

HEPCO Minami-Hayakita Substation 【Redox Flow Battery】

Operation of one of the world's largest storage battery systems has been started

The operation of a large-scale storage battery system at Minami-Hayakita Substation, which was jointly developed by Hokkaido Electric Power Co., Inc. (HEPCO) and Sumitomo Electric, was initiated in December 2015. With a rated output of 15,000 kW and storage capacity of 60,000 kWh, it is one of the largest redox flow battery systems in the world, and attracting global attention.



Building housing the storage battery system

❖ Aiming for a “new style of electricity that is friendly to everyone” in all stages of power generation, transmission, distribution, storage and use



Kikaku Tokumaru

Deputy General Manager,
Energy System Division
Executive Officer

We aim to develop a society with new power and energy infrastructure through the smart energy system proposed by the Sumitomo Electric Group, and redox flow battery is a key technology and product to the society. In 2012, a large-scale redox flow battery with storage capacity of 5,000 kWh was installed in Yokohama Works of Sumitomo Electric. More than 5,000 people from Japan and other countries have visited the facility since then and highly valued the capabilities of the battery such as the safety and long service life along with applicability to various uses related to the improvement of power stability and efficiency. Meanwhile, in this demonstration test in Hokkaido, a redox battery system with storage capacity of 60,000 kWh, which is 12 times higher than that of the system in Yokohama Works, has been operated as one of the largest power storage systems in the world. Hokkaido is a prefecture where a large amount of renewable energy such as wind power and photovoltaic power has been introduced, and there is demand for large-scale battery to adjust electric power storage. In the demonstration project, we will work together with HEPCO to obtain results that can earn a high level of trust from customers.

I belong to the Energy System Division, which is in charge of the commercialization of the technologies and products created in R&D units. I would like to use the project as a foothold for the marketing of large-scale power storage systems not only in Japan but also foreign markets including the US and Europe. It is planned to add container-type and other compact types of storage battery to the product lineup in the future to enhance the presence of Sumitomo Electric. We will continue to offer our original technologies and products for the smart energy system covering all power stages of power generation, transmission, distribution, storage and use.



Monitoring room



Maintenance and inspection



❖ We will develop a sustainable future with redox flow battery



Syuji Hayashi

Assistant General Manager,
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To launch this project, I served as the site manager of the battery facility installation work and engaged in all stages from the start of construction to the operation of the system. This system is based on the expertise and experience that Sumitomo Electric has accumulated on the redox flow battery. As an electrical facility, the system characteristically requires strict safety management. During the construction period of approximately 17 months, a total of about 200 people including suppliers worked on site, and the management of their daily and weekly work schedules, as well as sharing of information among them, was conducted in a meticulous manner. Then, in December 2015, the system was successfully completed, and the operation was begun in the same month. Considering that it is only the start of the main part, I am continuously working for daily duties with renewed determination.

This demonstration project aims to evaluate the performance of the redox flow battery in cooperation with HEPCO and clarify its superiority in performance and price over other types of battery.

By disseminating redox flow batteries, we would like to help solve the problems in renewable energy, such as the supply demand balance and surplus electricity, and establish an environment where renewable energy can be used more actively. We regard the demonstration test in the Minami-Hayakita Substation as an important step toward the sustainable future in which the redox flow battery plays a key role worldwide.