# Sodium ion battery wh kg

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Sodium-ion batteries (NIBs, SIBs, or Na-ion batteries) are several types of rechargeable batteries, which use sodium ions (Na +) as their charge carriers. In some cases, its working principle and cell construction are similar to those of lithium-ion battery (LIB) types, but it replaces lithium with sodium as the intercalating ion.

It said its first generation of sodium-ion battery cells could achieve energy densities of up to 160Wh/kg and promised an increase to 200 Wh/kg for the next generation.

Addressing the World Young Scientists Summit, chief scientist Wu Kai said the new battery will be launched next year - four years after the release of CATL"s first sodium-ion battery in 2021. The first generation had an energy density of 160 Wh/kg, while the next one is expected to exceed 200 Wh/kg.

Stockholm, Sweden - Northvolt today announced a state-of-the-art sodium-ion battery, developed for the expansion of cost-efficient and sustainable energy storage systems worldwide. The cell has been validated for a best-in-class energy density of over 160 watt-hours per kilogram at the company"s R& D and industrialization campus, Northvolt ...

Following a breakthrough in technology, Northvolt is proud to add sodium-ion to its cell portfolio, enabling the expansion of cost-efficient and sustainable energy storage systems worldwide.

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Northvolt"s validated cell is more safe, cost-effective, and sustainable than conventional nickel, manganese and cobalt (NMC) or iron phosphate (LFP) chemistries and is produced with minerals such as iron and sodium that are abundant on global markets. It is based on a hard carbon anode and a Prussian White-based cathode, and is free from lithium, nickel, cobalt and graphite. Leveraging a breakthrough in battery design and manufacturing, Northvolt plans to be the first to industrialize Prussian White-based batteries and bring them to commercial markets.

Peter Carlsson, CEO and Co-Founder of Northvolt, comments: "The world has put high hopes on sodium-ion, and I"m very pleased to say that we"ve developed a technology that will enable its widespread deployment to accelerate the energy transition. It"s an important milestone for Northvolt"s market proposition, but battery technology like this is also crucial to reach global sustainability goals, by making electrification more cost-efficient, sustainable and accessible worldwide."

The sodium-ion technology, which has been developed together with research partner Altris, is intended to provide the foundation for Northvolt"s next-generation energy storage solutions. The low cost and safety at high temperatures make the technology especially attractive for energy storage solutions in upcoming markets including India, the Middle East and Africa.

Additionally, the technology can be produced with locally sourced materials, providing a unique pathway for developing new regional battery manufacturing capacity entirely independent of traditional battery value chains.

Northvolt"s first generation of sodium-ion cell is designed primarily for energy storage, with subsequent generations delivering higher energy density opening opportunities to enable cost-efficient electric mobility solutions. It represents an ideal complement to Northvolt"s product portfolio consisting of premium lithium-ion battery cells tailored for automotive customers, and energy-dense lithium-metal battery technology under development for aviation and high-performance vehicles at Cuberg, a Northvolt company based in San Leandro, USA.

Peter Carlsson concludes: "Our sodium-ion technology delivers the performance required to enable energy storage with longer duration than alternative battery chemistries, at a lower cost, thereby opening new pathways to deploying renewable power generation. The potential of sodium-ion in this market alone will make a tremendous impact in the drive towards global electrification."