Next-Generation Advanced Batteries: Global Markets

Market Research Report | 2023-03-30 | 161 pages | BCC Research

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Report description:

Description

Report Scope:

This report analyzes the global and regional markets for the next-generation advanced battery. In the battery type segment, solid-state batteries, lithium-sulfur batteries, next-generation flow batteries, metal-air batteries and others (magnesium ion batteries, sodium-sulfur batteries, sodium-ion batteries) are considered. We have omitted lithium-ion batteries, as well as any battery related to lithium-ion, from the scope.

Market data in this report quantifies opportunities for manufacturers of next-generation advanced batteries. In addition to identifying various battery types and applications, it also covers the many issues concerning the merits and prospects for the next-generation advanced battery. This includes corporate strategies, emerging technologies and the means for providing low-cost, high-technology products. The report also covers many economic and technological issues critical to the industry's current state.

The report has been prepared in a simple, easy-to-understand format; and tables and figures are included to illustrate historical, current and future market scenarios. The report also covers leading companies with information on the next-generation advanced battery, business footprints, revenues and employee strength, among other factors. The report also includes a list of other companies in the global market along with their product-related information.

This report has considered the impacts of COVID-19 and the Russia-Ukraine war on the global and regional markets. For purposes of this report, 2021 is considered a historical year, 2022 is the base year, and the market values are forecasted for five years from 2022 to 2027.

Report Includes:

- 16 data tables and 36 additional tables
- A comprehensive overview of the global and regional markets for the next-generation advanced battery technologies
- Analyses of the global market trends with market revenue (sales figures) for 2021, estimates for 2022, forecasts for 2023, and projections of compound annual growth rates (CAGRs) through 2027
- Estimation of the actual market size for the global next-generation advanced battery technologies market both in value and volumetric terms, revenue forecast, and corresponding market share analysis based on the battery type, end use, and region
- Discussion of the major market drivers and opportunities in next-generation advanced battery, key shifts and regulations, industry specific challenges, and other region-specific macroeconomic factors that will shape this market demand in the coming years (2022-2027)
- Highlights of the recent advances made in next-generation advanced battery manufacturing and recycling, their commercial applications, industry structure, and a global supply chain analysis providing systematic study of all key intermediaries involved
- Coverage of the technological, economic, and business considerations of the global next-generation advanced battery technologies market through 2027
- Insight into the company competitive landscape and market share analysis of the major companies operating in the industry, and coverage of their proprietary technologies, strategic alliances, and other market strategic advantages
- Company profiles of major players within the industry, including Sion Power Corp., Contemporary Amperex Technology Co. Ltd., PolyPlus Battery Co., GS Yuasa Corp., and Sion Power Corp.

Executive Summary

Summary:

The term "advanced battery" refers to the next generation of batteries, including battery cells that can be integrated into modules, packs or systems for energy storage applications, which also includes batteries for electric vehicles or the power grid. These batteries differ from lithium-ion batteries in that they have a higher energy density, a longer lifespan, are more affordable, quick to charge and have superior efficiency. Lithium-sulfur batteries are the next-generation advanced batteries that may eventually replace lithium-ion cells due to their greater energy density and lower price.

An ever-expanding range of portable devices, including those formerly powered by primary cells or firstgeneration rechargeables, are powered by improved next-generation batteries (flashlights, radios, etc.).

Hybrid electric vehicles, cell phones, cellphones, laptops and tablets are just a few examples of devices that would not be practicable or convenient without next-generation batteries. There is still room for growth in plug-in electric vehicles' new military battery industries. Utility load leveling, wind farm power storage and distant power generation applications of extremely advanced batteries are also being investigated.

Electrification fueled by renewable energy, which includes the electrification of cars (e-mobility), buildings and cities, is the way to decarbonize the planet and fight climate change. The best method to transition to a green economy is to boost the use of renewable energy sources like solar, wind and hydropower, as well as other low-carbon technologies like electric vehicles, storage, and the use of microgrids and smart grids. By removing greenhouse gas emissions from the atmosphere, electrification can reduce the effects of global warming.

The output of minerals like lithium, cobalt and graphite is anticipated to increase significantly due to the growing demand for clean energy technology such as batteries, wind turbines, solar panels or electric vehicles. Efforts to electrify the economy and develop technology rely on next-generation batteries, considering that they surpass conventional batteries in terms of

performance, efficiency and safety.

The quick response, modular construction and flexible battery installation has enabled the transportation sector's decarbonization and increased grid integration of intermittent renewable energy technologies. By filling in the gaps left by wind and solar power plants' variable production and reducing energy waste, batteries help utilities and grid operators maintain the dependability of the electrical system. According to IRENA(International Renewable Energy Agency), battery systems can upgrade minigrids, enable the "self-consumption" of rooftop solar power and store electricity in electric vehicles, providing frequency response, reserve capacity, black-start capability (restoring an electric power
system) and other grid functions.

The impending challenges are primarily related to the impact of the Russian invasion of Ukraine. Russia is a significant supplier of the metals required for EV batteries and the whole renewable energy industry, from wind turbines to solar panels. The crisis in Ukraine has reversed a decade of declining costs in the green technology sector, along with ongoing COVID-19 supply chain disruptions, logistical constraints, and surging worldwide inflation. This has resulted in a delay in adopting low-carbon technology around the globe.

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