Custom Conversions of Vehicles to Construction Machines: eCap Breaks New Ground in Electro Mobility

Climate-friendly solutions are in keeping with the trend of the times. The eCap company was quick to realise this and made a name for itself by converting individual vehicles into electro mobiles. In the meantime, the experienced specialists are also converting construction machines so that they can be equipped and operated with an electric drive.

It was a world first which eCap presented along with its cooperation partner Optimas at the "bauma" trade fair in Munich this spring. The first electrically operated paver laying machine was delivered to the leading manufacturer of construction machines. Successfully converted by eCap, the S19e PaveJet now runs using a powerful 48V system.

"The successful conversion to a cutting-edge electric drive shows that emission-free, quiet and climate-friendly operation of paver machines and comparable vehicles is both practical and economical," says eCap Managing Director Leonie Behrens. Existing machines will be converted so that electro mobility can be optimally integrated into production.

To ensure a smooth process, eCap uses replaceable lithium-ion batteries. What was formerly a toolbox on the paver machine was converted for this purpose. This enables the machine to work two and a half to three hours before the battery needs to be replaced. It can then be immediately recharged at the construction site using a mobile charger. Battery life is also being further improved, through optimised hydraulics for example.

"This paver machine is a prototype for us", says Behrens, "we like working with industrial customers who are interested in new technology and want to mature it together with our experts". The first field of business of eCap, founded in 2015, was the environmentally-friendly electrification of drive systems in the automotive sector, initially for private vehicles and later in the commercial vehicle segment as well. eCap is currently doing project planning for a 40-tonne articulated truck.

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"We always see ourselves as project service providers, selecting the individual components, examining the driving profile analysis, converting the vehicle and also writing the software necessary for operation ourselves," reports Behrens, "in the end we sell our project planning and a vehicle approved for road traffic." The transfer of knowledge enables the customer to subsequently put the vehicle into series production on his own if desired.

Prototyping in the field of construction machines is also possible up to pre-series production readiness. This always entails an intensive test phase and evaluation of the results. The powertrain and other electrical systems are also selected by eCap employees. In addition, the prototype is optimised in terms of installation space and performance. eCap will also be devoting greater attention to the industry's requirements for integrated high-voltage systems.

The company offers a dedicated team of 30 employees at its Winsen an der Luhe location, including engineers, software developers, automotive mechatronics engineers, CAD design engineers and experts in project management, administration and sales. "We believe in the cutting-edge concept of electro mobility and want to create more jobs here," says Behrens, "which is why we are so pleased with the open-mindedness of the construction machinery industry in this innovative field."

Available picture material (all pictures © eCap), additional material available on request:

Electric conversion in progress

Optimas S19e, 48V system

Head office in Winsen (Luhe)

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