Press Release

October 4, 2024

Waseda University

Tokyo Electric Power Company Holdings, Inc.

Waseda University and Tokyo Electric Power Company Holdings, Inc.

Promoting the Construction of a Demand Response Market Aimed at Realizing a Carbon Neutral Society after Obtaining Accreditation Under the METI OCEAN Project

Waseda University (Location: Shinjuku, Tokyo; President: Aiji Tanaka) and Tokyo Electric Power Company Holdings, Inc. (Location: Chiyoda, Tokyo; President: Tomoaki Kobayakawa; hereinafter "TEPCO HD") have obtained certification under the Open & Close strategy with Exploiting Academic kNowledge project (OCEAN project), a new system established by the Ministry of Economy, Trade, and Industry (METI) in order to certify various plans. This system promotes the formulation of "Open & Close Strategies" that integrate and leverage standards and intellectual property produced through joint research and development by corporations and academic institutions.

Through cooperation between industry and academia, Waseda University and TEPCO HD will formulate an open & close strategy for creating a market environment that contributes to the stabilization and regulation of power usage in consumer devices in areas that have a low-voltage demand (low-voltage resources[*1]), thereby contributing to the creation of a carbon neutral society.

Path to accreditation

In December 2022, Waseda University and TEPCO HD signed a Basic Agreement on Comprehensive Cooperation Aimed at Achieving a Carbon Neutral Society[*2] and have since engaged in multifaceted joint research for the purpose of strengthening research/education and interaction amongst people in the workforce. Through this joint collaboration, it has become clear that in order to contribute to the construction of a demand response (DR[*3]) market for low-voltage resources, it is necessary to develop rules and systems to standardize common communication methods and equipment that would allow everyone to participate in market

transactions. Therefore, a plan (hereafter "the Plan") to formulate these rules and systems was submitted in order to find all-encompassing and fair solutions to these issues from the both power grid-side and demand-side perspectives, and it was subsequently approved.

Background

By establishing directives, offering fee options, and using grid-based storage batteries, the TEPCO Group provides economic value to its customers through DR for customers with facilities that demand high-voltage resources[*4].

However, by utilizing low-voltage resources installed in households, which have an overwhelming amount of equipment, as DR devices, it is possible to maximize the use of renewable energy. Therefore, the Plan entails the formulation of an open & close strategy for creating a market environment that contributes to the use of low-voltage resources as stable power sources and for power output adjustment purposes, thereby contributing to the creation of a carbon neutral society.

Plan details

Ultimately, it will be necessary to leverage the various devices inside a household that can be connected to a power grid as DR devices and establish them as stable power sources, but in order to achieve this, standards that enable limits to be placed on these devices are indispensable. Therefore, the TEPCO Group's knowledge of the energy-related network and the unique characteristics of energy market management will be integrated with the academic knowledge of Waseda University, which also participates in the Ministry of Education, Culture, Sports, Science and Technology's WISE Program (Doctoral Program for World-leading Innovative & Smart Education)[*5]. This integration of knowledge and knowhow will be used to formulate standards for products that enable various device manufacturers to develop DR-compatible products as well as control standards for network participants as Waseda University and TEPCO HD construct a low-voltage resource DR market.

