

Batteries, Charging and Exchange Systems for Materials Handling Equipment

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Abstracts

REPORT SCOPE:

The scope of this report is specifically focused on industrial material handling equipment batteries, charging systems and battery exchange systems in North America. The market is broken down by major battery types, charging technologies, exchange systems and owner operations and applications. The market is discussed with estimated values derived from available data.

This report focuses only on off-road, battery-provided motive power industrial applications for material handling equipment. On-road vehicles—such as transport vehicles or trucks, internal combustion and fuel cell powered vehicles and their refueling systems—are not investigated. In a like manner, large specialty applications such as ship cargo handling equipment are not investigated.

Automatic guided vehicles (AGVs) are a special class of robotic material handling equipment. AGVs are the specific focus of BCC Research report IAS099A, "Automated Material Handling Equipment and Systems: The North American Market." AGVs perform many of the same functions as other material handling equipment and, for this report, will be grouped with the similar class rather than being discussed separately.

The report also includes a discussion of the major vendors across each application and specialty market. Further, it explains the major drivers and dynamics of the market and current trends within the industry.

The report concludes with a special focus on the vendor landscape and includes detailed profiles of the major vendors in the industrial battery, battery charging and



battery exchange equipment markets.

This report details actual figures for 2018 and compound annual growth rate (CAGR) projections for 2019 to 2024. A discussion of emerging technologies describes the areas in which research is being performed and incentivized and their anticipated effects in future markets.

Note that values are expressed in millions of dollars, and sales are expressed in 1,000 units. In both cases, totals are rounded to the nearest integer (i.e., less than \$500,000 is expressed as \$0). Values are based on the equivalent of retail, which is the price publicly advertised. In some cases, sales may be less than 500 units but because of high cost, value may exceed \$1 million. In these cases, the quantities are expressed as "



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BYD MOTORS INC.

CCB INDUSTRIAL BATTERY CO.

CELL-CON BATTERY & CHARGER SOLUTIONS

CLARK MATERIAL HANDLING

CROWN BATTERY MANUFACTURING CO.

DOUGLAS BATTERY

DYNO BATTERY

EAST PENN MANUFACTURING (DEKA BATTERY)

ELECTROVAYA

ENERSYS

EXIDE TECHNOLOGIES (GNB)

GNB INDUSTRIAL POWER

FARASIS ENERGY

FLUX POWER

FULL RIVER BATTERY

GB INDUSTRIAL BATTERY

GREEN CUBES TECHNOLOGY

HARRIS BATTERY CO.

HAWKER POWERSOURCE

HITACHI CHEMICAL ENERGY TECHNOLOGY CO. LTD.

HOPPECKE BATTERIES INC.



HOPPECKE, NORTH AMERICA

INDUSTRIAL BATTERY & CHARGER INC.

INDUSTRIAL BATTERY ENGINEERING INC.

NAVITAS SYSTEMS

NAVITAS SYSTEMS ADVANCED SOLUTIONS GROUP

ONE CHARGE

RELION BATTERIES

ROMEO SYSTEMS INC.

SAFT

SAFT AMERICA

STORAGE BATTERY SYSTEMS INC.

SWIFT INDUSTRIAL POWER

TROJAN BATTERY CO.

U.S. BATTERY MANUFACTURING CO.

Battery Charging Suppliers

ADVANCED CHARGING TECHNOLOGIES (ACT)

AMETEK INC. (PRESTOLITE POWER)

APPLIED ENERGY SOLUTIONS

CELL-CON BATTERY & CHARGER SOLUTIONS

CHARGING TECHNOLOGIES INC.

CLARK MATERIAL HANDLING

CROWN BATTERY MANUFACTURING CO.

DC POWER TECHNOLOGIES (DCPT)

DELTA-Q TECHNOLOGIES

DOUGLAS BATTERY

ELECTROVAYA

ENERSYS

EXIDE TECHNOLOGIES (GNB)

FULL RIVER BATTERY

GREEN ENERGY CONCEPTS INC. (GECI)

HAWKER POWERSOURCE

HOPPECKE BATTERIES INC.

HOPPECKE, NORTH AMERICA

INDUSTRIAL BATTERY ENGINEERING INC.

KODIAK INDUSTRIES INC.

LAMARCHE MFG

MINIT-CHARGER (ACCESS CONTROL GROUP)

PBM

POSICHARGE/WEBASTO CHARGING SYSTEMS



POWER DESIGNERS SIBEX
RELION BATTERIES
STANBURY ELECTRICAL ENGINEERING
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