LIFE CLEANAIRMM: 'Zero-emission battery power supply'

Clean power supply devices in construction and urban green care to reduce emissions from portable machines

From combustion engines to electric

Air quality has become a pressing issue in European cities as they struggle to reduce pollution. While most efforts have focused on reducing the impact of cars, construction machinery also emits significant amounts of pollutants. This includes heavy machinery such as excavators, but also hand-held tools and small petrol or diesel generators.

These generators contribute disproportionately to emissions due to low standards, idling, and oversizing. Oversizing is necessary for starting machines, while idling occurs due to workflow interruptions, external conditions, and negligence. The European Environmental Agency (EEA) and the Environmental Protection Agency (EPA) have determined that construction machinery accounts for 15-20% of emissions in urban centres.

Zero-emission battery power supply for cleaner air

Mobile electricity is essential for construction sites, outdoor workplaces, underground work, remote areas, emergency aid, and industrial applications worldwide. There is a need to reduce emissions from generators while ensuring the availability of off-grid electricity. In many cases, a professional-grade battery power supply provides a better solution without local emissions. It also enables the full use of battery-powered small equipment that often needs to be recharged more than once a day.

The LIFE CLEANAIRMM project piloted a new portable zero-emission battery power supply for professional use. The project team assembled and delivered 90 Battery-Power Supply Systems (BPSS) to partner construction companies for testing. Evaluations and feedback indicated that the BPSS met technical requirements, improved work safety, and contributed to the health of workers and bystanders.

Nearly 9000 BPSS were produced and distributed under a private label (instagrid.ONE) or as a white label during the project period. Demand for the technology was high, particularly from larger construction companies.

A significant contribution to sustainable development goals (SDGs) was achieved during the project's lifetime through setting local emissions zero and saving up to 97% CO_2e emissions over the whole product lifecycle and reducing noise emissions by nearly 100 %. Furthermore, diesel and petrol-driven generators were replaced by instagrid.ONE at 12 construction companies in seven countries across Europe. The next steps therefore include optimising instagrid.ONE for the US and UK markets and starting a pilot project in Africa.

Mission to zero emission (a message from the coordinating beneficiary - instagrid GmbH)

"We are piloting battery power supplies for professional use to replace diesel and fossil fuel generators for work on construction sites. Our solution improves air quality by enabling emission-free construction, reduces noise pollution and enhances human health and life quality."

Learn more

Project acronym: LIFE CLEANAIRMM

Reference: LIFE18 ENV/DE/000054

Project website

Do you want to benefit as well from support to commercialise your innovative solution?

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