

## Croatia lithium-ion batteries

Under terms of the initial agreement, Leclanché will supply its INT-53 Energy rail battery system for two trains. Končar will be building the trains for HZPP, the state national railway operator. The trains will be battery multiple unit (BMU) and battery electric multiple unit (BEMU) models for passenger transport on routes surrounding the cities of Varazdin, Osijek, Virovitica and Bjelovar. There is also potential for further use on the routes around Split in the Dalmatian region and around Pula in Istria.

Together with the railway certified lithium ion (Li-ion) batteries, Leclanché will provide battery thermal management systems and multi-string-managers to allow proper battery cooling, ensuring that different battery strings charge and discharge in parallel and communicate as a single unit to the vehicle control unit.

Leclanché's INT-53 Energy packs are a modular and scalable lithium-ion battery solution for use on trains operating on partially or non-electrified rail routes. The systems are designed to the highest level of safety standards; they are equipped with functionally safe battery management systems (BMS), robust enclosures that mitigate any thermal events and are also IP67-rated against adverse environmental conditions.

Leclanché manufactures the entirety of its battery systems from cell production, through to pack assembly, in its German and Swiss factories. The whole process is certified in accordance with the International Railway Industry Standard (IRIS), a world-renowned global system for the evaluation of companies in the rail sector.

"We turned to Leclanché as battery supplier for several reasons, but most importantly, their focus on safety," said Gordan Kolak, CEO of Končar. "The eight-year cycle life of INT-53 Energy packs and their compliance with stringent European railway standards are of vital consideration to us."

Leclanché will provide 14 of its INT-53 Energy packs for the fully battery-powered train and 12 for the hybrid. It will also provide its dedicated battery thermal management systems.

"We are excited to collaborate with Končar on this project and supply our class-leading railroad battery packs to them. Leclanché is looking forward to an ongoing joint commitment to decarbonize the rail industry," added Phil Broad, CEO, Leclanché e-Mobility. "Our INT-53 rail pack is uniquely designed to meet the rigorous demands of rail manufacturers and operators - everything from cycle life, size, energy, power, safety and charge rate were key requirements in this nomination."

**CROATIA:** Rolling stock manufacturer Končar KEV has selected Leclanché to supply batteries for two prototype battery multiple-units which national passenger operator HŽPP ordered last December.

Leclanché is to supply 14 of its INT-53 Energy lithium ion battery packs for use on a battery-only multiple-unit, and 12 packs for a battery-electric trainset which will also be able to use 25 kV 50 Hz overhead

where available. It will also supply thermal management systems for the batteries.

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CROATIA: National passenger operator H?PP has awarded Kon?ar KEV a contract to supply six electro-diesel multiple-units for the 429 km Zagreb - Split route, which is electrified at 25 kV 50 Hz as far as O?tarije. The EUR57?3m contract signed on July 23 is being financed ...

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