By significantly lowering fuel consumption, maintenance costs and emissions, batteries for hybrid power supply, storage and main propulsion provide extraordinary benefits. With improved capacity-to-weight ratio from lithium-ion technology and growing demand for lower emissions, batteries have become an ever-increasingly attractive option for the large-scale supply of energy in the maritime sector.

COBRA is an advanced concept employing inherent safe and environmentally friendly lithium iron phosphate cell technology and taking the special requirements of maritime operation and classification into account. Any scale of power storage is available by freely configuring modular units in standardised racks of up to 1,000 V DC. They include integrated Battery Management System (BMS), gas exhaust and air or water cooling for safe and reliable operation.

The Compact Battery Racks are being assembled and tested in their own newly built production facility near the Hamburg headquarters of Becker Marine Systems.
COBRA PROPERTIES
• Battery modules with high-energy cells or high-power cells
• Up to 94 kWh and 1,000 V DC per battery rack
• Battery clusters with up to 10 battery racks and 1 control cabinet
• Battery racks available in different height configurations
• Fulfills highest safety requirements with no propagation in case of thermal runaway on cell level
• Flexible interface to Power Management System (CanBus, ModBus or others)

COBRA provides a robust and reliable modular battery design with a superior energy density. A battery cluster with up to 10 battery racks and 1 control cabinet provides a capacity of 940 kWh at a length of less than 6 meters and a depth of 0.6 meters. The COBRA system is freely scalable from a few kWh to several MWh by adding as many battery racks or clusters as required.

High-quality and inherent safe LFP battery cells and a permanent monitoring by battery management system on cell, module and on rack level guarantees the highest standards for safety. LFP battery chemistry does not catch fire during thermal-runaway, short-circuit or mechanical damage which makes the COBRA system the safest solution for the use at sea where safety is essential.

COBRA APPLICATIONS
• Electric drives
• Hybrid drives
• Peak shaving
• Hotel load
• Load leveling
• Energy storage

COBRA KEY FACTS

Performance
• Up to 1,000 V DC
• Energy-optimised modules
• Power-optimised modules
• Air or water cooling

Reliability
• High cycle life for longlasting performance
• Redundant system layout
• High quality LFP battery cells

Safety
• Inherent safe LFP chemistry
• No propagation in case of thermal runaway
• LFP cell does not catch fire during collision, short-circuit or TR

Service
• Modular design, easy replacement
• Plug and play installation

Environment
• Second life application
• Possible recycling of battery modules
• Cobalt free battery

www.becker-marine-systems.com