies.

### **2 . Details of the business alliance and division of roles**

This business alliance will enable the commercialization of a solution package that reduces electricity costs and strengthens electricity resilience through EV recharge/discharge control (peak shaving and peak shifting)\*1. Furthermore, Shizen Energy will provide EMS and operational know-how from micro-grids and the Ministry of Economy, Trade and Industry's "Renewable Energy Aggregation Demonstration Project" in operation in various regions, which will accelerate studies of VPP\*2 by aggregating NTT Anode Energy Group's resources, and will provide integrated solutions

that contribute to the promotion of carbon neutrality for municipalities and corporate customers throughout Japan.

EVs can be considered as moving storage batteries, and the service will visualize vehicle information, State of Health (SOH)\*3, State of Charge (SOC)\*4, vehicle location and EV charger information. By integrally managing the SOC and other components of countless EVs scattered throughout the region, and predicting the amount of recharge/discharge available through AI, the companies will jointly develop a service that can be efficiently utilized to improve local production and consumption of renewable energy, without hindering the convenience of EVs as a means of transportation.

Company	Role
NTT Anode Energy	<ul style="list-style-type: none"> <li>- Provide integrated solutions</li> <li>- Engineering, procurement, installation, operation and maintenance of energy facilities and equipment</li> <li>- VPP operation (aggregator)</li> </ul>
Shizen Energy	<ul style="list-style-type: none"> <li>- Development and operation of Shizen Connect * 5</li> </ul>

### 3 . EV Smart Charging and Discharging Service Overview

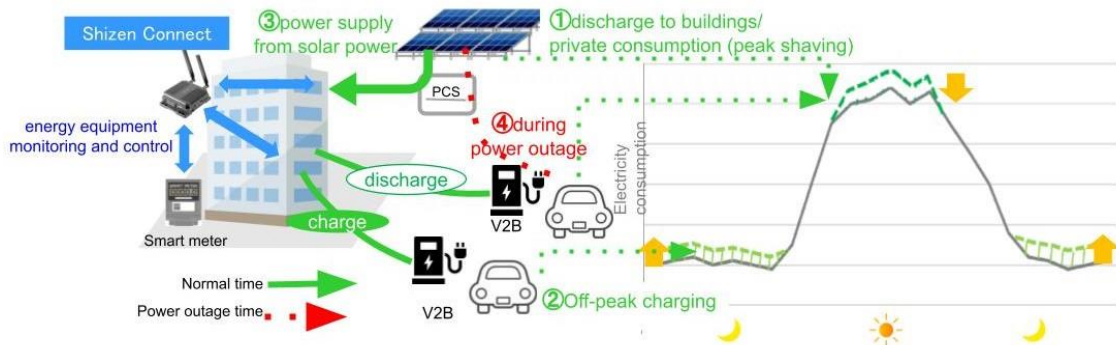
EV recharge/discharge units (V2B)\*6 and solar power generation facilities will be installed at high-voltage power facilities of municipalities and corporations, and by utilizing the forecasts of the facility's peak power consumption and solar power generation, accurate predictions can be made of the days and times when peak shaving is necessary, making it possible to achieve power consumption control which will reduce electricity costs. In addition, in the event of a large-scale natural disaster, resilience will be enhanced by charging EVs from the solar power generation facility.

<What the service will provide>

- (1) Peak shaving by discharging electricity from EVs and self-consumption of solar power generation (Reduction of electricity costs)
- (2) Curbing of electricity peaks by peak shifting EV recharging
- (3) Utilization of green energy from solar power generation facilities to high-voltage facilities
- (4) Reinforcing resilience by charging EVs from solar power generation facilities in the event of a large-scale natural disaster or power outage

<image of service>

(charging/discharging image)



<image of screen for visualization of electric power>



4 . Future Initiatives

Through the joint development of integrated solutions, NTT Anode Energy and Shizen Energy will accelerate efforts to introduce renewable energy and strengthen the power resilience of municipalities and corporate customers nationwide. Furthermore, the collaboration will contribute to the realization of a sustainable decarbonized society by utilizing energy resources such as power generation facilities, stationary storage batteries, and EVs as VPPs.

\*1 **Peak shaving** is reducing electricity usage during the hours of highest demand. **Peak shifting** is the shifting of electricity consumption during times of high demand to times of low demand to effectively utilize electricity and equalize electricity demand.

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\*2 **VVP** is an abbreviation for Virtual Power Plant, a system that uses ICT to integrate and control multiple distributed energy resources dispersed throughout a region as if they were a single power plant, and adjusts the supply-demand balance of electricity.

\*3 **State of Health (SOH)** describes the condition of a battery compared to its ideal conditions.

\*4 **State of Charge (SOC)** describes how much charge is left in the battery.

\*5 **Shizen Connect** is an aggregate energy management system that provides integrated control of energy resources such as renewable energy generation facilities, storage batteries, EVs, and EcoCutes, and is a registered trademark of Shizen Energy.

\*6 **V2B** stands for Vehicle-to-Building and is an abbreviation for technologies and systems that interconnect power between vehicles and buildings.

### **【NTT Anode Energy Corporation】**

URL : <https://www.ntt-ae.co.jp/en/>

### **【Shizen 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 international 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 internationally.

( URL : <https://www.shizenenergy.net/en/>)

### **【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.

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