Azelio’s energy storage technology shown to be significantly more sustainable than lithium-ion batteries

The climate impact of Azelio’s energy storage system (TES.POD) is significantly less than that of lithium-ion battery storage and dramatically less than that of diesel generators. This is concluded in a Life Cycle Assessment made by the Swedish research institute RISE to determine Azelio’s TES.POD’s global CO2-equivalent emission during its entire lifetime.

In the study, it was assumed that Azelio’s TES.POD, lithium-ion batteries and diesel generators would deliver electric power for 13 hours every day, for 25 years. The study thus disregarded that Azelio’s system also delivers a significant amount of heat that can be used as energy in many applications. The comparison between Azelio’s TES.POD and Li-ion battery focused only on the storage technologies and therefore excluded the environmental impact of generating the electricity input required to charge both systems. Due to the uncertainties regarding the lifetime of the Li-ion system, the battery would be completely replaced once, twice or three times during a life cycle of 25 years.

The report shows that the climate impact of Azelio’s system per unit electric energy supplied is 23 g CO2/kWh, which is 29% lower than a Li-ion battery system even when assuming that batteries were only replaced once over a 25 year life cycle (32 g CO2/kWh), and 96 % lower than a high-efficiency diesel generator (523 g CO2/kWh). Taking into account the heat generated by Azelio’s system, would extend its lead even further.

The study approach includes transportation and production of materials and components, manufacturing of equipment, transportation, assembly and installation of components, operation,
and end of life. More than 650 components per Azelio’s TES.POD unit were included as well as melting of the storage material. In this study it was assumed that both the TES.POD and Li-ion battery would be charged by a carbon-free energy source and therefore not generate any direct emissions during their lifetime.

Azelio’s unique energy storage technology stores energy from solar and wind power as heat in recycled aluminium and generates electricity and heat on demand at all hours of the day to a low cost. The system suffers no degradation over time and is fully recyclable at end-of-life. It is modular and cost effective from installations at 0.1 MW up to installations of 100 MW.

RISE is a Swedish independent, state-owned research institute. The study has been third-party reviewed in compliance with ISO14044:2006.

For further information, please contact
Jonas Eklind – CEO
Email: jonas.eklind@azelio.com
Tel: +46 709 40 35 80

About Azelio
Azelio is a public Swedish company specialising in thermal energy storage with dispatchable power. The technology is revolutionary for its unique capability to produce electricity and heat from the storage on demand at all hours of the day. The system stores energy in recycled aluminium and has a total efficiency of up to 90% from energy to heat and electricity. It is scalable and cost-efficient from 0.1 MW up to 100 MW and suffers no reduced capacity over time. Azelio has 150 employees, is headquartered in Gothenburg with production facilities in Uddevalla, development centres in Gothenburg and Åmål (Sweden), as well as a presence in Stockholm, Beijing, Madrid, and Ouarzazate (Morocco).

Azelio is listed on Nasdaq Stockholm First North. FNCA Sweden AB is the company’s certified adviser: +46(0)8-528 00 399, info@fnca.se. More about Azelio: www.azelio.com