

Qiyuan's First Vehicle-Mounted Energy Storage Battery System Officially Released

On July 28, 2023, the first vehicle-mounted energy storage battery system for construction machinery developed by Qiyuan Core Power Co., Ltd. (Qiyuan), a subsidiary of CPID, was officially released, and the vehicle and battery separation mode is applied for the first time in the field of construction machinery, which will help solve the pollution and emission problems of traditional fuel and rechargeable electric construction machinery, improve energy efficiency and optimize investment cost.

The system developed by Qiyuan for construction machinery uses the currently largest battery packs in the industry and consists of high energy density battery modules with a special pack structure for construction machinery, a vertical thermal management unit and an integrated high voltage box. The system has a capacity of 284 kWh and is suitable for multi-brand and multi-model loaders, creating a vehicle-mounted energy storage ecology in all aspects. The system has been applied to many electric loaders, such as JINGONG and Breton loaders.

Compared with conventional batteries in the industry, the system has multiple advantages, such as high modularity, efficient thermal management, high reliability, and integration of vehicle and energy storage. The integrated system layout can reduce circuitry by 80%, wiring connections by 70% and assembly time by 60%, and greatly improve system stability. The centralized thermal management and innovative vertical water-cooling unit enable a wide operating temperature range between -35 °C and 65 °C, and the industry's first double-circuit rigid liquid cooling plate can increase the effective heat dissipation performance by 20%. The integrated battery and vehicle structure design and long-life cells can increase the system life by 50%. The standard battery modules are interchangeable with commercial vehicle battery modules and can reduce manufacturing costs, and idle or retired batteries can be used for industrial and commercial energy storage or mobile energy storage to improve the economic returns of the batteries during their service life.

Batteries can be flexibly charged or swapped depending on the application scenario. The battery management platform is used for unified monitoring and maintenance of the batteries to effectively extend the battery life. The vehicle and battery separation mode can reduce the one-time vehicle purchase cost with overall economic savings of 50% compared with the same type of fuel machine. The intelligent management of the whole process is precisely adapted to different application scenarios.

Qiyuan will soon release the vehicle-mounted energy storage system for heavy-duty trucks, and will continue to increase R&D investment to accelerate the electric substitution of construction machinery and contribute to the green and low-carbon energy transition.