Battery Cell Market - Growth, Trends, and Forecasts (2023 - 2028)

Market Report | 2023-01-23 | 120 pages | Mordor Intelligence

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Report description:

The battery cell market is expected to reach USD 42.08 billion in 2022, registering a CAGR of 14.32% during the forecast period.

Although the market studied was affected by the COVID-19 pandemic in 2020, it recovered and reached pre-pandemic levels. The growing demand for battery cells is expected to boost the market's growth during the forecast period. The rapid adoption of electric vehicles, mainly fostered by the declining price of lithium-ion batteries, is also expected to drive the growth of the market studied. However, the lack of direct access to battery metals is restraining the market's growth. With technological advancements, the price of smart gadgets is expected to decline, making them more affordable to the public, which is expected to provide growth opportunities during the forecast period.

Asia-Pacific dominates the market and is expected to witness the highest CAGR during the forecast period. The majority of the demand comes from countries like China and India.

Battery Cell Market Trends

Prismatic Cell Segment is Expected to Dominate the Market

Prismatic cells are a type of battery cell in the battery industry that were introduced in the early 1990s. The modern prismatic cell fulfills the demand for thinner sizes and comes wrapped in elegant packages like a box of chewing gum or a small chocolate bar. The prismatic cells make optimal use of space by using the layered approach. Other designs are wound and flattened into a pseudo-prismatic jelly roll. These cells are mostly found in cell phones, tablets, and low-profile laptops ranging from 800 mAh to 4,000 mAh.

Prismatic cells are also available in large formats packaged in welded aluminum housings and deliver capacities of 20-50 Ah. These are primarily used in energy storage systems and for electric powertrains in hybrid and electric vehicles. Hence, the larger

size of the prismatic cells makes them bad candidates for smaller devices like e-bikes and cellphones. Lithium prismatic cells are the preferred technology for material handling equipment (MHE), as the technology provides the best ratio of power and energy per volume unit. Therefore, these battery cell types are better suited for energy-intensive applications.

These battery cell types have gained popularity due to their large capacity and prismatic shape, making it easy to connect four cells and create a 12V battery pack, providing improved space utilization and allowing flexible design. It has the highest Ah nominal capacity and kWh energy and a higher overall battery energy density than other cells. These battery cells are not subject to swelling. Such advantages over other battery cell types make it preferable to the end users. However, it can be more expensive to manufacture, less efficient in thermal management, and have a shorter cycle life than the cylindrical design.

In January 2022, South Korean battery major LG Energy Solution Ltd planned to add a prismatic cell type to its lithium-ion battery lineup. The company revealed that it could add the prismatic form to its portfolio to broaden its customer base. The company's local competitors like Samsung SDI and SK On are moving onto prismatic cells with lithium-iron-phosphate (LFP), currently led by China's CATL, as top EV makers Tesla and Volkswagen adopted prismatic type earlier in 2021.

Korean players, both Samsung SDI and SK On, turned attention to rectangular packaging after Volkswagen decided that up to 80% of its electric vehicles would use prismatic batteries by 2030. In July 2022, Volkswagen Group announced the setup of its first battery cell factory in Salzgitter, Germany. It unveiled the prismatic unified cell would be used in up to 80% of its models. The plant is expected to start production by 2025, and the new cell plant, nicknamed SalzGiga, is expected to reach an annual capacity of 40 GWh, enough for about 500,000 electric vehicles.

Hence, due to the above-mentioned factors, the prismatic cell segment is expected to witness significant growth during the forecast period.

Asia Pacific is Expected to Witness Significant Growth

Asia-Pacific is the biggest manufacturer and exporter of consumer electronics, mainly dominated by China due to its large production capabilities. The region is expected to dominate the consumer electronics manufacturing sector during the forecast period. Hence, the Asia-Pacific battery market is expected to benefit from the growth of the consumer electronics sector.

China is one of the leading countries in the world that manufacture and utilizes batteries in a wide range of applications. In 2020, China manufactured 76% of the global lithium-ion battery and 44% of the global electric vehicles. The country is a hub of the electronic sector, i.e., nearly 48.4% of the total mobile phone export was from China in 2021, making China a significant market player in the battery cell industry.

South Korea is a major consumer of cylindrical and prismatic cells, primarily used in consumer electronics, household items, and electric vehicle batteries. Amid concerns about an anticipated slowdown in South Korean semiconductor exports in recent years, batteries for electric vehicles are emerging as a new pillar, which is expected to propel the country's economy in the coming years.

In July 2022, GODI became the first company in India to receive Bureau of Indian Standard (BIS) certification for its 21700 cylindrical NMC811 3.65V-4.5Ah lithium-ion cells. The company aims to set up a lithium-ion cell manufacturing factory by 2024. The newly certified cells are likely to cater to the needs of the EV and ESS sectors in India. Thus, such upcoming investments are expected to drive the battery cell market's growth in India during the forecast period.

Hence, due to the above-mentioned factors, the Asia-Pacific segment is expected to witness significant growth during the forecast period.

Battery Cell Market Competitor Analysis

The global battery cell market is fragmented. Some key players in this market (in no particular order) include LG Chem Ltd, Contemporary Amperex Technology Co. Limited, BYD Company Limited, GS Yuasa Corporation, and Panasonic Corporation.?

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