

## Cairo battery technologies

Under the contract with Kinki Sharyo, Saft will deliver the battery systems for 92 eight-car trains, with one battery installed under the floor in each two-car section.

The battery kits will be manufactured at Saft's factory in Bordeaux, France. The first deliveries for the Cairo Metro Line 4 trains will start in May 2025, with completion at the end of 2026.

Lithium-ion batteries offer unique advantages over their alternative lithium and other elemental chemistries. Their benefits are outlined below. To read more about the similarities and distinctions between lithium-ion and lithium iron phosphate batteries.

Lithium-ion batteries offer the highest energy density in the rechargeable-battery market (100-265 Wh/kg). This makes charging a lithium-ion battery easier, faster, and long-lasting. This makes for a more powerful battery overall- even when compared to lithium iron phosphate ones.

Lithium-ion batteries are easy to use and relatively low maintenance, especially compared to nickel-based batteries. No priming equipment is required and maintaining their battery life does not entail scheduled cycling. Lithium-ion batteries also have no memory effect, which would cause batteries to perform at a lower capacity after repeated partial discharge and charge cycles.

In both batteries, the lithium-ion moves between the positive and negative electrodes to charge and discharge. Graphitic carbon electrodes with metal backings are used in the anodes of both battery types as well. Lithium atoms in the anode are separated from their electron and ionized during discharge. The ions move from the anode and pass through the electrolyte until they reach the cathode, reconnect with the electrons and become neutral. See a diagram of the charge and discharge process below.

Lithium-ion chemistry is high-performing and ideal for high-power applications. They deliver more current compared to batteries with nickel-based chemistry. They have the capacity to deliver up to 3.6 Volts, which is three times higher than their nickel alternatives. Due to their slow self-discharge rate (around 1.5-2% per month), lithium-ion batteries have a long shelf life.

Lithium-ion batteries provide an ideal renewable energy solution in many different applications. Their technology can be used to power or store energy for portable electronic devices, electronic cars, aerospace, and other high-power applications.

EIC company always bears the responsibility of developing the energy storage market in Egypt, Africa and the Middle East. From this standpoint, the company is proud to be the first supplier of lithium batteries and their applications in Egypt and Africa, through its strategic partnership with FAM International, which is the largest



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manufacturer of lithium batteries in the world.

EIC is one of the largest companies in the batteries field with all types and capabilities in ME, as it is the sole representative of a group of the largest European

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