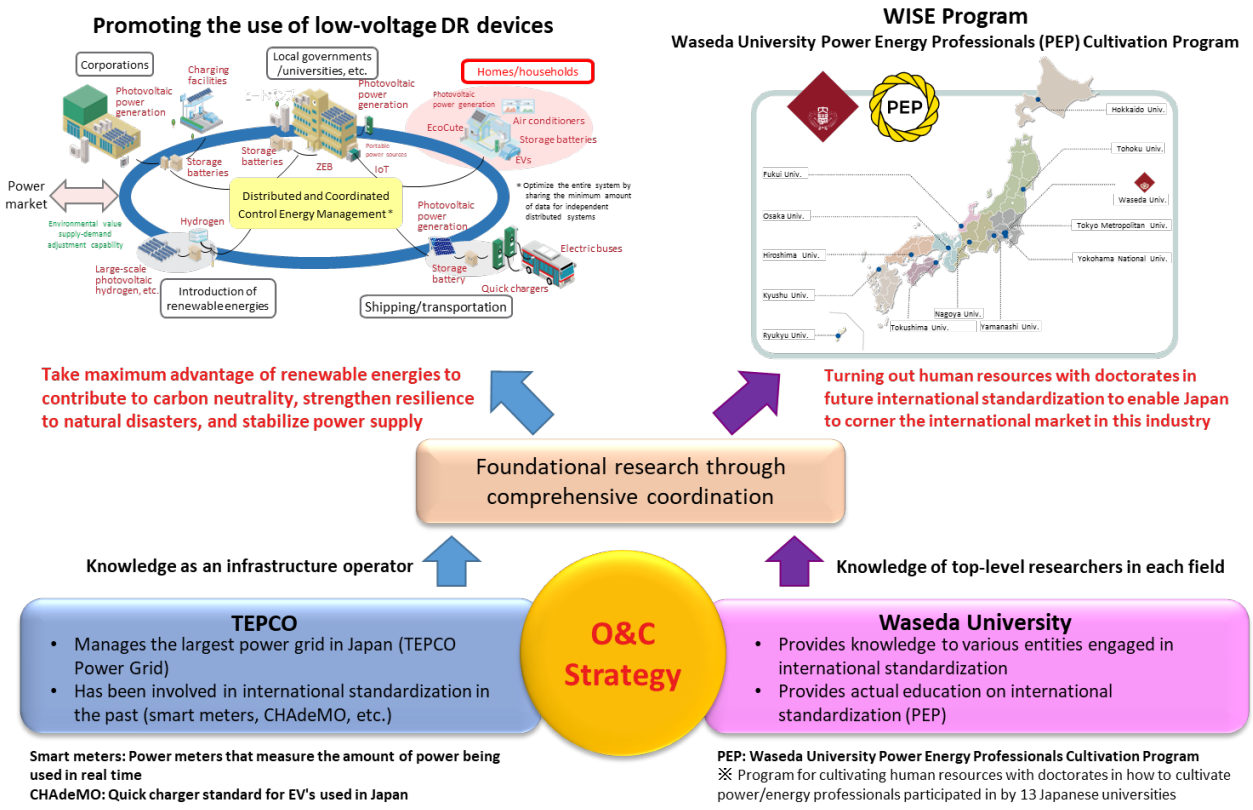
Furthermore, with a view to expanding into overseas DR markets, Waseda University and TEPCO HD will be involved in the establishment of international standards from an early stage, promoting activities with an eye to future standardization from the basic development stage of DR equipment. Waseda University also plans to offer seminars and lectures on international standardization in order to produce future doctors specialized in international standardization. By supporting and strengthening education, drawing awareness and attention to the spread of international standardization by creating public relations content, and assessing education surrounding international standardization, Waseda University and TEPCO HD aim to cultivate

a workforce that can contribute to the global society.

*1: Equipment often used by general households such as photovoltaic power panels, storage batteries, electric vehicles, air conditioners, and heat pump water heaters.
*2: December 13, 2023 press release entitled, "Waseda University and TEPCO HD sign Basic Agreement on Comprehensive Cooperation and Achieving a Carbon Neutral Society"
*3: Control method for balancing power demand with supply
*4: Facilities such as mega solar panels, grid-based storage batteries, large wind turbines, and heat storage tanks
*5: PEP: Waseda University Power Energy Professionals Cultivation Program (program for cultivating human resources with doctorates in how to cultivate power/energy professionals participated in by 13 Japanese universities)

Reference material:

Anticipated outcome of the accredited plan



Smart meters: Power meters that measure the amount of power being used in real time
CHAdeMO: Quick charger standard for EV's used in Japan

PEP: Waseda University Power Energy Professionals Cultivation Program
※ Program for cultivating human resources with doctorates in how to cultivate power/energy professionals participated in by 13 Japanese universities