

Altech Group develops with the CERENERGY® 1.0 MWh GridPack a scalable storage solution for large-scale industrial use

Heidelberg, 29 March 2023. With the widespread expansion of renewable energies worldwide, the need for industrial storage options is growing. Thus, a growth of 28 % CAGR for grid-connected (stationary) energy storage systems is forecast for the coming decades. According to reputed studies, the global market for battery storage systems is expected to grow from USD 4.4 billion (2022) to over USD 15 billion (2027) in just five years. In the battery joint venture with Fraunhofer for the CERENERGY® Sodium Alumina Solid State (SAS) Technology ceramic solid-state battery, the Altech Group will focus on this high-growth segment of large batteries and has designed a 1.0 MWh Grid Pack (ABS1000) for this purpose. In each GridPack, 18 60-KWh battery packs are installed and connected to the pack's power management system. Each GridPack has a capacity of 18x60kWh, 1080kWh at 600 volts and 100 Ah. The GridPack can be connected in series, parallel or in a matrix organisation, so this modular system is freely scalable. By operating several GridPacks together, the power required for grid operation of several thousand kilowatt hours can be achieved. A video can be viewed at: You Tube: <https://youtu.be/GeJFJtQ-B90>

The Altech GridPacks have been specifically designed to meet the IP 65 standard (for a high level of electrical sealing) and provide complete protection from the elements. This means that no additional shelters or buildings are required to house the Altech GridPack batteries and they can be safely installed outdoors in all weather and climatic conditions. The Altech GridPacks are constructed in a standardised sea container design, which allows for uncomplicated transport and ensures easy installation.



Figure 1 - 1.0 MWh Grid Pack (ABS1000)

The "plug-and-play" set-up of the GridPacks ensures that they can be easily installed even in remote locations. Thanks to the chosen design, the GridPacks, unlike other mega battery packs on the market, are designed to be stackable, minimising the space required (see Figure 2). The GridPacks thus offer the market a fully scalable and adaptable energy storage solution.



Figure 2 - Stackable and all-weather 1 MWh GridPacks

Unlike conventional lithium-ion battery mega-packs, the Altech GridPacks require neither external cooling nor heat supply. This significantly reduces maintenance, increases performance as no additional energy is consumed for operation and enables use even in residential areas, critical infrastructure or public buildings where previously use was not possible due to the noise generated by air conditioning and the risk of fire.

With their design and specific advantages over lithium-ion batteries, the Altech Group's GridPacks are an excellent means of stabilising the grid and storing energy from renewable energy sources in a safe and sustainable manner. In addition to their use as large-scale storage for grid operation, GridPacks are also suitable as a cost-efficient, long-lasting and safe solution, for example, for energy supply via microgrids and the charging infrastructure in the area of electric vehicles.

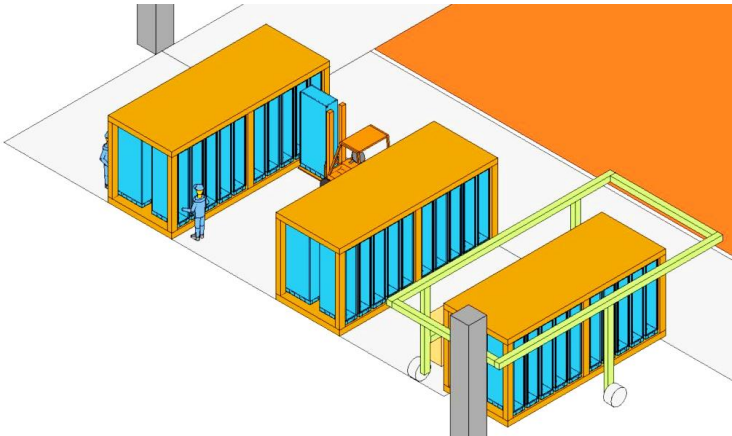


Figure 3 - Structure of the grid pack in the planned 100 MWh pa plant in Saxony, Germany

In all these areas, the non-flammable GridPacks prove superior thanks to a predicted lifetime, under all climatic conditions, of more than 15 years with unlimited cycles. Furthermore, **GridPacks do not use critical raw**

materials such as cobalt or lithium from third countries, but primarily only locally available sodium (common salt) and aluminium oxide (ceramics) and a small amount of nickel.

Background

CERENERGY® batteries offer the breakthrough industrial grid storage alternative to lithium-ion batteries. CERENERGY® batteries are fireproof and cannot explode. This allows for indoor use as well as stackability. The batteries have a service life of more than 15 years and work under all climatic conditions from minus (-) 40 °C to plus (+) 60 °C without external cooling or heating. Conventional table salt is used as the storage medium. CERENERGY® batteries are thus free of critical substances, some of which come from unsafe third countries or are mined and transported in an environmentally harmful way, such as lithium, cobalt, graphite and copper. The Altech-Fraunhofer joint venture is developing a battery plant with an annual capacity of 100 MWh (phase 1) on Altech's property in Saxony, Germany, for use in industrial grid storage.

About Altech Advanced Materials AG

Altech Advanced Materials AG (ISIN: DE000A2LQUJ6), headquartered in Heidelberg, Germany, is a holding company listed on the Regulated Market of the Frankfurt Stock Exchange. The company's goal is to participate in the market for lithium-ion batteries for electromobility through innovative and high-performance anode material based on high-purity aluminium oxide (HPA) - Silumnia Anodes™. Another focus is on solid-state batteries for stationary battery use with CERENERGY®.

Further information at: www.altechadvancedmaterials.com

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