

Vanadium Electrolyte Production Line Completed! The Energy Storage Business of Pangang Group Vanadium Titanium & Resources Will Welcome Explosive Growth

Source: Financial Circle Beijing

On the evening of 25 May, Pangang Group Vanadium Titanium & Resources announced that the 2,000 cubic meters per year vanadium electrolyte production line built by the company's holding subsidiary Sichuan Vanadium Rong Energy Storage Technology Co., Ltd. in Panzhihua City was officially completed and started trial production. The electrolyte project is the first stage of cooperation between the company and Dalian Rongke. From 2023 to 2024, the two parties will invest in constructing a vanadium electrolyte production line with a capacity of 60,000 cubic meters per year in the second stage. It is understood that a production line of 60,000 cubic meters per year can meet the production needs of 1GWH vanadium batteries. Before this, Dalian Rongke won the bid for the 1GWH vanadium redox flow battery energy storage system project of Zhongnuo Huineng, and there are several vanadium redox flow battery energy storage projects with the order in hand. It is expected to strengthen further the cooperation with Pangang Group Vanadium Titanium & Resources. Vanadium Rong Energy Storage Technology was established in October 2022 as a joint venture between Pangang Group Vanadium Titanium & Resources and Dalian Rongke. Its main business covers the technical research and development, production and sales of electrolytes for vanadium redox flow batteries. After the 2,000 m³/year vanadium electrolyte production line is completed and put into operation, a new production technology route will be adopted to reduce the production cost of vanadium electrolyte further. Pangang Group Vanadium Titanium & Resources is the global leader in vanadium products, and Dalian Rongke is the world's leading provider of vanadium redox flow battery energy storage systems. The two have resource and technical advantages, respectively. Strong cooperation will accelerate the business of the vanadium battery energy storage process.



It is understood that large-scale vanadium battery energy storage projects under construction in China in 2023 mainly include 1GWH of China National Nuclear Corporation Huneng, 1GWH of China Energy Conservation Xinjiang, 500MWH of Hubei Xiangyang of State Power Investment Corporation, and 400MWH of Hunan Jishou Phase I project, etc., totalling more than 2.5GWH. According to the forecast of professional institutions, the installed capacity of vanadium batteries is expected to reach 8.6 to 12.9 GWh in 2025, requiring more than 100,000 tons of vanadium resources. The potential market demand has increased significantly, bringing huge room for growth in performance for the company.

From the perspective of the technical route, the vanadium redox flow battery is the safest technical route in the current electrochemical energy storage technology route. Different from lithium batteries, the electrolyte of the flow battery is separated from the stack. The electrolyte ions of the vanadium redox flow battery exist in the aqueous solution, and thermal runaway, overheating, combustion and explosion will not occur. Vanadium batteries support frequent charging and discharging and can be charged and discharged hundreds of times daily. The liquid electrolyte makes not cause an explosion or decrease in battery capacity. The charge and discharge cycles of the vanadium redox flow battery can reach 15,000 to 20,000 times. At the same time, the vanadium electrolyte solution can be recycled and reused after the battery life expires.

From the perspective of resources, China's vanadium reserves and output rank first in the world, unlike lithium batteries, which are highly dependent on foreign materials for lithium raw materials. The resources required for the development of vanadium batteries can be independently controlled, and the vanadium output of Pangang Group Vanadium Titanium & Resources accounts for More than 30% of the country's vanadium production. In 2023, Pangang Group Vanadium Titanium & Resources received 8,000 tons of orders for vanadium energy storage applications. According to the current development situation, the order volume in the field of energy storage is expected to increase further.