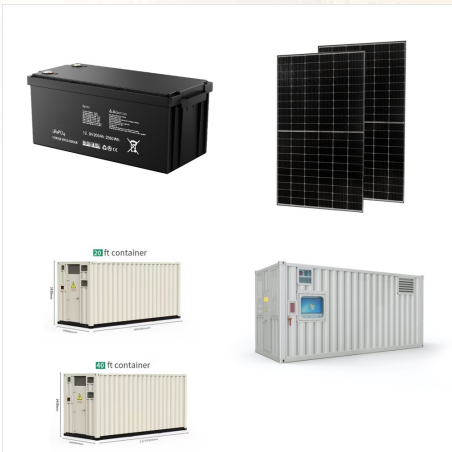
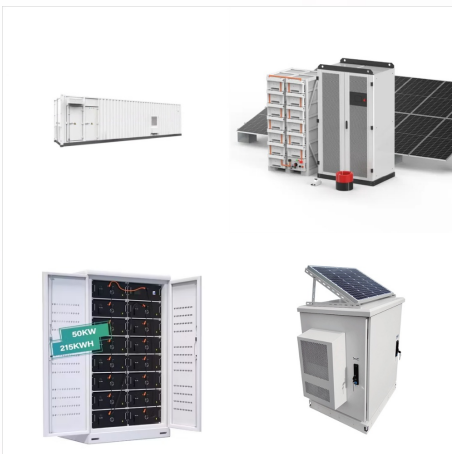


In the realm of energy storage, the choice between sodium-ion and lithium-ion batteries hinges on specific application requirements. While lithium-ion batteries currently lead in terms of energy density, cycling stability, and service life, sodium-ion batteries bring the promise of cost-effectiveness and broader operating temperature ranges.



Sodium-ion (Na-ion) batteries use sodium ions instead of lithium ions to store and deliver power. Sodium is much more abundant and environmentally friendly than lithium, but there are still several challenges left to make sodium-ion batteries the new battery champion.



Both lithium-ion and sodium ion batteries offer the optimum performance between the temperatures of 15 °C to 35 °C. However, they both still work between -20 °C to 60 °C. Sodium-ion batteries handle temperature extremes better than lithium-ion batteries, making them more suitable for extreme weather conditions. Cycling Stability

ARE SODIUM BATTERIES BETTER THAN LITHIUM



The redox potential of sodium is 2.71 V, about 10% lower than that of lithium, which means sodium-ion batteries supply less energy???for each ion that arrives in the cathode???than lithium-ion batteries. The second difference is that the mass of sodium is 3 times that of lithium.



Sodium-ion batteries manufactured by CATL debuted in July 2021 with an energy density of 160Wh/kg, which is marginally lower than that of LFP batteries but offers several benefits, including reduced production costs, enhanced performance at low temperatures, and improved safety.



? After decades of lithium-ion batteries dominating the market, a new option has emerged: batteries made with sodium ions. Scientists have been researching alternatives to lithium for years. Much of

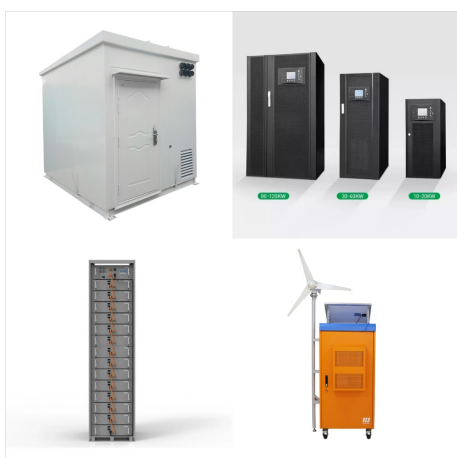
ARE SODIUM BATTERIES BETTER THAN LITHIUM



Sodium-ion batteries are a promising alternative to lithium-ion batteries ??? currently the most widely used type of rechargeable battery. Both types of batteries use a liquid electrolyte to store and transfer electrical energy, but differ in the type of ions they use.



Understanding the difference between sodium-ion and lithium-ion batteries can help determine the right choice for a given application. Given the limited supply and high price of battery-grade lithium and other advanced battery materials, alternative battery chemistries are being researched.



? Sodium, a common element, offers several advantages. It is abundant, making it more accessible than lithium. This abundance could address supply chain issues associated with lithium batteries. Furthermore, the mining and processing of sodium is less harmful to the environment and communities. Sodium-ion batteries have a similar mechanism to