

# Construction is owning electrification

FLASH BATTERY, A MAJOR BATTERY SUPPLIER FOR INDUSTRIAL VEHICLES, SHOWS HOW LITHIUM-ION TECHNOLOGY SHAPING THE FUTURE OF THE CONSTRUCTION INDUSTRY

More and more industrial sectors are jumping on the electrification wagon, lured by the benefits offered by the latest generation of lithium batteries, including lower air pollution and noise emissions, maintenance cost reductions and high performance. Construction is one, betting more than ever on compact vehicle electrification through the use of high-voltage, high-power batteries. The segment is on the fast track to electric conversion, with vehicles on show at Bauma Munich 2022 being proof.

## Electric demands

Getting the energy management element right however is posing the biggest challenge when it comes to the electrification of vehicles like heavy duty side loaders, excavators, concrete trucks, cranes and mini-cranes. Due to the nature of their day-to-day work, these vehicles tend to consume large quantities of energy and require good run time and power. This means the focus should go to the high energy density of the battery pack, as this will allow these vehicles to store as much energy as possible in a limited volume.

Construction is a very broad industry. It incorporates the lifting sector, which was front-runner in the electrification of aerial work platforms and cranes, initially with lead-acid batteries and now with lithium. Today this segment is on a dynamic pathway: given the current technology in terms of space, volume, costs and charging infrastructure, the trend is moving towards the electrification of small-size applications, with batteries in the 5kWh to 100kWh range.

## Lithium solutions

As with construction OEMs, LFP (lithium-iron-phosphate) is the chemistry of choice for lifting applications. The most stable and safest in the market today, it stands out as the best suited to the demands of this sector and it delivers reliability, performance and good range.

What is more, the increasing demand for hybrid systems is



ABOVE: Construction is increasingly turning to electrification with lithium batteries

BELOW: Flash Battery's portfolio of lithium solutions

coming into play in the lifting sector and it is especially evident in the articulated crane and mini-crane segment. Here the machines work in battery-powered full-electric mode but also have the option to incorporate a range extender in the form of a motor-generator.

## Reliability

This brings two important advantages. First, construction site operators will feel safer knowing they can rely on an alternative option based on the operations they need to perform. Second, emissions and fumes are drastically reduced, because the combustion engine only works for a short period of time and in many cases, it is

there just to back up the efficiency of the lithium battery. Many big players of the motoring world are already offering perfectly integrated hybrid kits and although this might only be a transitional step to the switch to full-electric, hybrid could definitely prove to be a versatile solution.

## Constant evolution

Whichever way the trend swings, hybrid or full-electric, Flash Battery's lithium battery technology keeps on evolving to stay on top of market demands and support industrial manufacturers in the choice of compact, high-performing and long-life batteries custom made to their requirements. The company uses third-generation LFP cells, which help significantly increase the energy density while reducing the volume of the battery pack and maintaining safety levels high. It also uses control electronics, which are becoming more and more cutting edge.

The Flash Balancing System (the ultra-fast patented proprietary BMS) and Flash Data Center (the remote-control system that, in its latest evolution, uses AI and machine learning and continues to take on more predictive functions) have become great allies in improving vehicle efficiency and optimising performance over time, for impressive productivity gains. **ivT**



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